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Multidisciplinary (content), Interdisciplinary (skills), Transdisciplinary (real life contexts) Curriculum

Presented by

Charles Rheault & Monika von Oppell
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Charles Rheault
Monika von Oppell

Curriculum is all of what students experience at school. It includes all the formally planned learning experiences. It also includes all the 'messages' students receive indirectly through the way they experience school life; what kinds of relationships they experience, what students must and cannot experience, the ways in which they must and cannot act, and how they are assessed. Educational assessment is a defined measurement of student achievement through a process of identifying, gathering and interpreting information about student learning. These messages are sometimes called the 'hidden' curriculum. Conscious efforts are to ensure that both the explicit curriculum, and the hidden curriculum contribute positively to the total School's aims.

Although the definition of curriculum can be read by some people as being vague, it has contained within it a strong framework that allow for supple crafting to take place in the hands of a skilled curriculum developers. The use of Rich Tasks, which was developed under the leadership of Dr. Gabrielle Matters (Education Queensland 2001), is one such framework that allows for such crafting to take place.

Education Queensland use the following general principles regarding Rich Tasks: They;
  • Are culminating performances that are purposeful and have value in the real world
  • Involve students solving problems
  • Require students to develop and use complex reasoning processes (higher order thinking processes such as analysis and problem solving)
  • Engage students in the learning process
  • Draw on widely accepted topics in subject areas
  • Connect to the world beyond the classroom
  • Are rich in their application as they represent an outcome of substantial intellectual and educational value.

Curriculum Integration (Teacher Planned)
Curriculum integration is a curriculum design that promotes personal and social integration through the organization of curriculum around significant problems and issues, collaboratively identified by educators and students, without regard for subject area lines (Beane, 1997). Planning for curriculum integration begins with an organizing theme, like "Living in the Future" or "Sustaining the Environment," followed by set question, "What significant activities might be done to address the theme?" Projects and other activities involve "integration" and the application of knowledge in the context of a theme. Content and skills are taught, learned, and applied as they are needed to work on particular themes. While knowledge is drawn from the traditional
disciplines, among other sources, students then move from activity to activity, or project to project, rather than from subject to subject during the school day (as in the multidisciplinary approach). With its emphasis on real-life themes, contextual application of knowledge, and constructivist learning, the curriculum integration approach is particularly well suited to help students integrate learning experiences into their developing schemes of meaning for themselves. For this reason, the term "integrative" is often used to describe this approach.

There are a number of methods by which this can occur, one being a disciplinary approach within a single discipline of discrete knowledge as defined by the Key Learning Areas (KLA's). This method would require a student to undertake an understanding of important knowledge and skills within a single discipline. This is not to suggest that knowledge or tools gained in a single discipline cannot be used to learn about knowledge in a separate discipline. This would be far from the truth, as all knowledge and skills are tied together to enhance all learning, which takes place. Educational writers such as Jay, Perkins, Fensham et al have long stated that it is what the students do with these skills and knowledge that demonstrates their true worth. The transference value between KLA's and appropriating them to ‘real world’ problems is where the assessment process of such skills as acquiring, refining, extending and applying knowledge to an authentic learning process breaks down.

The use of ‘Authentic assessment involves students in using relevant and useful knowledge, thinking and practical skills. This means the assessment task is real, that students experience the task as it could be carried out in a non-school environment; that the range of response modes are broad; and that the skills developed in other subject areas are enhanced. This change in emphasis can also be linked to a shift towards assessment tasks that emulate the kind of process-based higher-order tasks thought to represent good practice' (G. Matters 2003). Put simply assessment and reporting has not kept up with the actual learning process. The need to have ‘analysis to the point of paralysis’, as a justifying facet to the reporting practice, has always hindered curriculum developers. Our intrinsic need to be able to measure and ‘accurately’ report on student development needs to be completely overhauled. This issue is addressed below using The Key Abilities Model as a possible framework to overcome this problem.

The use of rich tasks provides one way of reconceptualizing the curriculum to invigorate student learning. Education Queensland (2001) define a rich task as a “culminating performance or demonstration or product that is purposeful and models a life role. It presents substantive, real problems to solve and engages learners in forms of pragmatic social action that have real value in the world. The problems require identification, analysis and resolution, and require students to analyse, theorise and engage intellectually with the world. In this way, tasks connect to the world outside the classroom (p.5)”. Education Queensland (2001) puts forth the notion that for such tasks to be truly rich they must be transdisciplinary. That is, they must draw upon
practices and skills across the disciplines while retaining the integrity of the separate disciplines.

We could therefore come to the conclusion that in order for Rich Tasks to be ‘rich’ they need to be transdisciplinary. In fact however, ‘some of the most valuable learning and connections made within rich tasks may be between concepts, ideas and processes within one discipline, rather than across disciplines’ (Dr P Moulds 2002).

**Multidisciplinary (Content)**

In a multidisciplinary approach to curriculum integration, a discipline-based theme is often used to connect two or more subject areas. Thematic teaching is interdisciplinary teaching that organizes instruction around and delivers curriculum through the exploration discipline-based topics. For example, the theme of modern weather forecasting could be used to study the historical aspect of the development weather forecasting, read about Faraday in literature and study weather instrument design in science etc.

