Challenging, integrated, negotiated and exploratory curriculum in the middle years of schooling: Designing and implementing high quality curriculum integration.[1]

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Abstract

The concept of curriculum integration (CI) has been repeatedly recommended as a curriculum design for the middle years of schooling but the extant literature is confusing, ambiguous and generally difficult to make sense of. In particular, the literature provides insufficient practical guidance and direction for teachers who want to implement CI in their classrooms. Teachers' knowledge and understanding about CI is often hazy with the result that design and implementation of CI can be haphazard and ineffective, despite the best intentions. This article investigates teachers' beliefs about CI in two middle schools in Tasmania. It critically reviews the relevant literature of CI with an emphasis on identifying typical pitfalls and explaining political influences. By drawing on theories about the nature of knowledge, it explains that designs for CI need to consider the ways different subjects are organised and taught. The article argues the case for a pragmatic approach to CI design and implementation in the middle years in Australian contexts, with a view to developing a robust network of shared knowledge and understanding about CI. Based on research evidence, it concludes by making several recommendations for designing and implementing high quality CI programs.

Introduction

The Position Paper of Adolescent Success states that teachers should implement "integrated and disciplinary curricula" for young adolescents (10-14 years old) that are "challenging, integrated, negotiated and exploratory" (Middle Years of Schooling Association [MYSA], 2008). The Position Paper recommends curriculum integration (CI) but it does not offer further guidance or supporting detail about appropriate curriculum design. Over the last two decades, middle schooling advocates in Australia, and elsewhere, have made steady progress on improving school environments, developing productive and inclusive pedagogies, and creating authentic assessment that young adolescents respond to (Pendergast & Bahr, 2005, 2010). Progress on developing pedagogies suited for the middle years has been especially encouraging (Darling-Hammond, 2008; Hayes, Mills, Christie, & Lingard, 2006; Jackson & Davis, 2000; Newmann & Associates, 1996). However, even the best pedagogical practices and assessment approaches are ineffective in isolation and should be aligned with well-conceived curriculum designs that respond to the developmental needs of students and support high quality learning (Beane, 2004).

Accordingly, if the 'message systems' (Bernstein, 1977) of curriculum, pedagogy and assessment in the middle years are to be aligned effectively, increased attention needs to be given to curriculum design. Progress towards developing a coherent framework for curriculum design has been modest due to the diffuse, bottom-up nature of middle level

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reform (Merifield, 2007). As a result, the current 'curriculum message' in the middle years of schooling in Australia is weak and dispersed. CI has been mooted as a coherent curriculum design suited for the middle years (Carrington, 2006; Chadbourne, 2001; MYSA, 2008; Whitehead, 2005), but confusion and ambiguity in the CI literature means that aggregated curriculum messages about CI are unclear. In the interests of clarifying the curriculum message, research needs to resolve questions about the messages CI middle level teachers receive and believe and how teachers implement CI in ways that respond to the developmental needs of young adolescents and satisfy concerns about excellence and rigour.

This article argues the case for an informed and pragmatic approach to implementing CI in the middle years of schooling in Australia. It draws its data from two sources. One source is teachers' perceptions of curriculum messages from a study of middle grades teachers in two independent schools in Tasmania (Dowden, 2012a). The other source is derived from an extended review and analysis of the research literature. The intention of this article is to provide some sign-posting for those who intend to implement CI and, in the process, open a conversation about the nature and purpose of CI in the middle years with a view to developing a coherent and focused curriculum message about CI.

Literature review

The concept of CI has been long advocated as a curriculum design for the middle years of schooling in the USA (Beane, 1990, 1991; National Middle School Association [NMSA], 2002; Vars, 1987, 2001). In favourable circumstances, CI confers greater flexibility to local curriculum designs and provides for diverse student needs (Beane, 1997). Unfortunately, CI is a difficult and murky concept, thus many teachers and educators hold misconceptions that lead to ineffective practice (Gatewood, 1998).

