

# Understanding integrated curriculum

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## ABSTRACT

Integrated curriculum is currently being advocated in the United States to 'solve' many of the curriculum problems confronting education. Models of curriculum integration permeate the professional literature, yet there is little consensus as to exactly what is meant by integrated curriculum and how to establish such curricula in the publicly funded schools. The language of curriculum integration is confusing and leads to uncertainty and concern about the potential of integrated curriculum to impact positively on schools. Placing the models on a curriculum continuum will reveal that they range from traditional discipline-based, objective-driven, teacher-controlled models to interest-based, student exploration. Although historically research supports integrative curriculum, there is a paucity of current research which would support arguments for restructuring the American curriculum in this fashion. Additionally, there is a great deal of resistance to change both from within and outside the educational community to massive curriculum restructuring.

## KEY WORDS

curriculum; integrated curriculum; curriculum restructuring; interdisciplinary; multidisciplinary; core curriculum.

## UNDERSTANDING INTEGRATED CURRICULUM

As with many 'new' ideas in education, integrated curriculum has permeated the professional literature with numerous articles advocating its adoption by schools to 'solve' many of the curriculum problems confronting education. Commercial publishers have quickly designed and promoted materials which 'integrate' the curriculum. A quick look at any professional organization's

programme of events for their national and international meetings will reveal an increasing number of presentations focusing on 'integrated' curriculum. The attention to integration is growing exponentially and with such rapid growth comes confusion, uncertainty and concern over exactly what is meant by integration and how schools ought to go about implementing such ideas.

At the moment it seems that integration means whatever someone decides it means, as long as there is a 'connection' between previously separated content areas and/or skill areas. Before any teachers or administrators can successfully plan for integrated curriculum, a much clearer concept of what is meant by integration needs to be understood. Most advocates of integrated curriculum will base their arguments on some fundamental beliefs. Supported by positions taken by Dewey (1916), Kilpatrick (1918), Oberholtzer (1937), Squires (1972), Vars (1969, 1987), and Beane (1993), advocates indicate that an integrated curriculum is precipitated by the following:

- 1 Genuine learning takes place as students are engaged in meaningful, purposeful activity.
- 2 The most significant activities are those which are most directly related to the students' interests and needs.
- 3 Knowledge in the real world is not applied in bits and pieces but in an integrative fashion.
- 4 Individuals need to know how to learn and how to think and should not be receptacles for facts.
- 5 Subject matter is a means, not a goal.
- 6 Teachers and students need to work co-operatively in the educative process to ensure successful learning.
- 7 Knowledge is growing exponentially and changing rapidly, it is no longer static and conquerable.
- 8 Technology is changing access to information, defying lock-step, sequential, predetermined steps in the learning process.

These beliefs are obviously not new, nor are they necessarily confined to an integrated approach to curriculum, nor must they be packaged as a whole. However, if one examines them and believes that all of them are valid curriculum beliefs, then a means by which they can all be employed is through curriculum integration.

In attempts to help teachers understand curriculum integration, various authors have presented their models of 'integrated curriculum'. These models were designed to explain the various stages of curriculum integration and to 'ease the concern' many educators have about how to 'blend' content and/or create 'seamless' curricula.

Robin Fogarty, in her book, *The Mindful School: How to Integrate the Curriculum* (1991a) has identified ten models of curriculum integration, ranging from the fragmented disciplines (traditional) approach to a completely

networked approach to curriculum planning. Between the fragmented and networked points of Fogarty's continuum, she identifies eight other models of curriculum integration:

- 1 *Connected*: ideas within each content area are related to each other and connections are made between prior knowledge and knowledge yet to be learned.
- 2 *Nested*: the emphasis is on learning skills and organizational skills needed within each discipline in order completely to understand the content of the discipline. For example, in a mathematics lesson in third grade, a thinking skill such as classifying is related to specific knowledge of geometric shapes, tied together with charting or some other 'organizing' skill so that students understand the characteristics of geometric shapes, enhance their classification skills and develop organizational skills by which information can be stored and used for further reference. In this model, the content area still remains as the major focus of the lesson, but the skills of thinking and organizing ideas are highlighted within the lessons.
- 3 *Sequenced*: topics within a discipline are rearranged to coincide with those of another discipline. For example, a tenth grade mathematics teacher might teach a unit on probability at the same time as the biology teacher teaches a unit on genetics. The application of probability to genetics thus becomes apparent to the students and helps them to better understand both probability as a mathematical concept and the application of probability to the understanding of genetics.
- 4 *Shared*: disciplines are 'partnered' and units planned to focus on 'overlapping ideas or concepts', e.g. English and history are 'partnered' for a unit on the Civil War. The English teacher selects specific American literature relating to the Civil War which deals with patriotism, family, duty, loyalty, commitment and honour, while at the same time the students are learning about the battles, decisions and events which occurred during the war. Thus students might gain a better understanding of what war meant to the people as well as what the war meant to the stability and survival of the country.
- 5 *Webbed*: themes form the base of the curriculum. Disciplines use the themes to teach specific concepts, topics and ideas within the disciplines. For example, the teachers may select ethics as a theme. Each teacher, then, within his/her own discipline will address ethics as it is appropriate to the subject matter. This could mean discussing plagiarism in English class as the students prepare a research paper, analysing decisions made by politicians in a political science class, establishing rules of proper sportsman-like behaviour in physical education classes, perhaps concentrating on

ensorship of artistic work in fine arts classes, debating issues of genetic engineering in science, and looking at the proper use of computer technology in a mathematics class. The disciplines remain intact, the content of the disciplines is not changed, but the teachers make a special effort to address the theme as they individually work with the students on the content to be learned.

- 6 *Threaded*: a 'meta-curriculum' is designed around specific thinking, social or study skills and the content becomes the vehicle for these skills to be learned. At the same time, the classroom teacher infuses ideas about how one learns (multiple intelligences) and aids to learning (technology) which can help the students develop their metacognitive skills, i.e. they learn more about how they learn. For example, in an elementary school, a grade level team decides to focus their activities for two weeks on helping students to learn how to draw inferences from available data. So in language arts, as they are reading their stories, the teacher asks them to predict possible endings to the stories, while in mathematics she might ask them to estimate an answer to a problem, and in science establish a hypothesis for an experiment. In social studies, the students might be asked to generalize from one set of events to another. In all these cases, the teacher emphasizes that the students are making reasonable decisions based upon sets of given data and they would be encouraged to examine the 'credibility' of their inferences. Again, the content is preserved while the emphasis is on the process of learning.
- 7 *Integrated*: teams of teachers work together in all disciplines to find overlapping concepts and ideas around which they can plan units of study and implement them in common teaching time. This model is perhaps one that is currently used in many middle school programmes whereby interdisciplinary teaching teams work together to build units in which they share teaching responsibilities. Here, discipline lines begin to fade. Other examples of an integrated model as defined by Fogarty would be whole language in the elementary school and the humanities as taught in many high schools, colleges and universities.
- 8 *Immersed*: a student becomes immersed in a field of study and filters information from content areas through his/her own lens. Integration becomes the responsibility of the student. This 'model' of curriculum integration is what is perceived to be the model of learning advocated by many doctoral programmes. The learner is in control of the knowledge learned, the strategies used and the sharing of that knowledge with other students, the faculty and the academic world.

At the end of her continuum is her concept of networked integration. Networked integration requires learners to reorganize relationships of ideas *within* and *between* the *separate* disciplines as well as ideas and learning

strategies *within* and *between learners*. At this level of integration, the learners should be pro-active in the learning process and initiate their own searches for information, skills and concepts, relying on experts and other learners as resources for their own learning. A good example of this would be a social researcher scanning the electronic information highway to find and sort through information which might be pertinent to the research in which he/she is engaged. All sources are initially valid and the researcher determines what information he/she wishes to pursue and the extent to which that information will be used in his/her research. This is a highly sophisticated level of curriculum integration and one which might not become an integral part of a K-12 curriculum. The degree to which it can be used is really dependent upon the individual learner and his/her teacher.

The models presented by Fogarty raise the issue of what is meant by curriculum integration. If curriculum integration means the incorporation of processing skills and metacognitive skills within the disciplines-based curriculum, then her models accommodate that concept. If curriculum integration means the dismantling of disciplines as we now know them for a more comprehensive notion of curriculum, then only her integrated, immersed and networked models are helpful in our rethinking of the curriculum.

