Relevant, Challenging, Integrative and Exploratory Curriculum Design: Perspectives From Theory and Practice for Middle Level Schooling in Australia

Tony Dowden
University of Tasmania

Abstract

Integrative curriculum design promises much for middle level teachers who wish to develop classroom programmes that will encourage early adolescents to actively engage in their learning (Beane 1990, 1997). Beane's model is highly responsive to the educational and developmental needs of young people. In contrast, multidisciplinary curriculum design (Jacobs 1989) may result in significant but largely unrecognised drawbacks when it is implemented in the middle grades.

This paper critically examines the theory of the integrative and the multidisciplinary models of curriculum integration with respect to middle level curriculum reform in Australian schools. It draws its data from a doctoral study (Dowden 2007) that traced a century of development of curriculum integration in the USA: from Dewey's Laboratory School a century ago through to contemporary middle schooling.

Introduction

Improved understandings about the developmental and educational needs of early adolescents (10-14 years old) in the last twenty years indicate that curriculum designs for the middle grades need to lead to classroom programmes that are relevant and meaningful to all young people (Arnold 1997, Beane 1990, 2006). This confirms long-held understandings about the nature and intention of the school curriculum. For instance, leading educational theorist Ralph Tyler's (1949) famous 'rationale' for the curriculum stated that all subject matter that enters the curriculum should be

worthwhile and meaningful to students. Earlier, philosopher and educationalist John Dewey (1902) insisted that the subject matter of the curriculum should be situated in familiar contexts that are meaningful to students. According to researchers who have remained faithful to the American progressive tradition pioneered by Dewey, such as Beane (1997, 2006) and Vars (1997), the primary purpose of curriculum integration in middle schooling is to resituate subject matter into relevant and meaningful contexts. Consistent with this view, Gehrke (1998, p. 248) broadly defined curriculum integration as:

> A collective term for those forms of curriculum in which student learning activities are built, less with concern for delineating disciplinary boundaries around kinds of learning, and more with the notion of helping students recognize or create their own learning.

As a result, leading middle schooling advocates, such as the National Middle School Association (1995, 2003) in the USA, have called for student-centred curriculum designs that are 'relevant, challenging, integrative and exploratory' for early adolescent learners.

While encouraging progress has been made towards developing effective pedagogies in the middle years in Australia (see, for example, Brown 2005, Hattam, Zipin and Prosser 2006, Luke, Elkins and others 2003, Matters 2006, State of Queensland 2001, Zyngier 2004, 2006), the discourse at the theoretical level concerning appropriate curriculum designs for early adolescents is not well developed. Nonetheless, educational leaders in Australia do seem to be aware that poorly conceived curriculum designs are a problem. For instance, Tytler (2007) recently called for a radical 're-imagining' of the Australian science curriculum coupled with 'varied and open pedagogies known to elicit middle years students' engagement with learning' (p. 67). Carrington (2006) argued that middle level curricula in Australia have been developed in a top-down manner without sufficient emphases on issues such as cultural diversity, boys' education and emerging technologies. Some states have undertaken curriculum reform at the middle level with an eye to the likely shape of future economies – such as Queensland's *New Basics* (Education Queensland 2001) and Tasmania's *Essential Learnings* (Department of Education 2003) – but these reforms have not resulted in new curricula specifically designed for early adolescents. In the 1990's, Pigdon and Woolley (1992) and Murdoch and Hornsby (1997) developed a model of integrated curriculum for primary schooling in Victoria. Indeed, their influential work included excellent advice on planning units of work and developing rich pedagogies, however their curriculum model was essentially subject-centred and not specifically oriented to the middle grades.

In their review of integrated curriculum designs in Australian middle schools, Wallace, Venville and Rennie (2005) asserted that 'theoretically, curriculum integration holds considerable potential for middle schooling' (p. 161), yet they did not distinguish between the fundamentally different student-centred and subject-centred approaches to curriculum integration. Based on observations in Australian middle schools over several years, Wallace, Venville and Rennie (2005) described six different 'forms' of curriculum integration – 'synchronised, cross-curricular, thematic, project-based, school-specialised and community-focused' (pp. 149, 151-156) – but they did not explain how these forms might sit within the existing theoretical framework for curriculum integration (Hopkins 1937, Dressel 1958, Vars 1993, Beane 1997, Gehrke 1998). Hunter and Park (2005) reviewed the notion of 'middle schooling' with respect to curriculum design in Australia. They stated:

> [The] literature focuses on alienating schooling cultures and curriculum, with a plethora of words such as 'democratic', 'student-centred', 'authentic' and 'negotiated' describing the suggested shift required in schooling (2005, p. 167).

Contrary to the suggestion put forward by Wallace, Venville and Rennie (2005), the finding of Hunter and Park (2005) implies that a student-centred approach to curriculum integration is more likely to offer 'considerable potential' for middle schooling than a subject-centred approach. An important task, therefore, is to describe and clarify the theoretical terrain of curriculum integration, thus enabling advocates of middle schooling in Australia to determine what should count as an authentic design for student-centred curriculum integration.

This paper investigates the theory of curriculum integration with respect to middle level curriculum reform in Australia. It adopts *curriculum integration* as a generic term for all forms of curricula that others have labelled or referred to as integrated. It uses *integrative curriculum* to specifically refer to the student-centred model of curriculum integration and *multidisciplinary curriculum* to specifically refer to the subject-centred model of curriculum integration. While most early adolescents in Australian schools experience teacher-centred single subject curricula, American research indicates that the integrative model (Beane 1990, 1993, 1997, 2004, Bergstrom 1998) is a more appropriate and inclusive form of curriculum design for the middle grades. This paper gives a brief account of the empirical evidence supporting the implementation of curriculum integration in the middle grades. It clarifies the meaning of curriculum integration and explains that both contemporary and historical examples can be categorised into either student-centred or subject-centred traditions of curriculum integration. The main purpose of the paper is to examine the efficacy of the integrative and the multidisciplinary models in order to make recommendations for middle level curriculum design in Australia. In order to

accomplish this task, the paper draws extensively on data from a doctoral research study that used a mixed historical and theoretical methodology to critique the concept of curriculum integration with respect to the needs of early adolescents (Dowden 2007).