The literature of CI is fragmented and unclear which has resulted in the proliferation of a bewildering range of terms and definitions (Dowden, 2007a). The terminology of CI is confusing and ambiguous with many terms that have spontaneously appeared (and disappeared) including: *fused curricula, interdisciplinary curriculum, multidisciplinary curriculum, thematic units, correlation, trans-disciplinary curriculum, integrated curriculum, curricula integration, curricular integration, integrative curriculum* as well as *curriculum integration*. Other recent articles in this journal that discuss specific issues relating to terminology and definitions in greater depth are Dowden (2010) and Pendergast, Nicholls, and Honan (2012). For the purposes of this article, CI is defined broadly as:

> A collective term for curricula where meaningful learning activities are designed by crossing discipline boundaries and/or utilising multiple disciplinary perspectives with the purpose of helping students to create and enhance knowledge and understanding.

Curriculum integration has its roots in two distinctly different traditions which date back to the beginning of the twentieth century (Gehrke, 1998). While various different models of CI have descended from one or other of these traditions, the weight of literature shows that it is historically and empirically accurate to consider CI in terms of two models: subject-centred

CI and student-centred CI (Dowden, 2007b). In keeping with the extant literature, it greatly simplifies analysis and discussion of CI, without seriously sacrificing accuracy, to utilise a theoretical framework with just these two models. Subject-centred CI is derived from social efficiency, which is primarily concerned with efficiently correlating or finding over-laps between subjects, and student-centred CI is derived from democratic progressive education (Kliebard, 1986). A useful way to conceptualise each model is to borrow from Bernstein's (1971) curriculum theory where, in the case of subject-centred CI organised according to a theme, the subjects are more important than the theme; whereas, in the case of student-centred CI, the theme is more important that the subjects (Dowden, 2007b).

S*ubject-centred curriculum integration*

The strongest criticisms of CI have been reserved for thematic units where subjects are organised according to a theme (Beane, 1997; Gatewood, 1998). The main source of criticism has arisen when subjects are artificially forced into an over-arching theme. For instance, in a Queensland study of middle level teachers, Rumble (2010) found that participants were concerned about being expected to implement a kind of CI with false links between subjects. This practice of forced subject correlation has no theoretical or pedagogical basis to recommend it. It is a mediocre practice that logically leads to "farcical units where [students] might study dinosaur science, do dinosaur mathematics, write dinosaur poetry, create dinosaur art, carry out dinosaur social studies, and do dinosaur dancing" (Dowden, 2012b, p. 29). Dewey (1915 also critiqued the forced correlation of subjects. He highlighted the artificiality of this process by commenting that efforts "to correlate studies" become absurd when teachers "resort to all sorts of devices to weave a little arithmetic into the history lesson and the like" (p. 91). The strongest criticism of developing a thematic approach across the curriculum, comes from self-reports by middle level teachers in the USA who, as Dowden (2007b) explained, greatly regretted spending many hours in intense team preparation – often in weekends and holidays – only to find students dislike the resulting units. A related problem is tensions in teaching teams that stem from differing expectations about developing units. For example, in a Queensland study of cultural transformation in middle schools, Main (2009) found that tensions in teacher teams were largely connected to the "complexity" of CI (p. 467). Related to this issue, the 'Cross-curriculum priorities' in the Australian Curriculum signal that some subject correlation is expected, yet the rationale for cross-curricular connections seems ill-conceived (Australian Curriculum, Assessment and Reporting Authority, 2014). For example, correlating elements of physics and cultural anthropology is of questionable value and, as recently reported in the media, has raised the ire of subject teachers in the senior secondary years.

In contrast, the judicious use of cross-curricular approaches, where inquiries naturally traverse disciplinary boundaries, enhances middle level curricula (Beane, 2004; Gatewood, 1998). For example, a Tasmanian study found that investigation of a controversial environmental issue – correlating Studies of Society and Environment (SOSE) and science – was a promising approach for authentic learning in the junior high school years (McLaine & Dowden, 2011). In this case, the expert knowledge of subject teachers was complementary and enabled students to develop deep understandings from two perspectives. SOSE teachers

had a greater awareness of political and ethical issues, whereas science teachers had a superior understanding of pollution in the ecosystem (McLaine & Dowden, 2011).