One of the issues made evident through an examination of Fogarty's work is the relationship between what we plan to teach and how we plan to teach it. Although most of us would agree that the what and how of curriculum are inextricably intertwined, we must also recognize that too often the 'how to' takes precedent over the 'what'. Thus the what can get 'lost' in the decision-making process which often leads to superficiality of content. For example, if our concerns for integrating thinking skills processes into the curriculum take precedence over the subject matter the students are going to think about, we may have students learning thinking skills and practising those skills on irrelevant and unimportant content. The same may be said of 'partnershiping' of subject matter teachers. If teachers are working together to help students make meaning out of the separate disciplines, then it behoves the teachers to develop lessons which are both meaningful within the disciplines as well as across the disciplines. Such planning takes a tremendous amount of time and thought on the part of teachers.

Heidi Hayes Jacobs (1989) has also attempted to define curriculum options for an integrated curriculum. She has established five options from disciplined-based to complete programme integration. Between the two ends of her curriculum options are 'degrees' of integration.

- 1 *Parallel disciplines*: the disciplines maintain themselves as separate entities; however, teachers attempt to sequence topics so that related ideas are taught concurrently within the separate disciplines. (This is similar to Fogarty's sequenced model.)

- 2 *Multidisciplinary*: related disciplines are brought together in a formal way for analysis and study, e.g. humanities, fine arts, political history. This type of integration supports the creation of a 'new' course to be offered by finding relationships between existing disciplines.
- 3 *Interdisciplinary*: specific units or courses of study are constructed to bring together all the disciplines within the school's curriculum. Units of study are designed around themes, ideas or issues which emerge from the regular curriculum. The units are taught for a specified period of time (two weeks, a month, a semester) determined by the teachers. Specific blocks of time are set aside in the daily or weekly schedule to accommodate the interdisciplinary units. However, the units do not supplant the existing disciplines, they are complementary to them.
- 4 *Integrated day*: a theme-based full-day programme focusing on student interests and needs. Based upon the British Infant School movement of the 1960s, this model is frequently promoted as a viable alternative to curriculum structure in early childhood programmes.
- 5 *Complete integration*: students determine their curriculum out of their life experiences, needs and interests. An example of this would be a school such as Summerhill where students decide what they want or need to learn based upon their interests. The programme at New College in Sarasota, Florida, allows each student's curriculum to consist of 'courses' and activities deemed most appropriate for the goals established by the students. At New College there is not one established curriculum which all students must take in order to complete their degrees. Specific activities, e.g. a wilderness survival experience or a congressional internship, are built into their programmes to provide them with experiences important to their development as a person, learner and scholar. Independent study and learning contracts are very much a part of the curriculum. Students who function best in this environment are self-motivated, independent, goal-oriented learners.

Jacobs has concentrated her definitions of integration on what happens specifically with respect to the disciplines. Do the disciplines remain as separate entities, taught in regular time-frames, or are their boundaries breached and new time-frames created to better explore learning possibilities? Her options are focused on the organizational structure of the curriculum and are less concerned with how the curriculum is taught, whereas many of Fogarty's models were more focused on the how rather than the organizational structure of the curriculum.

Susan Drake (1993) uses the terms multidisciplinary, interdisciplinary and transdisciplinary to describe frameworks for planning integrated curriculum. In her schema, multidisciplinary means that the same topic or theme is addressed by each of the separate disciplines, thus retaining the integrity of

each discipline. Interdisciplinary, on the other hand, is defined as identifying specific skills, processes or ideas which are common to all disciplines and addressing those through the disciplines. Most of Drake's suggestions focus on learning how to learn as the organizing factor for this approach to curriculum planning. Her final framework is transdisciplinary. Here the focus of curriculum planning is a 'life-centered approach' (41). Knowledge is examined as it exists in the real world. The content to be learned is determined by the theme and the expressed interests and needs of the students, rather than predetermined by some curriculum framework or set of curriculum objectives.

