Understanding Commonalities between School-Based Curriculum Development (SBCD) and Curriculum Differentiation (CD).
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Introduction

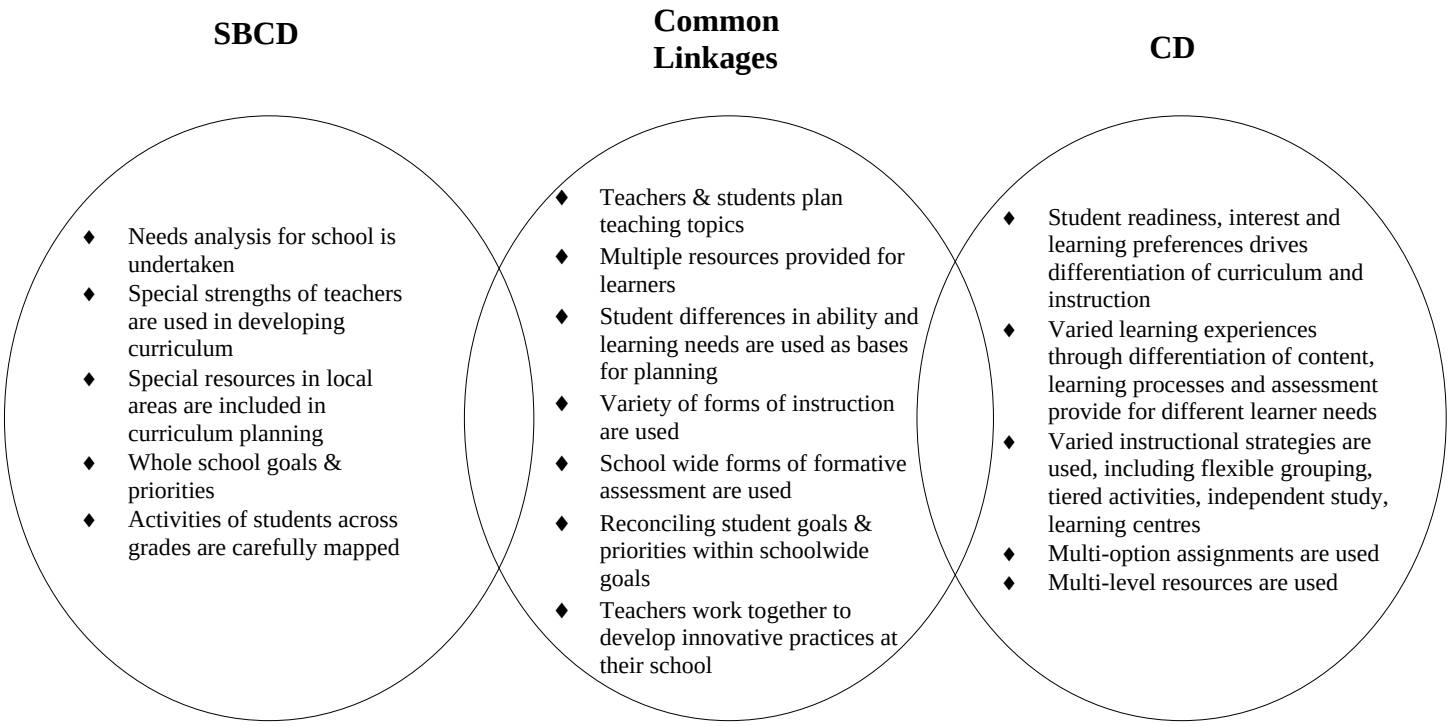
At first glance it might be argued that there is very little in common between School-Based Curriculum Development (SBCD), and Curriculum Differentiation (CD). According to Skilbeck (1984), SBCD "is the planning, design, implementation and evaluation of a programme of students' learnings by the educational institution of which those students are members" (p. 2). Curriculum differentiation is defined as "the process of modifying or adapting the curriculum according to the different ability levels of the students in one class (UNESCO, 2004, p.14)", Tomlinson (2001) contends that "in differentiated classrooms, teachers provide specific ways for each individual to learn as deeply as possible and as quickly as possible, without assuming one student's road map for learning is identical to anyone else's" (p. 2).