Evidence in favour of curriculum integration at the middle level

An abundance of research evidence supports the efficacy of student-centred curriculum integration designs and their widespread use, particularly in middle schools, and for the middle grades more generally. In his review of more than 100 studies of curriculum integration over a seventy-year period, Vars (1997, p. 181) concluded that students in integrated programmes do 'as well as, and often better than' students in conventional single-subject programmes. Case studies of curriculum integration in American middle schools (Brazee and Capelluti 1995, Pate, Homestead and McGinnis 1997) have shown that student-centred designs for curriculum integration respond well to the educational and developmental needs of early adolescents. Moreover, a five year longitudinal study in New Zealand demonstrated that student-centred integrated programmes generated achievement effects in the order of one standard deviation above the norm in national School Certificate results for English, Mathematics and Science (Nolan and McKinnon 2003). Other confirmatory research in the USA (Felner, Jackson, Kasak, Mulhall, Brand and Flowers 1997, Anfara and Lipka 2003, Mertens and Flowers 2003) has shown that schools implementing the middle schooling philosophy of the National Middle School Association as articulated in their *This we believe* position statements (1995, 2003) and more especially student-centred integrated curricula, with a high degree of fidelity over an extended period, have accomplished the following three outcomes:

1) They achieved statistically significant student outcomes on both academic and affective measures over schools less committed to this approach in the areas of language arts, mathematics, social studies, and science;

2) Students in integrated programmes consistently out-performed students in traditional classes on national standardised tests, on state-wide tests, and on programme based assessment; and they

3) Showed statistically larger student growth on the same measures across the middle years of their schooling, than students in other schools.

The programmes that achieved these results were indisputably student-centred with respect to their curriculum designs (Beane 2006). Despite the weight of empirical evidence in favour of student-centred curriculum integration, the literature suggests

that such designs are not well known or understood by classroom practitioners in either the USA or elsewhere. In New Zealand, for instance, researchers, policy-makers and teachers alike tend to conflate the concept of curriculum integration with the subject-centred multidisciplinary approach (Fraser 2000, Dowden 2007). This misunderstanding seems to be related to the relative opacity and consequential inaccessibility of the literature.

Problems with the terminology of curriculum integration

The recent literature of curriculum integration is notoriously lacking in clarity. In his *Middle School Journal* editorial, Erb (1996) complained that middle school teachers who wish to implement curriculum integration in their classrooms are confronted with persistent confusion and ambiguity in the literature with respect to the meanings and the purposes of integration. Indeed, the literature is replete with a bewildering range of terms for curriculum integration including *integrated curriculum*, *interdisciplinary curriculum*, *multidisciplinary curriculum*, *fused curricula*, *transdisciplinary curriculum*, *cross-disciplinary curriculum* and *integrative curriculum*. Beane (1997, p. 10) asserted that the 'greatest confusion' in the literature occurs when subject-centred approaches are labelled 'interdisciplinary curriculum' or 'curriculum integration' when they should 'more accurately be called multidisciplinary' approaches. In addition, the confusion and ambiguity has been compounded by the popular but mistaken notion (Beane 1997) that curriculum integration can be classified as a 'continuum' of models (see, for example, Drake 1993, Fogarty 1991, Lake 1994, Jacobs 1989). Wraga (1997, p.117) specifically criticised Jacobs, Fogarty and Drake for adopting 'ahistoric' approaches but did not question the logic of their classification. From a theoretical standpoint, a better argument for the existence of continua is that they do not represent a range of discrete models but, rather, that each represents a range of examples of implementation of the multidisciplinary model (Dowden 2007).

The two predominant models in the contemporary practice of curriculum integration are James Beane's (1990/1993) student-centred integrative model and Heidi Hayes Jacobs' (1989) subject-centred multidisciplinary model. Gehrke (1998) convincingly argued that all examples or forms of curriculum integration are represented by one or the other of these two theoretical models. Beane (1997, p. 19) defined the integrative model as:

> A curriculum design theory that is concerned with enhancing the possibilities for personal and social integration through the organization of curriculum around significant problems and issues, collaboratively identified by educators and young people, without regard for subject-area lines.

The literature rarely supplies a good definition for the extant multidisciplinary model but both Beane (1997) and Jacobs (1989) approved of Meeth's (1978) definition for multidisciplinary curriculum of 'the juxtaposition of several disciplines focused on one problem with no direct attempt to integrate'. Meeth's reference to integration needs a brief explanation. As discussed later, in the multidisciplinary model the concept of integration is understood solely in terms of the correlation of different subject areas and therefore describes the process of subject-matter selection carried out by teachers or curriculum writers (Jacobs 1989, Vars 1993). Note also that Jacobs variously referred to the multidisciplinary model as an 'interdisciplinary' curriculum (1989), 'curriculum integration' (1991) and 'integrating curriculum' (1997). Jacobs' indecision with respect to terminology may have been the product of an ahistorical approach, as her model is strikingly similar to the model developed by Caswell in the 1930s (Kliebard 1995) and the analogous multidisciplinary model implemented in many American middle schools in the 1970s and 1980s (Lounsbury and Vars 1978, Vars 1998).

As stated earlier, this paper uses the terms of *curriculum integration* as a generic term for all forms of 'integrated' curricula, *integrative curriculum* to refer to the student-centred model and *multidisciplinary curriculum* to refer to the subject-centred model (Dowden, 2007). The remainder of this paper explains and teases out the substantive differences between the integrative and multidisciplinary models with respect to middle level curriculum designs. The next section argues that historical understandings of curriculum integration are crucial to a complete understanding of each model.

The origins of the integrative and multidisciplinary models

Despite the rich historical legacy of curriculum integration in the USA (Beane 1980, 1997, Vars 1991), most researchers, policy makers and practitioners in the USA, and elsewhere, have adopted ahistorical approaches to the design of curriculum integration (Beane 1997, Wraga 1997, Gehrke 1998, Dowden 2007). A handful of contemporary curriculum theorists from the USA (most notably, Beane 1997, Gehrke 1998, Vars 1998) have acknowledged that curriculum integration is best represented by a dichotomy of student-centred and subject-centred models derived from two broad traditions in the USA originating from the late nineteenth century.