S*tudent-centred curriculum integration*

Student-centred CI has been recommended by American educators as an ideal curriculum design for the middle years (e.g., Beane, 1990, 1991, 1997; NMSA, 2002; Vars, 1987, 2001) but it has never been implemented at the systemic level. It encourages young adolescents to actively engage in their learning and helps them understand how the disciplines link with the real world (Beane, 1990; Brazee & Capelluti, 1995; High & Andrews, 2009). Most student-centred designs for CI share a strong commitment to the democratic ideology of progressive education. Following Dewey, student-centred CI is based on a democratic classroom philosophy where power is shared between the teacher and students (Dewey, 1916; Beane, 1997, 2005). This democratic orientation is revealed by the 'bottom-up' nature of student-centred CI based on a process of collaborative teacher-student planning, negotiation and implementation that allows student voices to emerge and come to the fore (Beane, 1997). Pedagogy, assessment and curriculum are closely aligned with a focus on generating powerful and coherent learning environments that deeply and actively engage young adolescents. Curriculum negotiation is another tool that motivates and engages students and, when applied to CI, immediately solves the problem encountered in some thematic units where students are uninterested in the topic. The notion of negotiation has had a following in Australia (e.g., Boomer, 1982), although it has been linked to CI only relatively recently (e.g., Hunter & Park, 2005).

Politics and curriculum integration

The curriculum is always political and CI is no exception. The literature of CI is replete with records of suppression of student-centred CI by conservative interests (e.g., Beane, 2013) but it is pertinent to note that the political pendulum swings in both directions. For instance, rhetoric towards the end of the 1990s suggests that democratic progressive ideology, aided by post-modernist concerns about inclusive schooling, briefly dominated the middle schooling discourse. For a short period it seemed that American middle level teachers were defined by their capability and willingness to utilise CI in the classroom. Beane and Brodhagen (2001) stated that teachers who adhere to the principles of middle schooling "adopt curriculum designs beyond traditional separate subject approaches" (p. 1159). The 2002 *NMSA Position Statement on Curriculum Integration* expected teachers to implement student-centred CI based on democratic principles. Using remarkable language, it challenged teachers to:

> Push themselves beyond the conventional, separate subject format and expand their use of integrated curriculum formats [from thematic units] at a basic level to more advanced implementation of full-scale, integrative programs in democratic classrooms. (NMSA, 2002)

Hargreaves, Earl, Moore, & Manning (2001) commented on the pervading rhetoric by contrasting single subject approaches and CI. They stated that "it is if [CI] increases in professional virtue, while being unable or unwilling to let go of specialisation keeps teachers

in sin" (p. 105). The NMSA soon toned down student-centred CI rhetoric and, as the conservative tide in the USA gathered strength after the election of President George W. Bush, it became increasingly difficult to access information about student-centred CI from the NMSA website. After this period, the NMSA more broadly recommended a curriculum that is "relevant, challenging, integrative and exploratory" (e.g., NMSA, 2010, n. p.).

Due to the political context in the USA, fully developed versions of student-centred CI, where teachers and students collaboratively negotiate, plan and implement the curriculum, tend to only satisfy curriculum stakeholders who share a commitment to progressive education. As a result, student-centred CI is often unacceptable to other curriculum stakeholders including: federal and state governments, district administrators, teachers' subject organisations, universities and employers, many of whom distain progressive education. By way of explanation, progressive education was underpinned by the ideology of 'progressivism', which spent itself as a political force in the first two decades of the twentieth century, and has been political poison in USA ever since then because of its presumed association with communism (Goldman, 1952).