Yet, further reflection can reveal that the two terms represent related levels of interest, namely, a school focus and a student focus. A major reason for doing SBCD is to produce a curriculum that is especially relevant to students in a local context - to build on local resources, interests. That is, the needs of students are of major significance.

At the classroom level, a teacher can vary or differentiate his/her curriculum in terms of content, pedagogy and assessment to tailor the needs and interests of individual students. Curriculum differentiation has a major focus on the needs of groups of students but it also has to do this within the parameters of school - wide policies.

It can be argued therefore that the two terms of SBCD and curriculum differentiation are closely linked and that they complement each other. The argument can be extended further by using a Venn diagram to illustrate commonalities between the two (see fig. 1). Details of these commonalities are discussed later in the paper but first, it is necessary to develop an understanding of the two terms separately before focusing on commonalities.

Fig.1 Linkages between School Based Curriculum Development (SBCD) and Curriculum Differentiation (CD)



SBCD

SBCD in its various guises of "decentralisation" and "school - focused" is proposed by politicians in many countries. Currently, SBCD is a vogue priority in a number of Asian countries such as Singapore, China, Hong Kong and Taiwan (Juang, Liu, & Chan, 2005). It is not a new approach. It has been widely practised in Israel for over 30 years (Ben-Peretz & Dor, 1986).

In the UK, politicians are advocating personalised learning which encourages teachers to seek out and promote individualised learning in local settings (Miliband, 2004), but also high on their agenda are standards and accountability priorities across the system.

Similarly, it might be argued that at the school district level in the USA, school - managed activities are practised, yet the advent of the No Child Left Behind legislation (2001) brought out centrally planned and controlled standards which are now firmly in place, especially for core subjects.

A literal definition of "school-based", might imply that all educational decisions are made at the school level. Apart from independent and "alternative" schools operating as separate entities, it is highly unlikely that this situation pertains to systemic schools (for example, government schools, schools operating within a school district). The term "school - focused" is a weaker interpretation in that it suggests that decision-making, at whatever level it occurs and by whom, is undertaken in terms of the interests and needs of school communities. This latter term could apply to a whole range of highly centralised decision - making activities. Expressed along a continuum "school - based", is closer to the extreme of individual schools being responsible for all curriculum decisions, whereas "school - focused" could be represented as a middle position between the centralised and decentralised extremes.

Gopinathan and Deng (2006) coined the term ‘school –based curriculum enactment’ with reference to Singapore. They argue that teachers in Singapore can be curriculum developers within a context of centralised curriculum development. A recent Singaporean study noted that middle level leaders such as heads of departments can be important players in bringing about curriculum development (Heng & Marsh, 2009).

The term "curriculum development" has wide connotations and is used to describe the various curriculum processes of planning, designing and producing, associated with the completion of a particular set of materials. It can also include teaching activities associated with the implementation and evaluation of a set of materials. One might ascribe such elaborate activities to a well- funded curriculum project team, but the scale and range of these activities could well be beyond the scope of individual school communities. As a result, the term "curriculum - making" is preferred, because it signifies a less grandiose range of activities for school personnel.

SBCD can involve creating new products or processes, but that can also involve selecting from available commercial materials and making various

adaptations. The latter two processes, of course, require less time and funds and a lower level of commitment from participants. Yet, it can be argued, that SBCD tasks should be embarked upon only if they are manageable and can be achieved within a reasonable time frame.

There is yet another interpretation of curriculum development, which is far less materials - oriented than those mentioned above. It can be argued that teachers should not merely be involved in activities which enable them to implement curriculum materials more effectively, but that they should engage in wide ranging inquiries of concern to them. Connelly and Ben-Peretz (1980) argue that teachers' engaging in educational enquiry will grow professionally from these activities, even though, as a result of these experiences they may be less inclined to implement curricula designed by others.

Without doubt, education systems and agencies have used the term SBCD as a *slogan*. It conjures up action at the local level, it connotes participation, grass - roots control, and many other attributes which are held to be near and dear to the general public. In a more cynical vein, it could also be stated that SBCD has been used by senior officers in some education systems to deflect the blame for educational crises or is used as a means of cost - cutting from head - office budgets (Dimmock, 1993).