The theoretical basis of the integrative model can be traced to Dewey's experimental work at the close of the nineteenth century and subsequent writing through to the 1930s. During his tenure at the Chicago Experimental School from 1896-1904, Dewey developed a radical student-centred design for curriculum integration. Although he rarely used the word *integration*, it is an appropriate metaphor for the philosophy that underpinned his curriculum design. Dewey's understanding of integration is best

captured by the use of his trademark term 'organic education' in which he imbued a sense of biological symbiosis between the student and their social environment. Dewey (1936, p. 465) believed that the recurring problem of education was the 'harmonizing of individual traits' of students with the aims and values of their communities, thus he identified the student and the community they lived in, rather than subject areas, as the locus of educational interest. Bernstein (1971) explained that student-centred approaches result in genuinely integrative curriculum designs in which the established subject areas become subordinate to the organising theme and subject matter is only imported into the curriculum if it is directly relevant to the theme. Throughout the past century, the American progressives systematically built on the work of Dewey and further theorised student-centred curriculum integration (Hopkins 1937, Dressel 1958, Lounsbury and Vars 1978, Beane 1990, 1993, 1997). The student-centred approach came of age in the shape of the 'core' curriculum in the 1930s and 1940s (Kliebard, 1995). The core approach, which was based on the idea of a general curriculum for all, was popularised by the grand-scale Eight-Year Study (1933-1941) where, in the most innovative Study schools, it was collaboratively planned and implemented by students and teachers (Aikin 1942). In the years following the heyday of the core approach, a small but dedicated band of progressive educators continued to develop student-centred designs, despite marginalisation by mainstream educators in the USA during the Cold War. Towards the close of the twentieth century, Beane's integrative model (1990, 1993) combined almost forgotten progressive ideas with the imperative to meet the educational and developmental needs of early adolescents to create a fresh student-centred curriculum design.

The theoretical basis of the multidisciplinary model can be traced to the late nineteenth century Herbartian notion of *correlation*. The 'Herbartians' were a group of late nineteenth century American educational reformers who were interested in the ideas of German philosopher Johan Friedrich Herbart. In particular, the Herbartians questioned the logic of the traditional single subject curriculum and started to consider how disparate subjects might be 'correlated' with each other in ways that might benefit students (Kliebard 1995). Although the Herbartians failed to fully theorise their notion of correlation, a long line of educators concerned with social efficiency – including Bobbitt in the 1910s, Caswell in the 1930s and Jacobs in the 1990s – coopted the term of 'correlation' to describe the efficient distribution of subject matter within their multidisciplinary curriculum designs (Dowden 2007). Caswell's design for the large-scale Virginia Curriculum Project, where thousands of teams of teachers across the state prepared multidisciplinary units for their schools (Kliebard 1995), was the forerunner of Jacobs' (1989) multidisciplinary model that has predominated in contemporary American middle schools. During the twentieth century, the 'correlation of subject areas' was interpreted as a method for identifying overlaps between subjects which are then eliminated when teachers identify

connections between subjects. Fused curricula result when overlaps between two or more subject areas are frequent, and subjects are absorbed into one subject area. For instance here in Australia, the subject of SOSE (Study of Society and Environment) is the result of a fusion of geography, history and economics, along with elements of civics and values education. Multidisciplinary curricula result when subject areas are organised according to a theme identified in two or more subjects. However, as Bernstein (1971) pointed out, in subject-centred designs like the multidisciplinary model, the organising theme is always subordinate to the established subject areas. Dewey explained that the process of correlation is artificial and quickly becomes purposeless when teachers 'resort to all sorts of devices to weave a little arithmetic into the history lesson, and the like' (1900, p. 91). More recently, several examples of organising themes in multidisciplinary designs in the USA have been labelled as trivial and contrived (Ellis and Stuen 1998). As Beane (1997) pointed out, trivial organising themes in middle school curricula are a poor substitute for the considerably more substantive themes that early adolescents are generally capable of addressing.

In conclusion, contemporary exponents of the multidisciplinary model apparently do not know about, or have ignored, the long histories of subject-centred and student-centred curriculum integration. Their view seems to be that the single subject curriculum and subject-centred variants, such as multidisciplinary curricula, are a 'modern day' response to contemporary circumstances and lack historical precedents.

The design of the integrative model

Beane (1990) established the design for his integrative model on understandings derived from Dewey's work. He created a simple but elegant method of generating subject matter for middle level curricula. At the heart of Beane's method lay two questions for students: 'What questions do you have about yourself? What questions do you have about your world?' (Beane 1997, p. 86). Students, in collaboration with each other and their teachers, investigate these questions or concerns within the bounds of an overarching theme or 'organising centre', which they identify or generate. Beane argued that in this way the process of implementing an integrative curriculum design creates and enhances, 'possibilities for personal and social integration' (1997, p. 19).

When the integrative model is implemented in the classroom, the process of integration is understood as a task the individual learner must accomplish (Beane 1997). In other words, when students learn, they do their *own* integrating. The notion of integration at the personal level as a continuous 'reconstructing of experience' lay at the heart of Dewey's curriculum design (1916, p. 89). Dewey vividly described this process of what Hopkins (1941, 1954), Dressel (1958) and Beane (1990) later referred to as personal integration. Dewey (1931, p. 424) stated:

> The mentally active . . . (learner's) mind roams far and wide. All (subject matter) is grist that comes to (his or her) mill . . . yet the mind does not merely roam abroad. It returns with what is found, and there is constant judgment to detect relations, relevancies (and) bearings on the central theme. The outcome is a continuously growing intellectual integration . . . within the limits set by capacity and experience . . . (this) is the process of learning.

To authenticate the process of personal integration, Dewey insisted that students should actively experience subject matter and engage in inquiry. Thus he emphasised the importance of 'learning by doing' (1900, p. 120). Dewey also promoted the notion of integration at a social level by developing the idea of the classroom as a 'miniature community (or) an embryonic society' (1900, p. 15). He found that student participation in a miniature society helped them to develop the skills and attributes needed in wider society such as working collaboratively, solving real-life problems and building self-discipline.