In addition to the definitions presented by Fogarty, Jacobs and Drake, other terminology is used to describe curriculum integration. Correlation, fusion and core are used by Vars (1987), while Stevenson and Carr (1993) prefer to use the term integrated studies, and Maurer (1994) defines interdisciplinary curriculum as co-related (re-sequencing content from different disciplines to 'match'), multidisciplinary (creation of a new course which blends content from different disciplines), interdisciplinary (organizing content around broad themes) and integrated day (an extensive restructuring of the curriculum). Still another term has been used, cross-disciplinary, usually in conjunction with teaching reading, writing and thinking skills across the disciplines. So what does all this 'new language' mean? In the arena of integration, how can we make sense out of all this terminology?

The 'new language' of curriculum is descriptive of ways to plan and organize the curriculum in order to bring meaning to the curriculum – a means of making the curriculum more connected to what is happening in the real world. For the curriculum to become more meaningful to learners, they need to see a connection between what they are learning in school and what information, skills and knowledge they use in real life situations. Since in real life content is not segregated into its respective pieces, 'integrationists' contend that the way in which students should learn content in school is not in segregated, unrelated bits and pieces, but as a whole body of related information which is then utilized appropriately in daily life activities. Thus integrationists are examining ways to bring meaning to the curriculum by rethinking how the curriculum can be planned, organized or restructured to provide these opportunities for meaningful learning.

### THE CURRICULUM CONTINUUM

An examination of the current use of the 'new language' of curriculum reveals a continuum of thinking about the curriculum. Movement up or down the continuum is dependent upon what role the disciplines (subject matter) play in the organization of the curriculum, what role 'processes' play in thinking

about the curriculum, and what role the teachers and learners play in developing and carrying out the curriculum.

At one end of the continuum is the discipline or subject-centred approach to learning, the current 'traditional' model. Here content is taught in its separate state and any integration that takes place is often haphazard and resides solely within the learner. No purposeful attempt on the part of the teacher is made to connect what is learned in one class to what is learned in another or to what is needed outside the classroom. If students raise issues or concerns about the relationship of what they are learning in their history class to what they saw on television or what they read in their literature class, the teacher may address the issue or concern, but the teacher is not perceived to be responsible for seeking out opportunities to develop relationships for the students.

The next stage on the continuum still views the disciplines as the major focus of the curriculum; however, deliberate efforts are made on the part of the teachers to connect the learning to real life situations and/or other curricular areas. Common skill areas between the subjects may be identified and reinforced by having the teachers in the various content areas teach the same skills at the same time within their specific curriculum. Natural connections between content areas are sought and teachers rely on one another to make the natural connections obvious to their students. At this stage, the subject matter remains intact and at the centre of the classroom learning. Time periods for content instruction are still adhered to. Curriculum frameworks describing specific skills and information to be learned at designated grade levels and within content areas are followed. What might change is the sequence of content in order to make connections, or some time set aside for

	<i>Separate disciplines</i>	<i>Disciplined-based</i>	<i>Interdisciplinary</i>	<i>Total integration</i>
<i>Content</i>	Separate subjects	Sequenced Correlated ideas Focused content themes Multiple lenses Modified courses	Multifaceted lens Broad themes Process themes Student interests New courses	Student needs/interests Cross disciplines Integrated day Apprenticeships Experiences
<i>Time</i>	Distinct units/periods	Distinct units/periods	Blocked	Varied
<i>Teachers</i>	Separate	Separate	Paired/teamed	Teamed/facilitators
<i>Students</i>	Receivers	Receivers/doers	Doers/decision-makers Creators	Decision-makers Creators Independent investigators

Figure 1 Integrated curriculum continuum



'practical applications' of content through activities, use of guest speakers, etc. Importantly, at this stage of the continuum, the teacher assumes responsibility for developing meaningful experiences and connections for the students. There is a deliberate effort to find relationships between the various content areas and between the content areas and real life situations which enhance the learning of the students.