Other writers argue that SBCD is an amalgam of ideas, which can be construed as an *educational philosophy*. Skilbeck (1990), puts together such terms as "teacher and learner working together to produce a curriculum", "freedom for both teacher and pupil", and the "school's responsiveness to its environment" to produce a theoretical position about SBCD. He argues at length for structures and policies to be developed at the school - level and for there to be shared decision - making by all participants, especially teachers and students. Fullan (2002) supports teacher involvement in change at the school level, and he has produced various factors and strategies, which could be viewed as a model for SBCD. Other writers have commented on educational philosophies that are closely linked to SBCD. For example, Kelly (2009) argues for a democratic underpinning to curriculum planning and development. He states that democracy is a moral system-the major elements of this moral framework are equality, freedom and respect for the rights of the individual. “In a genuinely democratic society, the government’s policies must accord with these elements” (p.268).

The literature is also replete with various accounts of SBCD as a *technique*. Case study accounts in particular have focused upon particular techniques which seem to work. Some writers have produced particular procedures such as person - centred approaches (Department of Education, 2007) or management - centred approaches (Joyner & Ben-Avie,Comer, 2004). Others have concentrated upon ways of making SBCD work more effectively by the training of special in-house consultants (Sabar, 1983); and leadership skills and qualities for school principals and middle level leaders (Leithwood & Menzies, 1999; Heng & Marsh, 2009).

Priorities in education can be ephemeral. As indicated above, SBCD has been practised in a number of countries over several decades. It has not achieved overwhelming support. So what is the evidence on the success or otherwise of doing SBCD?

Undertaking SBCD can be both fulfilling and draining. For teachers there are the attractions of involvement in an SBCD project, with all the bonhomie, excitement and camaraderie that can develop, and a welcome relief from classroom isolation, but this is only the positive side. On the negative side, there is a very real danger that a person will over - extend himself/herself and become fatigued.

Consequently, it is difficult for teachers to find the time to carry out research on their SBCD. Usually, it is external facilitators who produce case - study reports. Not unexpectedly, many of these case studies are superficial and non--- probing even though they are usually positive in their descriptions. Examples include Cocklin, Simpson and Stacey's (1995) analysis of a secondary school in New South Wales, Australia; Day's (1990) analysis of a primary school in the UK; Hannay's (1990) study of a high school in Canada; Ramsay et al's (1995) study of 18 secondary schools in New Zealand.

Cousins, Goh and Clark (2006) studied 4 secondary schools in Canada. They concluded that the role of the school principal was crucial. Macklin's (2004) case studies of a primary school in Queensland and a Prep- Year 9 school in Queensland demonstrated the value of teachers in the school experimenting with innovative pedagogies within an action research framework. Chen and Chung (2000) studied 12 primary schools doing SBCD in Taiwan. They concluded that the most significant factor to bring about successful SBCD was to have a standing committee for curriculum development.

Ben-Peretz and Dor's (1996) fascinating thirty-year longitudinal study of 28 schools doing SBCD in Israel, concluded that "for SBCD to be a viable process, the school must have a unique ethos and a distinct philosophy and must also have the power to maintain pedagogic and economic autonomy" (p.25).

Jung, Liu and Chan (2005) developed a web - based performance support system using three critical factors of continuity, sequence and adaptability. This was implemented in a primary school in Taiwan over a two-year period, with successful results. The authors acknowledge that "SBCD is a complex and highly knowledge - intensive task but that the four web -based modules did assist teachers with the main SBCD processes of analysis, design, implementation and evaluation.

Over recent years in Singapore there have been a number of case studies published which illustrate workings in individual schools (Poo & Thye, 2006; Su Ying, 2006).

Curriculum differentiation

"Curriculum is a way of planning, assessing and teaching a heterogeneous group of students in one classroom, where all students are learning at the optimal level 4" (UNESCO, 2004, p. 9). The roots of curriculum differentiation can be traced back to a number of child-centred philosophers such as Dewey and Rousseau. Dewey (1922) underscored the need to develop a "discriminating mind" and a "disciplined intelligence" to:

> cultivate a habit of suspended judgement, of skepticism; of desire for evidence, of appeal to observation rather than sentiment; discussion rather than bias; inquiry rather than conventional idealizations. (p. 141)

Differentiation for different categories of students is common in many countries. A number of European countries have traditionally differentiated school systems for 12 to 15 year old students. Tracking or streaming and ability grouping for relatively fixed groups of children are common practices. In Germany, beginning at age 10, students are streamed and selected into different school types according to ability and career inclinations (Terwel, 2005).