Beane's integrative model allows teachers and students to collaboratively plan the curriculum according to both individual and wider social concerns. Dewey (1936) and other American progressives such as Hopkins (1941, 1954), Dressel (1958), along with neo progressives such as Lounsbury and Vars (1978) and Beane (1997), all emphasised that the subject matter of the curriculum should be both personally meaningful to the learner *and* be of substantive value to society. Dewey repositioned the traditional notion of subject matter by defining it as the specific knowledge uniquely important to each individual within the context of their developing role in society. He explained that subject matter should be 'related to the vital experience of the young' (1936, p. 470) and 'of the meanings which supply content to existing social life' (1916, p. 226). Dewey summarised his position by stating that the curriculum should develop in a close relationship with the 'one great common world' (1900, p. 91). He explained that when children live 'in a varied but concrete and active relationship to this common world', their studies naturally integrate (p. 91).

Following Dewey, Beane (1997, 2002) explained that his integrative model is designed to combine issues of self interest with those of the common good. For example, Brown Barge Middle School (BBMS) in Florida implemented an integrative unit with a multicultural emphasis called 'American Tapestries' (Barr 1995). A former BBMS student explained:

> I went through the American Tapestries stream, which was about prejudice . . . you learn a lot about yourself and how you feel. And you learn other ways to feel. We talked about different things but mainly culture. We got into arguments until we actually understood the other side (Powell and Skoog 1995, p. 99).

Accordingly, this integrative unit integrated personal issues (getting on with peers) with the common good (promotion of racial harmony). Beane (1997, p. 48) also explained that teachers and students often collaboratively generate similar 'micro' and 'macro' applications from the same subject matter. For example, a class might plan a theme called 'Health and Disease' connecting personal concerns about longevity with social issues such as finding cures for diseases.

Beane's integrative model is based on a democratic philosophy in which power is shared between the teacher and students. This democratic orientation is apparent in the 'bottom-up' nature of the integrative model that is based on a process of collaborative teacher-student planning and a process of implementation that allows student voices to be heard and heeded. Dewey (1916) explained that when young people help generate the subject matter of thematic units, they develop the capacity to actively participate in democratic citizenship. He urged educators 'to deepen and broaden the range of social contact and intercourse of cooperative living' so that students learn by experience and make their 'future social relations worthy and fruitful' (1936, pp. 466-467). Dewey argued that young people should be prepared for adult responsibilities, not merely to adapt to 'changes in society' but to 'have the power to shape and direct those changes' as fully participating citizens in a democracy (1897, p. 12 cited Tanner, 1997, p. 10). In Australia, the democratic approach has been incorporated into the concept of the 'negotiated curriculum' (Boomer 1982). The negotiated curriculum incorporates collaborative teacher-student planning and has gained currency at the middle level where it has been referred to as the 'Beane/Brodhagen model of negotiated curriculum' (Hunter and Park 2005, p. 171). Such teacher-student negotiation is an important first step towards implementing an integrative unit.

Middle school teachers have increasingly recognised that early adolescents have a developmental need to achieve a degree of agency in curriculum implementation and thus engage meaningfully in real-life activities. A recent trend in the USA has been to reintroduce the progressive notion of 'service learning' so that students learn to actively participate in their communities and gain hands-on experience in citizenship (for example, Brazee 1997, Kielsmeier 2000, Schine 1997). However, the key to developing a democratic learning community *inside* the classroom is to give young people genuine 'opportunities to assume initiative and responsibility with regard to curriculum and school life' (Arnold 1997, p. 31). The democratic component in Beane's integrative model is designed to ensure that, while early adolescents are not all the same (Sizer 2001), they will experience a general education with similar shared experiences and understandings. Integrative designs allow middle school classrooms to become democratic learning communities where young people gain valuable social experience and acquire the skills needed for citizenship. Beane's particular

contribution to the theory of integration was to involve the early adolescent student in the process of curriculum making. He explained that that the 'authentic integration of educational experiences . . . emerges from what young people *themselves* see as significant issues or problems to explore' (1993, p. 3, emphasis added).

The collaborative planning process within the implementation of integrative designs responds to the developmental needs of early adolescents. It gives them increased autonomy, responsibility and control over the subject matter of the curriculum (Beane 1993). For example, collaborative planning obliges young people to effectively communicate their thoughts and engage in productive discussions. Early adolescents are sensitive about how they are perceived or treated but appreciate recognition of increased social maturity (Stevenson 2002). Consequently, collaborative planning gives rise to collegial and supportive settings that allow early adolescents to develop robust relationships with teachers and peers (Pitton 2001).

The inclusive nature of the integrative model has the pedagogical implication that classroom work tends to be creative and unpredictable. Indeed, groups of students will often initiate spontaneous problem-solving episodes, projects or performances. As a result, teachers must be able to flexibly respond to the individual needs of their students. As Dewey (1900) explained, and as more recent research has confirmed (Arnold 1997, National Middle School Association 2003, Stevenson 2002), early adolescents learn by actively and creatively 'doing' projects, problems and performances related to the subject matter at hand. However, implementing integrative curricula is not a 'soft option' and is likely to present teachers with unexpected challenges. For instance, teachers may find their prior understandings and beliefs about classroom management do not align with the realities of integrative units. Others may need to significantly adjust their pedagogy to incorporate issues and ideas like social justice or emancipation. The integrative model is site-specific because each implementation of the model is developed within a unique context. Furthermore, each integrative unit is developed holistically so that the subject matter of the classroom curriculum potentially derives its meaning and relevance from all aspects of the local context. In conclusion, when the integrative model is implemented with fidelity in middle level schools it promotes the collaborative creation of rich learning environments that are rarely neat or tidy, yet result in highly productive learning outcomes for early adolescents.

The design of the multidisciplinary model

Jacobs' (1989) design of the multidisciplinary model focuses on long-range planning by teachers, which effectively excludes the possibility of input from students. As explained earlier, the multidisciplinary model utilises the Herbartian notion of

correlation to efficiently arrange or 'integrate' subject matter by removing perceived overlaps between discrete subject areas. Following Caswell's multidisciplinary design from the 1930s (Kliebard 1995), Jacobs (1989) also adopted the terms of 'scope' and' sequence' to describe how she preferred teachers to implement her multidisciplinary model. Jacobs (1989, p. 2) asserted that the 'content scope and sequence' of the subject matter in multidisciplinary units should be extrapolated over several semesters or years. Later, Jacobs (1997) extended her argument by stating that the planning stage of multidisciplinary units 'must include' an elaborate matrix in which subject areas are cross-referenced via a 'curriculum mapping' (English 1980, p. 558) exercise to ensure that the subject matter in each subject is efficiently and precisely 'covered'.