The reality in the USA is that student-centred CI has endured in only a few isolated places such as the tiny left-leaning state of Vermont, which has a curriculum that is sympathetic to democratic education (Brazee & Capelluti, 1995; Kuntz, 2005), or where there is the rare combination of academic and professional leadership in the classroom (e.g., Brodhagen, 2007). As Gatewood (1998) observed, "few average-sized [American] public schools have come even remotely close to implementing … [student-centred CI as] proposed by its leading advocates; successful [exemplars] are hard to find" (p. 41). A general rule of curriculum implementation, that is especially pertinent to student-centred CI, is the struggle for control of the curriculum among stakeholders with competing interests, thus ensuring that a curriculum design derived from a single philosophical position is rarely enacted without resistance (Kliebard, 1986). Indeed, student-centred CI has regularly encountered stiff political resistance (Beane, 2013; Weilbacher, 2001).

Australian experiences of curriculum integration

Curriculum integration has been associated with the middle years of schooling in Australia for at least two decades but it has not coalesced into an established practice that is widely accepted and understood. Nonetheless, student-centred CI in the middle years has been advocated in Australia (e.g., Chadbourne, 2001; Dowden 2007a; Merifield, 2007; Whitehead, 2005). Dowden (2007a, 2007b) argued, from a theoretical perspective, that student-centred CI along the lines of Beane's model (1997) is superior to subject-centred CI, but he did not discuss important pragmatic issues such as how teachers should deal with differing demands and expectations in primary and secondary schooling contexts. Another Australian source of research on CI comes from a relatively extensive research program in Western Australia that investigated the subject of science with a view to integrating it with other subjects (e.g. Wallace, Rennie, Malone, & Venville, 2001).

Data from a recent large-scale research project in Queensland shows that implementing CI in the middle grades results in positive learning outcomes that are superior to single subject approaches in some measures (Pendergast, Nicholls, & Honan, 2012). Pendergast and colleagues found that CI resulted in respectful and supportive classroom environments where young people were highly engaged in their lessons. Importantly, they also found that CI rated higher for the dimension of 'Intellectual Quality' than English, mathematics, SOSE and science (pp. 17-18). The Intellectual Quality dimension, which was a component the Productive Pedagogies model used in the project, included higher order thinking, deep understanding, and substantive conversation (see Mills et al., 2009, p. 72). The dimension of intellectual quality is important in the Australian political context because it heads off concerns implied by at least one commentator that CI could lead to a "dumbed down and politically correct" form of schooling (Donnelly, 2007, p. 25). The Queensland study aligns with earlier American research which provides "substantial evidence" that CI approaches are comparatively more effective than separate subject approaches "with regard to affective outcomes" (Beane & Brodhagen, 2001, p. 1169). Although the study did not distinguish between subject-centred or student-centred CI, it is important because it provides recent empirical evidence in favour of CI and adds to the well-established history of positive learning outcomes in the USA (Vars, 2000).

Curriculum integration in Grades 7-9

When teachers implement CI in the years that straddle junior high schooling (Grades 7-9), research shows that it encounters extra barriers relating to the departmentalisation of subjects and differing sub-cultures within the disciplines. For instance, a well-known example of CI in a high school in New Zealand resulted in dramatically better academic results by Year 11 students (equivalent to Grade 10) but, due to resistance from teachers who were used to traditional single subject approaches, the innovation was not sustained (Nolan & McKinnon, 2003). Similarly, CI programs in Grades 8-9 in six schools in Western Australia were not sustained for reasons relating to teacher workload, staff turnover and difficulties sourcing teachers who would commit to CI (Wallace, Sheffield, Rennie, & Venville, 2007).

A CI program in a Grade 9 extension class in a Western Australian school, reported by Venville, Sheffield, Rennie, & Wallace (2008), encountered a well-known problem that Aiken (1942) referred to as the "vicious divisions" between the disciplines where, due to prevailing social mores and different ways of doing things within subjects, subject-centred CI is not implemented effectively (p. 53). In this instance, a thematic unit on midges, involving collaboration between science, mathematics, SOSE and English teachers, collapsed when the science teacher seized control of the unit. The non-science teachers reported that they were excluded from planning and the sole assessment item was a biology test (Venville et al., 2008). A conclusion that can be drawn from this study is that secondary teachers, who are educated as subject specialists, tend to be less sympathetic towards the aims of CI compared to primary or middle school teachers who are usually educated as generalists.