The next stage of the continuum requires a breaking down of the rigid content area boundaries. The focus at this stage is not the disciplines *per se*, but rather the set of skills, concepts, themes, ideas and applications of content that is deemed important to be learned. From these identified areas the curriculum is structured, so 'traditional' content may be altered or even abandoned in favour of more appropriate curriculum content. Efforts are made to blend content both within and between disciplines to enhance the understanding of a particular theme, organizing concept or skill. For example, suppose an organizing theme for a tenth grade unit becomes 'celebrating cultural diversity'. The teachers decide that they want to specifically address the time period from 1700–1900. The science, mathematics and social studies teachers might develop lessons related to the contributions of various cultures to the science knowledge base and the concomitant persecution of scientists as their ideas challenged the religious beliefs and political structures of the times. The language arts teachers might co-ordinate their efforts with the art and music teachers to examine how literature, art and music from the various cultures reflected the thoughts of peoples of the time and became a means of documenting the social/political atmosphere of communities. Even the physical education teachers could examine the important role of 'sports' in the development of mind, body and spirit. Thus the traditional content of biology, algebra or geometry, world history and literature, art or music appreciation and physical education becomes less obvious and is replaced by a much broader, richer and connected set of lessons which try to emphasize how all these areas were affected by and contributed to the diversity of people who lived within the existing world of the time.

The integrated lessons designed by the teachers *could* occur within existing time slots of the curriculum. However, in order for students to see how the teachers make connections between content areas, provision must be made for teachers to share common teaching time. Double periods, a half day once a week or other block-time structures can be created to provide the teachers with common teaching time. When students see how their teachers transverse the 'artificial', but to the students 'real', lines of content, they might find it easier to model their behaviour on that of their teachers.

At the furthest end of the continuum is that of an integrated curriculum. At this stage, all specificity to disciplines disappears. Topics of study are chosen by the students in conjunction with the teachers because the topics are deemed important in the development of the intellectual, psychological,

emotional and/or social abilities of the students. Once a topic or theme is identified, teachers and students establish the activities, strategies and knowledge needed to help students examine the topic or theme. Teachers provide opportunities for students to explore on their own. Little attention is given to specific curriculum frameworks or established content objectives. Rather, the assumption is made that students will learn what is essential as they pursue the topic or theme under study. The important decision in this approach to curriculum organization is the establishment of the themes and topics around which the curriculum is organized. If the themes and topics are appropriately established by the teachers and their students, then opportunities will exist to explore appropriate disciplines. No content will be neglected; it will be used as needed within the curriculum. Time might be set aside during the unit to study specific content needed to continue the investigation started by the students. In this approach, all content areas play an important role in the curriculum. Students and teachers have the opportunity to explore subject matter as well as choose appropriate strategies to use for the exploration and the sharing of the information with their colleagues. At this stage, much more responsibility is placed on the students to find and synthesize relationships between content areas, and teachers assume the role of facilitators in the learning process.

The continuum for curricular organization, then, moves the selection of what and how something is taught from predetermined objectives and content-specific textbooks, to teacher-generated connections between the different disciplines, to processing and theme-based ideas for curriculum organization, to teachers and students co-operatively determining what they should learn and how they should learn it to best meet the needs and interests of students. The control of the curriculum moves from textbook publishers and subject matter 'experts' to teacher-facilitated student choice.

As the curriculum continuum is examined, it must be noted that there is no one best organizational structure for curriculum integration. The success of any curriculum lies within the teachers' acceptance of that particular curriculum. Some teachers are not going to be comfortable working in a truly integrated curriculum, with no apparent structure, no predetermined goals to achieve and no specific content to be mastered. Other teachers may find this approach challenging and exciting, providing them with the opportunity and freedom to create and explore a variety of learning adventures with their students. Some teachers might want to venture into curriculum reorganization cautiously, perhaps trying to co-ordinate a lesson with another teacher to see how making connections might work best for them. Some teachers may never want to move away from the 'safety' of their disciplinary approach to learning and would, perhaps, not be effective in delivering any other type of curriculum.

The continuum should not be viewed as a means of forcing teachers to

reorganize their curriculum but, more importantly, as a vehicle to help them rethink what they are currently doing and provide some guidance in determining how they might do things differently. Hopefully, teachers and administrators can find a stage on the continuum with which they can become comfortable as a team and produce a curriculum which becomes more meaningful to and connected with the real life experiences of their students.