The 'top-down' design of the multidisciplinary model means that some developmental needs of early adolescents are not addressed because young people are prevented from accepting any level of responsibility for either the selection of subject matter or the implementation of the classroom curriculum. Accordingly, the multidisciplinary model is autocratic with respect to the power relationship between the teacher and students. Moreover, multidisciplinary curricula tend not to be site-specific, with the consequence that subject matter often lacks relevance to students. Dewey criticised this lack of relevance as a traditional weakness of subject-centred approaches in general. He stated that when irrelevant subject matter is presented to students 'in the form of a lesson to be learned as a lesson, the connecting links of need and aim are conspicuous (by) their absence' (1902, p. 25). In addition, the multidisciplinary model tightly controls the content of the curriculum because subject matter is selected by teacher teams via mapping processes that have clearly defined parameters according to subject and grade level. Thus Jacobs' model appears to justify pedagogies that are poorly conceived because they deliver parcels of knowledge pre-packaged by teachers or textbook writers. An important implication is that early adolescents may be isolated and expected to work on unit tasks that focus on content and skills. Furthermore, culminating performances at the end of units will tend to be staged and scripted by the teacher, meaning that ideal opportunities for young people to exercise responsibility, choreograph performances, and express their creativity and talent are wasted. Unfortunately, research indicates that early adolescents are unlikely to actively engage in multidisciplinary units unless organising themes are sufficiently stimulating and challenging and they are permitted to learn in social contexts (Arnold 1997, Beane 1997, Erlandson and McVittie 2001, Findley 2002, Smith, Blaise, Mann and Myers 1993). Findley (2002) argued that early adolescents are often 'unmotivated' by unit work unless they can make sense of their learning by drawing on personal experience. Findley observed that one boy 'often ignored curricular and teacher-made connections and learning goals, but found (his own) ways to make personal connections and sense of the material' (p.62). In other words, the boy needed to carry out the process of personal integration on his own, as it was not something his

teacher could perform on his behalf (Dewey 1931, Beane 1997, Davis 1997). With the exception of a few middle school advocates and those concerned with historicism, Jacobs' multidisciplinary model has escaped direct criticism. Vars (2000, pp. 79-80) argued that Jacobs' model paid, 'insufficient attention to the needs, problems, and concerns of students'. Brazee and Capelluti (1995, p. 27) stated that Jacobs' model is a 'shot-gun approach . . . (indicating) insufficient knowledge of both young adolescents and curriculum improvement'. However, as the next section argues, Jacobs' model also has serious ethical flaws.

This section has explained that Jacobs' model reduces the notion of 'integration' to a mechanical process conducted by teachers and administrators beyond the classroom, thus her model explicitly prevents students from participating in any aspect of curriculum integration. Jacobs added little to the theory of integration, other than extending the known concepts of 'scope' and 'sequence' within the context of planning multidisciplinary units. Nonetheless, her contribution gained attention from subject-centred advocates because it gave teachers and administrators increased control over the content of the classroom curriculum.

Ethical and political considerations

The most significant difference between the integrative and multidisciplinary models with respect to curriculum implementation in the middle grades is their diametrically opposite ethical orientations. The integrative model is based on well developed or 'thick' (Apple 2001) ethical principles that reflect its student-centred focus. Beane (1990, 1993) specifically designed his integrative model to respond to the diverse needs of early adolescents. His model respects the dignity of each individual by assuming that young people are not all the same and therefore have different educational needs. The inclusive design of the integrative model specifically ensures that units are attuned to maturational, socioeconomic, cultural, ethnic and local differences among early adolescents. The integrative model also promotes the integration and understanding of knowledge at a personal and social level because students and teachers collaboratively implement the curriculum. In conclusion, Beane's integrative model meets a high ethical standard because it is specifically designed to meet the educational needs of each and every early adolescent.

In contrast, the multidisciplinary model is based on poorly developed or 'thin' (Apple 2001) ethical principles that reflect its subject-centred focus. The narrowly defined functions of the multidisciplinary model mean that it is indifferent or 'blind' to student differences. Jacobs' model therefore fails to account for individual differences among early adolescents such as developmental maturity or ability level. Similarly, her model makes no particular provision for gifted and talented students, students with special

needs, students from ethnic minorities or those from lower socio-economic status groups. Even though Jacobs' (1989) book was distributed to thousands of middle schools in the USA, her model fails to recognise that early adolescents have particular educational and developmental needs. In summary,
Jacobs' multidisciplinary model appears to be both unethical and, therefore, unsuitable as a middle level curriculum design because it fails to challenge various groups of students or cater for all levels of ability (Dowden 2007).

In the USA, the implementation of the integrative and multidisciplinary models has resulted in markedly different political responses (Beane 1997). Implementation of the integrative model has been met by political pressure from several quarters in the USA because it tends to disrupt the transmission of the knowledge and values of the dominant political group – or 'official knowledge' (Apple 1993) – to classrooms. Indeed, in several states in the USA, conservative groups have demanded a particular brand of 'good' schooling that explicitly excludes student-centred approaches (Cuban 2003). Moreover, the American literature of curriculum integration has shown a general bias against the integrated model (Dowden 2007). In addition, teachers of integrated curricula have been subjected to hostility from teachers with strong subject affiliations, parent groups and other stakeholders in subject-centred curricula such as textbook publishers or conservative church groups. Indeed, while the incidence of hostility and resistance from teacher colleagues may seem surprising, it has a logical explanation. Tyack and Tobin (1994) explained that the aims of student-centred approaches such as the integrative model run counter to the well-entrenched 'grammar of schooling', a bundle of traditional norms stipulating that the school curriculum should consist of differentiated subject areas each consisting of prescribed subject matter drawn from the disciplines. Teachers know the rules attached to the 'grammar of schooling' better than most. In their review of middle schooling, Beane and Brodhagen explained that new teachers of the integrative model are faced with major adjustments which involve 'complex issues of self-identity, collegial relationships and loyalty' (2001, p. 1166). Some teachers have expressed reluctant to commit to integrative curricula because they believe it will be 'hard work' compared with other approaches (Beane 1997). However, the real reasons for trepidation or reluctance are probably embedded in the deep structure of the education system. For most teachers integrative curriculum is a serious challenge that involves a paradigm shift – from a subject-centred perspective to a student-centred perspective – along with substantive changes to their professional identity (Bernstein 1971, Beane 1997).