In the U.S., tracking has been hotly and widely debated for a long time (Oakes, 1986a, 1986b), particularly as students from African-American backgrounds and students of Latino-American origins are over-represented in low-achieving schools and in lower and vocational tracks.

Conceptualisations

Curriculum differentiation, tracking, grouping and equity issues

Curriculum differentiation has been broadly discussed in the context of tracking and fixed notions of ability-grouping, which are highly contentious issues in debates on curriculum theory and practice and in the domains of special education, including gifted education (Oakes, Gamoran, & Page, 1992; Terwel, 2005). A greater clarity into understanding curriculum differentiation as requiring *flexible grouping* of students according to their learning needs (as opposed to the static and permanent grouping of students that defines tracking) is important and is discussed in this section.

In "Detracking for high student achievement" in the March 1998 issue of *Educational Leadership*, Oakes and Wells argued that "high academic standards . . . will alleviate inequalities in curriculum instruction, and expectations for students, . . . [and] will also bring excellence by requiring all students to demonstrate higher levels of achievement and by providing all students with *equal* [emphasis added] educational opportunities while preparing a more informed citizenry and a better trained work force" (p. 38).

In their response to Oakes and Wells entitled, "Equal does not mean identical", Reis et al. (1998) counter-argued that providing all students with

equal educational opportunities is not the same as providing all students with identical educational opportunities. Educational needs are specific to particular learners, and academically advanced or slower learners with diverse learning needs will not benefit from the equal educational opportunities extended to all students solely by means of detracking. More is needed than de-tracking schools. Reis et al. argued that students with different abilities, interests and motivational levels should be provided with differentiated instruction to meet their unique learning needs. Moreover, they contend that it is not grouping per se that matters in the classroom, but it is what happens in the group.

Hence, tracking (also known as streaming) and grouping (also known as flexible grouping) are regarded as two quite different concepts. Reis et al. (1998) define tracking as the "general, [static] and usually permanent, assignment of students to classes that are taught at a certain level and with whole-group instruction" (p. 76). Grouping is defined as a more flexible, less permanent arrangement of students that takes into account factors in addition to ability, such as motivation, interests, instructional levels, and student effort (Renzulli & Reis, 1991). Flexible grouping is a key instructional approach in curriculum differentiation (Tomlinson, 2001). This therefore distinguishes between curriculum differentiation, which involves the flexible grouping of students in a classroom and needs-based curriculum decisions that are reviewed from time to time, on one hand, and tracking, which involves the permanent assignment of students to classes that tend to adopt whole-group, non-differentiated teaching approaches, on the other.

Ultimately, what really matters is that all learners in schools, including those who are advanced, should be academically challenged in the zone of proximal development (Vygotsky, 1978) so that new learning can take place. Reis et al. (1998) argue that the context in which learning takes place may be negotiable in relation to the types of grouping arrangements that are debated in the educational literature, but whether new learning takes place is not negotiable.

In the field of gifted education, following longstanding debates on equity issues, Borland (2003) has argued for a paradigm shift in gifted education that requires a reconceptualisation of giftedness to one that conceives of curriculum differentiation as the field's *raison d'etre*. In fact, he argues that a defensible differentiated curriculum would require conceiving of gifted education without gifted children. This would mean directing efforts to differentiating curriculum and instruction for all the diverse students in schools, and in doing so, bypassing the divisive, intractable problems of defining and identifying the problematic, social construct of giftedness. Borland argues that "educationally inclusive diversity demands differentiation" (p. 121) that is predicated on students' current educational needs. He contends that the alternative is not to respect the difference and uniqueness of each child and to force individual children to conform to a one-size-fits-all curriculum, and this invariably leads to concepts such as "the normal" and "the abnormal" (p. 121) and subjects children to Foucault's (1995, cited in Borland) "normalizing judgment", the process that "measures in quantitative terms and hierarchizes in terms of value the abilities, the level, the "nature" of individuals

. . . [and] traces the limit that will define difference in relation to all other differences, the external frontier of the abnormal" (p. 109).