Summary of review

Curriculum integration is a concept worthy of scrutiny in the middle years of schooling despite a history of sporadic implementation. Vars reviewed over a hundred studies of CI and concluded that "almost without exception, students in any type of interdisciplinary program do as well as, and often better than, students in a conventional [single subject] program" (2000, p. 87). There is little doubt that young adolescents respond positively to pedagogies and curricular designs – such as CI – that: investigate real-life issues, are intellectually challenging, are personally relevant, and are connected to local and global contexts (Beane, 1997, 2005; High & Andrews, 2009; NMSA, 2010). The research base continues to generate persistent evidence of enhanced student achievement and positive learning outcomes connected to CI. Although the majority of research on CI fails to make the distinction between subject-centred and student-centred CI and, thus, fails to recognise flawed CI designs such as subject-centred thematic units that artificially correlate subjects, the aggregated data is in favour of CI in the middle years of schooling.

Method

The participants in this study were middle grades teachers in middle schools housed within two independent schools in Tasmania. Teachers' beliefs have been long regarded as fundamental to the efficacy of classroom practice (Kagan, 1992), thus qualitative methodology was used to investigate participants' perceptions and beliefs about curriculum messages in the middle years. Data was gathered via a preliminary on-line questionnaire, followed by in-depth interviews. This twin pronged approach is recommended for the qualitative investigation of beliefs and understandings (Cresswell, 2009). A similar approach is being utilised in an on-going longitudinal study of teaching and learning in Queensland state schools, where classroom observations are augmented by interviews to ascertain teachers' knowledge and understanding about the relationship between curriculum and pedagogy (Mills et al., 2008). In the preliminary phase of the study, an online questionnaire with open-ended questions was utilised to survey the teachers in the participating middle schools to gauge their attitudes, identify trends, and determine the parameters for the interviews. The questionnaire was completed by 30 self-selecting participants (16 in one school and 14 in the other). The results were used to inform the interview schedule. The main phase of the study involved conducting interviews with four participants from each school. Participants were selected on the basis of availability, their leadership role and representation in terms of professional experience and gender. Interviews were conducted by the researcher using open-ended questions and in-depth interviewing techniques (Cresswell, 2009; Rubin & Rubin, 2005). The first part of the interview, which investigated teachers' beliefs about classroom pedagogy, was reported on previously in Dowden (2012a). The second part of the interview explored participants' beliefs about: (a) curriculum design in the middle years, and (b) implementing CI in the middle years (see Appendix 1). The researcher checked transcripts by listening to audio files of the interviews. The data were analysed using a 'hybrid' process of inductive and deductive thematic analysis (Fereday & Muir-Cochrane, 2006) and sorted according to emergent themes. Representative interview data were selected to illustrate the themes so that participants' beliefs about curriculum messages could be directly represented (Rubin & Rubin, 2005). A limitation to the methodology of this research was the reliance on interviewing. If time and funding had allowed it would have

been preferable to triangulate the data by observing examples of CI in the classroom. The study had ethics approval and was classified as minimal risk. Participation was voluntary and identities were kept anonymous. The identities of the two schools were not disclosed. The community of educators in Tasmanian independent schools is small, thus particular care is taken in this article to avoid identifying participants via descriptors.

Results

The participants emphasised that students should be productively engaged in classroom learning activities. One participant demonstrated an intuitive understanding of the need to align curriculum, pedagogy and assessment:

> Every now and then you will have every single kid totally engrossed … because everything lines up. The kids' interests, the way you've presented the topic, the interaction … Engaging kids is what teachers [should be] constantly striving to do.

Another participant was frustrated by traditional approaches to assessment that hampered alignment:

> Testing [dominates] and this is the most frustrating thing as a teacher… [It] reduces the capacity of a [student] to pursue an idea … [We're essentially saying:] 'We don't want you to know about that even though you're interested in it and it's going to teach you the big picture.'

Some of the participants intuitively understood that the middle level curriculum needs to be responsive to young adolescents by including elements of student-centred design. One participant yearned for a curriculum design that would promote deep understanding:

> Look, it all boils down to this idea of meaning-making: where the [students] are in terms of … their capacity to contextualise, or to recognise that several things in conflict with each other can be true at the same time.