Sustaining integrative curricula in politically conservative communities is not easy. For instance, Powell, Skoog, Troutman and Jones found that teachers at Brown Barge Middle School (BBMS) felt 'alienated, isolated, misunderstood and disconnected from their own school district' (1996, p. 25). Unequivocal support from leadership for the

integrative model is crucial. BBMS principal Camille Barr felt it was essential to shield her teachers from outside pressures. She stated:

> The staff doesn't realize how much feeding of the alligators I do all the time. I just have to keep people off us long enough for us to do our work (Powell, Skoog, Troutman and Jones 1996, p. 51).

Accordingly, it is vital for teachers who plan to implement integrated curricula in their classrooms to ensure they have the full support of both their school principal and the wider community (Beane 1999a, 1999b, Snapp 2006).

In contrast, the implementation of the multidisciplinary model in the USA has generally escaped political pressure, presumably because the model faithfully transmits official knowledge to the classroom. Despite Jacobs' lack of recourse to history, curriculum theory and the wider literature, along with her failure to consider the needs of early adolescent learners in her design; there has been remarkably little criticism regarding the efficacy of the multidisciplinary model (Dowden 2007). Thus, despite its readily apparent shortcomings as an appropriate curriculum design for the middle grades, the multidisciplinary model has been widely implemented in American middle schools.

Conclusion

The integrative model of curriculum integration is appropriate for the middle grades in Australian schools. Integrative curricula are highly responsive to the educational and developmental needs of early adolescents and are inclusive of all students. In contrast, the multidisciplinary model has a number of serious drawbacks with respect to implementation in the middle years. The most important of these drawbacks are that multidisciplinary designs are indifferent to the developmental needs of early adolescents and tend to marginalise the needs of certain sub-groups of young people.

Despite the eminent suitability of integrative curriculum designs in the middle grades, the American experience suggests that attempts to implement integrative curricula in Australia are likely to encounter political resistance. Powerful forces are allied with the traditional subject-centred single-subject curriculum, not the least being middle grade teachers' own conceptions and views of themselves as 'subject teachers'. As a result, stakeholders in the traditional curriculum may impede the development of student-centred approaches, thus stifling general acceptance of the integrative model as the preferred curriculum for the middle grades.

If Australian practitioners hope to improve the learning outcomes, attitudes and behaviours of early adolescents, then as Hardingham (2005, p. xviii) argued, each school needs to become a 'well-informed, highly committed, responsive middle school.' Although Hardingham's point was that improving middle schooling is more difficult than prescribing the solution, his statement contained two vital truisms pertaining to middle level curriculum reform. First, advocates of middle schooling in Australia need to be 'well informed' about the theory of curriculum integration. Second, they need to develop curriculum designs that are underpinned by research evidence and are 'highly committed and responsive' to the educational and developmental needs of early adolescents. Futhermore, the elements of middle level curricula, pedagogies and assessment all need to be 'strongly connected' (Hattam 2006) and, to utilise Biggs' (1999) concept from tertiary education, 'constructively aligned' so that they ensure high quality programs are developed.

Finally, Chadbourne and Pendergast (2005) have argued that advocates of middle schooling in Australia should develop a coherent theoretical foundation or 'philosophy' of middle schooling. In this event it will be critical for such advocates to ensure that the curriculum claims its rightful place in a future middle schooling philosophy. In the meantime, the immediate future of curriculum integration in the middle grades in Australia seems to rely on the willingness of researchers, policy-makers, teachers and school communities to recognise that integrative curricula are indeed relevant, challenging, integrative and exploratory and therefore ideally suited to the needs of early adolescents.

References

Aikin, W. (1942) *The story of the Eight Year Study*, Harper and Row, New York.

Anfara Jr, V. A. and Lipka, R. P. (2003) Relating the middle school concept to student achievement, *Middle School Journal*, vol. 35, no. 1, pp. 24-32.

Apple, M. W. (1993) *Official knowledge: democratic education in a conservative age*, Routledge, New York.

Apple, M. W. (2001) *Educating the 'right' way: markets, standards, God and inequality*, Routledge-Falmer, New York.

Arnold, J. (1997) High expectations for all, *Middle School Journal*, vol. 28, no. 3, pp. 51-53.

Barr, C. (1995) Pushing the envelope: what curriculum integration can be, in E. N. Brazee and J. Capelluti, eds., *Dissolving boundaries: toward integrative curriculum*, National Middle School Association, Columbus, Ohio.

Beane, J. A. (1980) The general education we need, *Educational Leadership*, vol. 37, January, pp. 307-308.

Beane, J. A. (1990) *A middle school curriculum: from rhetoric to reality*, National Middle School Association, Columbus, Ohio.

Beane, J. A. (1993) *A middle school curriculum: from rhetoric to reality*, 2nd edn., National Middle School Association, Columbus, Ohio.

Beane, J. A. (1997) *Curriculum integration: designing the core of democratic education*, Teachers College Press, New York.

Beane, J. A. (1999a) Middle schools under siege: points of attack, *Middle School Journal*, vol. 30, no. 4, pp. 3-9.

Beane, J. A. (1999b) Middle schools under siege: responding to the attack, *Middle School Journal*, vol. 30, no. 6, pp. 3-6.

Beane, J. A. (2001) Introduction: reform and reinvention, in T. S. Dickinson, *Reinventing the middle school*, Routledge-Falmer, New York.

Beane, J. A. (2002) Beyond self-interest: a democratic core curriculum, *Educational Leadership*, vol. 59, no. 7, pp. 25-28.

Beane, J. A. (2004) Creating quality in the middle school curriculum, in S. C. Thompson, ed., *Reforming middle level education: considerations for policymakers*, National Middle School Association, Westerville, Ohio.

Beane, J. A. (2006) Why middle schools? *New Zealand Middle Schooling Review*, Issue 2 (November), pp. 5-7.

Beane, J. A. and Brodhagen, B. L. (2001) Teaching in middle schools, in V. Richardson, ed., *Handbook of research on teaching*, 4th edn., American Educational Research Association, Washington DC.