**Interdisciplinary (Skills)**

In an interdisciplinary approach, curriculum is developed using an overarching theme with broad applications to all disciplines. One of the distinguishing components of this approach is that the themes are not commonly used, discipline-based themes. The theme of "Change", for example, has natural applications in all curricular areas that can be explored in a myriad of ways. This line of learning however assumes that there lies within each discipline a solid fundamental understanding of necessary base knowledge. As students demonstrate their strength(s) in one area there is a tendency to ignore weaknesses in others. It is this lack of equal application to all the given aspects on
the ‘wagon wheel’ outlined below that is its weakness. Curriculum designers must also put into play a logical method of assessing such a model. To simply dissect each sub-discipline of knowledge and report on each as being learned, given a specified set of outcomes or criteria, assumes too much of any assessment instrument. In this case, it is not the sum of the parts, which equals the whole. The overlap between each area of learning cannot be distinguished as being entirely discrete in the overall learning process.

Transdisciplinary (Application)
The distinguishing factor in transdisciplinary curriculum is that the student needs to drive the development of themes. The students are an integral part of curriculum development, and their ideas, concerns, and experiences pave the way for their own learning. Subject areas are not a consideration in theme development. The theory maintains that important aspects of subjects will necessarily be addressed at appropriate times as needed. The idea of a core of basic knowledge is very necessary to ensure that fundamental skills indispensable to carry out the task have been learned. One of the strong criticisms of this approach has been that it tends to rely on the concept of ‘just in time learning’. Just in time learning, as the name implies, requires the student to learn skills and knowledge as required and store this knowledge for future use. The strength of this approach however is that the knowledge learned is deemed by the learner to be of value given the ‘real’ situation of the problem in which it is learned (in context). With this approach, the transference of skills between disciplines comes in a more seamless and ‘natural state’. It is for that reason the drudgery of problem solving and obstacles such as negative dispositions to learning by the students are easily overcome.
As stated above the idea of a The Key Abilities Model provides a coherent structure for assessing and reporting students learning and performance through the years of compulsory schooling. In addition to the tracking of student performance on the systemically required core learning outcomes, the Key Abilities Model enables the school to map or profile each student’s demonstration of the Key Abilities along a developmental continuum, with performance level statements for each of six levels. The Key Abilities Model identifies a Spectrum of Key Activities, which includes tasks, genres and procedures associated with traditional disciplines and subjects. They are general enough that they can be employed in a wide variety of both directed and negotiated activities, and serve as easily assessable indicators of development of the Key Abilities. Learning and assessment of many of the Key Activities are supported by the use of rubrics. These rubrics not only identify the criteria of performance for particular Key Activities, but also describe the quality of the elements of performance for each criterion, along a developmental continuum.

Four Curricular Forms
This program of learning is based on provision of the Key Abilities Model’s four distinct kinds or forms of learning activity and their associated pedagogies, each of which overlaps and complements the others: (See Seaton, A. 2002, ‘Reforming the Hidden Curriculum: The Key Abilities Model and Four Curricular Forms’, Curriculum Perspectives,)

1. Focused Learning: Subject-focused learning and teaching relating to particular mandated core learning outcomes and Key Activities that cannot practically be learned and mastered solely in complex, transdisciplinary or real life contexts.
2. Investigations: Complex, active-learning units based on significant issues, tasks, questions or problems, each incorporating a variety of particular mandated core learning outcomes and Key Activities from several Key Learning Areas.

3. Community Development: Real-life, on-going, multi-participant projects with consequential, public outcomes, which provide authentic contexts for complex role performance and a wide variety of identified Key Activities.

4. Personal Learning Projects: Largely student-initiated and student-directed, problem-based or purpose-based learning activities, in which the topic and the Key Activities to be incorporated in the project are negotiated for individuals and/or groups.

This model supports learning in eight Key Learning Areas, but emphasises the development of six Key Abilities, namely Multiliteracies, Problem-Solving, Creativity, Community Participation, Self-Management, and Knowledge of Self, Others and the Environment.

Curriculum Integration (Teacher-Student Planned)
In a variation of curriculum integration, teachers and students plan together through a carefully guided group process to create a thematic curriculum based upon questions and concerns students have about themselves and their world (Beane, 1993). By clustering the questions into themes and by helping to plan activities and assessment procedures, students take on greater responsibility in the context of a democratic learning community.

Interestingly, problem-centered, real-life themes identified through teacher-student planning most often match those identified by teachers alone since most students are well aware of the world around them. Teachers have the responsibility for assuring that rigorous and relevant knowledge is taught, learned, and applied within the unit.

In most cases, teachers create unique blends of two or three approaches to suit their school situation.

As stated at the start of this paper where Curriculum was defined as all of what students experience at school in any form, be that Multidisciplinary (content), Interdisciplinary (skills) or Transdisciplinary (real life contexts) Curriculum, the real question in the learning process in any school context needs to be what the expectations of the parents and students are at each school. Teaching for the future is at best a ball gazing enterprise where the future is out tomorrow.

References
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