Another participant explained that in the middle years young adolescents need to experience a developmentally responsive curriculum that articulates with their world:

> They need to be engaged with the curriculum … [and] their environment … That's a developmental thing in the sense that students at this age are making their own stamp upon the world and want genuine relationships, genuine engagement, genuine tasks and activities.

All eight participants believed that CI equated to thematic units, thus they had a subject-centred understanding of CI. They did not conceive of student-centred CI but, paradoxically, they were in favour of types of pedagogy and assessment that naturally align with student-centred CI. When the participants were asked about CI, two typical responses were:

> (CI) is looking at an essential thematic question from several different perspectives.

> Integrated units to me is taking every discipline that students are working with … and using that to teach a concept.

The participants were acutely aware that their schools expected students to develop a sound grasp of the academic disciplines. They were willing to consider subject correlation in the humanities but this did not extend to science or mathematics. One participant described an instance of unplanned correlation:

> English and SOSE … cross over quite a bit … In Grade 8 … they're doing human rights and … [reading] 'To Kill a Mockingbird'.

In most cases the classroom curriculum was planned by teachers without input from students. One participant stated:

> [Curriculum design] asks essential questions and works backwards to what students actually need to know … We look at this with our curriculum planning … [It makes] teachers think about … the real purpose behind [learning activities].

One participant described a limited process of curriculum negotiation:

> I'm sometimes staggered by what the kids want to do, "Mr .. I don't really like these ideas. I can see they'd be okay but I've got the idea that I'd like to build a replica of this, this and this. Can I go with that?" And I say, "Yes, but I want a written piece that goes with it, to describe what you've done."

Discussion and recommendations

The participants impressed as being highly committed to their students and professional in their practice. They confidently discussed their personal pedagogical philosophies but were noticeably reticent when responding to queries about middle level curriculum design or specific questions about CI. Here it should be noted that in Tasmania, the ill-conceived CI promulgated by the defunct 'Essential Learnings Curriculum' of 2000-2006 (Rodwell, 2009), which neglected to adequately describe or locate the traditional subjects, may have disposed the participants against notions of student-centred CI. All the participants conceived of CI as subject-centred, which aligns with Queensland research that found middle level teachers understood CI in terms of thematic units (Rumble, 2010). The participants were focused on preparing students for academic success in the senior years, thus they indicated CI should be reserved for the earlier middle years and the humanities. This aligned with Pendergast and colleagues' (2012) Queensland study of CI that found that study schools did not incorporate science or mathematics in CI in Grades 8-9, whereas SOSE and English were commonly correlated in these years. In summary, the participants had little knowledge about CI and, in a variety of ways, subtly expressed their reluctance to explore curricula that might jeopardise students' future academic success in high status subjects. In another Queensland study,

Rumble (2010) similarly found that middle level teachers felt they had to "take risks" to implement CI (p. 199).

Research shows that student-centred CI can be spectacularly successful in the middle years (e.g., Kuntz, 2007), thus it seems puzzling that the conditions needed for implementation of CI can deteriorate so abruptly. The lack of relevant "curriculum knowledge" among middle level teachers – described by Shulman (2007, p. 118) as an important sphere of teachers' professional knowledge – provides an incomplete explanation for reluctance to implement CI. Venville, Wallace, Rennie, & Malone (2002) provided a cryptic clue to the puzzle by suggesting that "it is the nature of the school subject that seems to us to hold the key to understanding curriculum integration" (p. 43).

Like or not, the middle years sit on the cusp of primary and secondary schooling, thus advocates for the middle years need to understand both of these cultures if middle level reform is to be effective. History shows that it is "wise" for implementation of CI in the junior high school years "to respect the status of the single subject curriculum" but this advice can be strengthened by considering of the social contexts of schooling and the nature of knowledge (Dowden, 2012b, p. 29).