Bergstrom, K. L. (1998) Are we missing the point about curriculum integration?, *Middle School Journal*, vol. 29, March, pp. 28-37.

Bernstein, B. (1971) On the classification and framing of educational knowledge, in M. F. D. Young, ed., *Knowledge and control*, pp. 47-69. McMillan, London.

Biggs, J. (1999) *Teaching for quality learning at university*, Society for Research into Higher Education and Open University Press, Buckingham, UK.

Boomer, G. (1982) *Negotiating the curriculum*, The Falmer Press, London.

Brazee, E. N. (1997) Curriculum for whom?, in J. L. Irvin, ed., *What current research says to the middle level practitioner*, National Middle School Association, Columbus, Ohio.

Brazee, E. N. and Capelluti, J. (1995) *Dissolving boundaries: toward integrative curriculum*, National Middle School Association, Columbus, Ohio.

Brown, R. (2005) Learning collaboratively, in D. Pendergast and N. Bahr, eds., *Teaching middle years: rethinking curriculum, pedagogy and assessment*, Allen and Unwin, Sydney.

Carrington, V. (2006) *Rethinking middle years: early adolescents, schooling and digital culture*, Allen and Unwin, Sydney.

Chadbourne, R. and Pendergast, D. (2005) The philosophy of middle schooling, in D. Pendergast and N. Bahr, eds., *Teaching middle years: rethinking curriculum, pedagogy and assessment*, Allen and Unwin, Sydney.

Cuban, L. (2003) *Why is it so hard to get good schools?* Teachers College, Columbia University, New York.

Davis Jnr., O. L. (1997) The personal nature of curricular integration, *Journal of Curriculum and Supervision*, vol.12, no. 2, pp. 95-97.

Department of Education, Tasmania. (2002) *Essential learnings framework 1*, Department of Education, Hobart.

Dewey, J. (1900) *The school and society*, University of Chicago Press, Chicago.

Dewey, J. (1902) *The child and the curriculum*, University of Chicago Press, Chicago.

Dewey, J. (1916) *Democracy and education*, MacMillan, New York.

Dewey, J. (1931) The way out of educational confusion, in R. G. Archambault, ed., (1964) *John Dewey on education: selected writings*, Random House, New York.

Dewey, J. (1936) The theory of the Chicago experiment, in K. C. Mayhew and A. C. Edwards, (1936/1965) *The Dewey School*, Atherton, New York.

Dowden, T. (2007) Curriculum integration for early adolescent schooling in Aotearoa New Zealand: worthy of serious trial, unpublished doctoral thesis, Massey University, New Zealand.

Drake, S. M. (1993) *Planning integrated curriculum: the call to adventure*, Association for Supervision and Curriculum Development, Alexandria, Virginia.

Dressel, P. L. (1958) The meaning and significance of integration, in N. B. Henry, ed., *The integration of educational experiences*, 57th Yearbook of the National Society for the Study of Education, Part III, pp. 3-25, University of Chicago Press, Chicago.

Education Queensland. (2001) "New basics project", retrieved July 8, 2007.

<http://education.qld.gov.au/corporate/newbasics/index.html>

Ellis, A. K. and Stuen, C. J. (1998) *The interdisciplinary curriculum*, Eye on Education, Larchmont, New York.

English, F. W. (1980) Curriculum mapping, *Educational Leadership*, vol. 37, no. 7, pp. 558-559.

Erb, T. O. (1996) Following the bandwagon of curriculum integration: beautiful music or deep ruts?, *Middle School Journal*, vol. 28, no. 1, p. 2.

Erlandson, C. & McVittie, J. (2001) Student voices on integrative curriculum, *Middle School Journal*, vol. 33, no. 2, pp. 28-36.

Felner, R. D., Jackson, A. W., Kasak, D., Mulhall, P., Brand, S. and Flowers, N. (1997) The impact of school reform for the middle years, *Phi Delta Kappan*, vol. 78, no. 7, pp. 528-532, 541-550.

Findley, N. (2002) In their own ways, *Educational Leadership*, vol. 60, no. 1, pp. 60-63.

Fogarty, R. (1991) *The mindful school: how to integrate the curricula*, Hawker Brownlow Education, Melbourne.

Fraser, D. (2000) Curriculum integration: what it is and what it is not, *SET*, vol. 3, pp. 34-37.

Gehrke, N. J. (1998) A look at curriculum integration from the bridge. *Curriculum Journal*, vol. 9, no. 2, pp. 247-260.

Hardingham, R. (2005) Foreword, in D. Pendergast and N. Bahr, eds., *Teaching middle years: rethinking curriculum, pedagogy and assessment*, Allen and Unwin, Sydney.

Hattam, R. (2006) *Easier said than done: 'strong connectedness' in the middle years*, paper presented at AARE Annual Conference, Adelaide.

Hattam, R., Zipin, L. and Prosser, B. (2006) "Redesigning pedagogies in the North", retrieved July 16.
<http://www.literacy.unisa.edu.au/rpin/documents/RPIN%20Update%201.pdf>

Hopkins, L. T., ed. (1937) *Integration: its meaning and application*, Appleton-Century, New York.

Hopkins, L. T. (1941) *Integration: the democratic process*, Heath, New York.

Hopkins, L. T. (1954) *The emerging self in school and home*, Harper & Brothers, New York.

Hunter, L. and Park, N. (2005) Negotiating curriculum, in D. Pendergast and N. Bahr, eds., *Teaching middle years: rethinking curriculum, pedagogy and assessment*, Allen and Unwin, Sydney.

Jacobs, H. H., ed. (1989) *Interdisciplinary curriculum: design and implementation*, Association for Supervision and Curriculum Development, Alexandria, Virginia.

Jacobs, H. H. (1991) Planning for curriculum integration, *Educational Leadership*, vol. 49, no. 2, pp. 27-28.

Jacobs, H. H. (1997) *Mapping the big picture: integrating curriculum and assessment*, Association of Supervision and Curriculum Development, Alexandria, Virginia.

Kielsmeier, J. C. (2000) A time to serve, a time to learn – learning and the promise of democracy, *Phi Delta Kappan*, vol. 81, no. 9, pp. 652-657.

Kliebard, H. M. (1995) *The struggle for the American curriculum 1893-1958*, 2nd edn., Routledge and Paul, New York.