The integrated curriculum movement in the United States is currently more rhetoric than activity. There are examples of teachers working together on units of instruction and some schools making efforts at 'integrating' the curriculum; however, the impact of these ideas on what is actually happening in schools is limited. Reasons for the reluctance of teachers and schools to become more aggressive in changing the way the curriculum is constructed and delivered to the students have a great deal to do with the assessment activities within the states. As long as students are expected to demonstrate specific levels of achievement on standardized tests which measure factual information, teachers – who are held responsible for student performance – are wary of engaging in curriculum restructuring. What if, in attempts at helping students make meaning out of the curriculum through a more integrated approach to learning, students 'fail to achieve' on the standardized tests? The 'test-driven' mentality of legislatures throughout the United States who pass laws requiring testing at specified grade levels and in specific subject areas hampers the development of more integrated curriculum efforts. If students 'fail to achieve', the teachers are held accountable. In some states, students' failure to achieve on statewide assessment tests can mean the dismissal of teachers. Working in such an environment, teachers are hesitant to try ideas which may or may not improve students' achievement on required assessment tests, even if ultimately the students' ability to apply their knowledge to real world activities improves.

Another reason teachers are reluctant to engage in curriculum restructuring is that of time. In order for teachers to plan properly and develop integrated curriculum at whatever level they feel comfortable with, they must have adequate planning time. They need time to develop themes and ideas, they need time to gather necessary information to plan, they need time to work collaboratively. Most teachers do not have the time and most administrators will not provide the time for the teachers to work together. Unless an entire school staff is committed to changing the curriculum, and deliberately works to ensure that the change will occur, there is little hope that curriculum integration will become the 'norm' in the public schools. Individual teachers are very limited in what they can accomplish. They can help students to see relationships, they can find ways to apply information to real world activities, but the overall impact they may have on helping students see the connections between what they learn in school and what they need to survive in society is slight.

Parents also influence what may or may not happen in the public schools. Parents are very resistant to change. They want their children to achieve – and most parents' notions of achievement are to duplicate what they did when they were at school. Unfortunately, times have changed, students have changed, the quantity of knowledge has changed. What has adequately served us in the past in our schools is simply not working today for the majority of our students. Yet talk of changing the curriculum better to meet the needs of today's society is met with scepticism from the parents, or at least from those parents who care enough to be actively engaged in school issues.

A final reason which prevents major curriculum reform from being inclusive of curriculum integration is the knowledge base of the teachers. In the United States secondary teachers are educated in very narrow disciplines, while elementary teachers have little specific discipline training. Thus teachers who are expected to work together to provide an integrated approach to learning may find their own lack of information the greatest impediment of all. If, as a mathematics teacher, I have no knowledge of how mathematics is used in other areas, or as a history major I have never explored literature, or art, or music, I may find it difficult to share my 'ignorance' with my fellow teachers. Likewise, as an elementary teacher, if I have but a superficial knowledge of subject matter content, I may find it difficult to build sensible theme-based curriculum units. If teachers are going to be expected to 'blend' content areas, then they need to be more broadly and deeply educated. They also need to be taught by professors who can demonstrate the interconnectedness of content and the students should be expected to demonstrate their abilities to see relationships between ideas and events. The entire teacher education process needs to be restructured if we are to have teachers who can operate within a different model of the school curriculum.

The theory of curriculum integration has great potential for making a difference in schools. Historically we have evidence that curriculum integration works (Kilpatrick, 1918; Collings, 1923; Oberholtzer, 1937; Cremin, 1961; Squires, 1972). However, the environment in which publicly funded schools are operating today is very different from the environment that existed when the early studies on curriculum integration were completed. The reality of making curriculum integration happen in schools today is another story. The resistance is strong: it comes from parents, teachers, students, administrators and legislators. The current advocates of curriculum integration have written much about how to do it and they have developed various models with which to begin, but they do not have enough hard data collected on the implementation and success of integrated curriculum projects to offset the concerns. The research base which might influence decision-makers simply does not exist.

Is curriculum integration just another fad? Is it no more than rhetoric? Is it another grasp at finding something that will revitalize education and make

it 'work'? Perhaps. Jerome Bruner (1997) has indicated that the purpose of education is the making of meaning, and that can only occur if the culture of education is so designed to make that happen. Culture is an attitude, not a curriculum design. Maybe we need to worry more about attitude. With the right attitude, the curriculum design may be irrelevant.

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