In high schools, the organisation of subjects into departments is a foundational element, recognised as "the one fortress that [has] proved virtually impregnable," despite a century of reform (Kliebard, 1986, p. 269). As Beane (2013) observed, "rare is the [American] high school that strays from the single subject approach" (n. p.). The specific pedagogical content knowledge (PCK) that secondary teachers need for subjects like mathematics makes the implementation of CI increasingly problematic in the junior high school years because this PCK does not cross over to other subjects (Dowden, 2012b). When CI is poorly implemented, students end up with gaps in their knowledge and understanding. For example, a Western Australian study of students who had participated in CI in Years 6-9 found "many instances of naïve scientific and mathematical understandings and an absence of remedial teaching to address such deficiencies" (Wallace, Rennie, Malone & Venville, 2001, p. 12). It should be axiomatic that CI designs ensure the content and skills of the official curriculum are taught and gaps are filled, for example by running separate mathematics lessons alongside CI (Dowden, 2012b).

Sociologists have argued that the knowledge and structure of the different disciplines means that each subject develops its own sub-culture and that specialist teachers teach differently. Young (2008) explained that each academic subject has its own complex network of codes and practices that students need to learn. In addition, the nature of subjects like mathematics or physics means they are taught in an ordered, incremental and hierarchical manner that does not support a flexible approach likely to be needed in CI (Bernstein, 2010). Although teacher teaming to collaboratively design and implement CI is valuable, to the extent that synergies are found and each teacher's knowledge augments the others' knowledge, a tipping point tends to occur in the junior high school years when teachers decide they need to prioritise the agenda of their specialist subject and they become unwilling to make what they perceive to

be compromises that will affect students' academic progress. In summary, when designing and implementing CI in the junior high school years it is necessary to carefully seek a "balance" between meeting the developmental needs of young adolescents and ensuring that the development of disciplinary knowledge, skills and understanding is rigorously maintained (Main & Bryer, 2007, p. 101).

Contemporary political currents are not always favourable towards reform of the middle years of schooling (Bahr & Crosswell, 2011). The danger is that at some point in the not-too-distant-future CI will be quietly dropped from curriculum policies. Middle schooling advocates in Australia, and elsewhere, need to adopt a pragmatic approach towards implementing CI instead of arguing a case for a perfect model of CI in a non-existent Utopia. Professional development for CI should be holistic and include thorough knowledge and understanding of young adolescents' developmental characteristics, develop the skill-set needed to align pedagogy and assessment with curriculum design, and – crucially – develop a rationale for CI that is widely understood and accepted by local school communities. This builds cultures that support CI and allow teachers to innovate but within agreed frameworks. Like any innovation, CI should also engage the energy, enthusiasm and leadership of the principal (Snapp, 2006).

This article has argued that middle level advocates and educators in Australia need to collaboratively develop a 'curriculum message' about CI that is coherent and focused. In the meantime, the nature and purpose of CI recommended in the Position Paper of Adolescent Success (MYSA, 2008) needs clarification so that teachers understand what "challenging, integrated, negotiated and exploratory" curriculum design means. The following guidelines for CI design and implementation are indicated:

- Establish a clear rationale for implementing CI;
- Design and implement student-centred CI to help students achieve personal developmental goals and build social connections (especially Grades 5-7);
- Before attempting to implement student-centred CI, ensure that teachers know about young adolescents' developmental needs (see Caskey & Anfara, 2007);
- Avoid subject-centred thematic units that lack a strong rationale;
- Implement subject-centred CI in instances where two or more disciplinary perspectives are desirable and will lead to deep learning;
- Be aware of the need in the junior high school years (Grades 7-10) to rigorously prepare students for academic success in their senior years; and thus
- Avoid CI if it does not ensure students will build strong disciplinary foundations.

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Appendix 1: Guiding questions for interview

1. In your experience what curriculum designs do you find most effective in Grades 5-9?
2. What do you understand by the concept of CI – also referred to as thematic units?

Probe questions: What is your opinion on CI? What do you think about the idea of designing the curriculum (and classroom pedagogy) so that it is personally relevant and meaningful to students? To what extent might this be attainable and/or desirable?

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