Lake, K. (1994) "Integrated curriculum", retrieved February 5, 2006.
<http://www.nwrel.org/scpd/sirs/8/c016.html>

Lounsbury, J. H. and Vars, G. F. (1978) *A curriculum for the middle school years*, Harper, New York.

Luke, A., Elkins, J., Weir, K., Land, R., Carrington, V., Dole, S., Pendergast, D., Kapitzke, C., van Kraayenoord, C., Moni, K., McIntosh, A., Mayer, D., Bahr, M., Hunter, L., Chadbourne, R., Bean, T., Alverman, D. and Stevens, L. (2003) "Beyond the middle: a report about literacy and numeracy development of target group students in the middle years of schooling", (Department of Education, Science and Training), retrieved July 12, 2007.
<http://www.dest.gov.au/NR/rdonlyres/E06AD41C-5FC9-4F59-A45D-0DF1A7806D4C/1597/BeyondtheMiddleMainReport.pdf>

Matters, P. (2006) *Educational leadership, powerful pedagogies and the middle years of schooling (Yrs 5-9)*, paper presented at AARE Annual Conference, Adelaide.

Meeth, L. R. (1978) Interdisciplinary studies: integration of knowledge and experience, *Change*, vol. 10, pp. 6-9.

Mertens, S. B. and Flowers, N. (2003) Middle school practices improve student achievement in high poverty schools, *Middle School Journal*, vol. 35, no. 1, pp. 33-43.

Murdoch, K. and Hornsby, D. (1997) Planning curriculum connections: whole-school planning for integrated curriculum, Eleanor Curtain, Armadale, Victoria.

National Middle School Association. (1995) *This we believe: developmentally responsive middle level schools*, National Middle School Association, Columbus, Ohio.

National Middle School Association. (2003) *This we believe: successful schools for young adolescents*, Westerville, Ohio.

Nolan, P. and McKinnon, D. (2003) Enhancing the middle in a New Zealand secondary school: integration, experiential learning and computer use, *International Journal of Educational Reform*, vol. 12, no. 3, pp. 230-243.

Pate, P., Homestead, E. and McGinnis, K. (1997) Making integrated curriculum work: teachers, students, and the quest for coherent curriculum, Teachers College Press, New York.

Pigdon, K. and Woolley, M., eds. (1992) *The big picture: integrating children's learning*, Eleanor Curtain, Melbourne.

Pitton, D. E. (2001) The school and the child and the child in the school, *Middle School Journal*, vol. 33, no. 1, pp. 14-20.

Powell, R. R., Fussell, L., Troutman, P., Smith, M. and Skoog, G. (1998) The Brown Barge experience: toward an integrative multicultural learning environment, *Middle School Journal*, vol. 29, no. 4, pp. 3-13.

Powell, R. R. and Skoog, G. (1995) Students' perspectives of integrative curricula: the case of Brown Barge Middle School, *Research in Middle-level Education Quarterly*, vol. 19, no. 1, pp. 85-114.

Powell, R. R., Skoog, G., Troutman, P. and Jones, C. (1996) Sustaining a nonlinear integrative learning context: middle level teachers' perspectives, *Research in Middle-level Education Quarterly*, vol. 20, no. 2, pp. 23-63.

Schine, J. (1997) Service learning and young adolescents: a good fit, in J. L. Irvin, ed., *What current research says to the middle level practitioner*, National Middle School Association, Columbus, Ohio.

Sizer, T. R. (2001) No two are quite alike, *Educational Leadership*, vol. 57, no. 1, pp. 6-11.

Smith, C., Blaise, B., Mann, L. and Myers, D. (1993) The Big Alpha Circus, in C. Stevenson and J. F. Carr, eds., *Integrated studies in the middle grades: dancing through walls*, pp. 147-154, Teachers College Press, New York.

Snapp, J. (2006) Implementing curriculum integration in standards-based middle schools: the principal's role, National Middle School Association, Westerville, Ohio.

State of Queensland, Department of Education. (2001) *The Queensland school reform longitudinal study*, Department of Education, Brisbane.

Stevenson, C. (2002) *Teaching ten to fourteen year olds*, 3rd edn., Allyn & Bacon, Boston.

Tanner, L. N. (1997) *Dewey's laboratory school: lessons for today*, Teachers College Press, New York.

Tyack, D. and Tobin, W. (1994) The "grammar" of schooling: why has it been so hard to change? *American Educational Research Journal*, vol. 31, no. 3, pp. 453-479.

Tyler, R. W. (1949) *Basic principles of curriculum and instruction*, University of Chicago Press, Chicago.

Tytler, R. (2007) "Re-imaging science education; engaging students in science for Australia's future", (ACER), retrieved July 15, 2007.

<http://www.acer.edu.au/documents/AER51_ReimaginingSciEdu.pdf>

Vars, G. F. (1991) Integrated curriculum in historical perspective, *Educational Leadership*, vol. 49, number 2, pp. 14-15.

Vars, G. F. (1993) *Interdisciplinary teaching: why and how,* 2nd edn., National Middle School Association, Columbus, Ohio.

Vars, G. F. (1997) Effects of integrative curriculum and instruction, in J. L. Irvin, ed., *What current research says to the middle level practitioner*, National Middle School Association, Columbus, Ohio.

Vars, G. F. (1998) 'You've come a long way, baby!', in R. David, ed., *Moving forward from the past: early writings and current reflections of middle school founders*, National Middle School Association, Columbus, Ohio.

Wallace, J., Venville, G. and Rennie, L. J. (2005) Integrating the curriculum, in D. Pendergast and N. Bahr, eds., *Teaching middle years: rethinking curriculum, pedagogy and assessment*, Allen and Unwin, Sydney.

Wraga, W. G. (1997) Patterns of interdisciplinary curriculum organization and professional knowledge of the curriculum field, *Journal of Curriculum and Supervision*, vol.12, no. 2, pp. 98-117.

Zyngier, D. (2004) *Engaging pedagogies and pedagogues – what does student engagement look like in action?* paper presented at Doing the Public Good: Positioning Educational Research AARE International Conference, Melbourne.

Zyngier, D. (2006) *(Re)conceptualising connectedness as a pedagogy of engagement*, paper presented at AARE Annual Conference, Adelaide.