Sapon-Shevin (2003) argues that there is a need to distinguish between an "equal" education meaning the same curriculum, standards, teaching methods and evaluation and an "equally good" education, that is, a relevant and defensible education that is responsive to each child as an individual with specific learning needs. She argues that the benefits provided by programmes for the gifted such as smaller classes, more enthusiastic teachers, a richer curriculum and more individualization as a result of curriculum differentiation, are changes that would benefit all students.

Curricular perspectives

From the curricular perspective, a curriculum theory is primarily seen as a theory of educational planning, in which the development of the student is the main concern. This would mean that the planning and implementation of educational experiences should be the central focus as these are the "primary engines" of development and learning (Bronfenbrenner & Morris, 1998). From the standpoint of curriculum differentiation, issues concerning teaching approaches, developing student understanding and assessing student learning in relation to the educational needs of students would be central.

Differentiated learning for gifted students. Winebrenner (2000) asks if the promise of education for all applies to gifted students. She argues for differentiated learning for gifted students. She cautions that the needs of some of the most able students have been overlooked. One plausible reason she puts forth is that gifted students tend to score high on assessments, leading educators to assume sometimes erroneously that they must be learning. Another reason for ignoring the needs of the gifted is that educators have misunderstood research on role modeling to mean that some gifted students need to be present in all classrooms to serve as role models for other students. While struggling learners benefit from mixed ability classes with capable students as positive role models, the discrepancy in learning ability between gifted students and struggling learners is too wide to facilitate positive role modeling (Schunk, 1987). Winebrenner recommends the use of curriculum compacting for advanced learners (Reis, Burns, & Renzulli, 1992), and the provision of alternative learning experiences through differentiation opportunities in terms of content, learning processes, products, learning environment and assessment.

Differentiated learning for struggling students. Schoolwide efforts to use differentiated instruction to help struggling students have shown very encouraging improvement in student performance levels (e.g., Cusumano & Mueller, 2007). In a school in the U.S. with a poverty rate of nearly 90 percent and with 25 percent English learners, schoolwide and grade-level professional learning teams worked together under the instructional leadership of a new principal and a schoolwide leadership team to address students' diverse learning needs through differentiated instruction. A continuum of interventions was put in place, teachers were helped to use and act on student data, and

the flexible use of whole-group and small-group instruction to provide appropriate and meaningful differentiation was employed, as needed. The school reported significant improvements in students' reading, writing and mathematics performance levels and higher teacher morale (Cusumano & Mueller).

Research into curriculum differentiation

Support for differentiation in theory and research

The Stanford University School of Education Conceptual Framework (2002) emphasizes: "It is not enough for teachers or principals to believe that all children can learn if they do not know how to enable diverse students to engage challenging material successfully" (p. 3). It is important for educators to be prepared as "diagnosticians, planners and leaders" (p. 5) who are able to make informed, needs-based, curricula decisions to meet the needs of diverse learners.

The promise that all children will learn is rhetoric if teachers lack deep knowledge of learners and wide-ranging pedagogical skills to help children of diverse abilities. While many teachers acknowledge the presence of diverse learners in their classrooms, the reality of practice is that most teachers do not engage in "differentiated or academically responsive instruction" (Tomlinson et al., 2003, p. 119) to plan and teach for learner variance.

Tomlinson et al. (2003) reviewed the literature to establish grounding in differentiation of curriculum and instruction in response to student academic readiness, interest and learning profile in academically diverse classrooms. Differentiation as a response to student readiness has its roots in Vygotsky's (1978) theory of the zone of proximal development. The theory posits that an individual learns in one's "zone of proximal development", and that with scaffolding or support by a teacher or an academically more advanced peer in the classroom, new learning takes place. Tomlinson et al. highlight studies that indicate students in differentiated classrooms achieve better academic outcomes than those taught in a one-size classroom approach (e.g., Gayfer, 1991). In a study on adolescents and schooling, it was found that academic tasks that were not aligned with students' readiness levels (e.g., tasks that were too simple or tasks for which students did not have requisite skills) resulted in lower achievement and a lower sense of self-worth among students (Csikszentmihalyi, Rathunde, & Whalen, 1993). Hence, the essence of differentiation in response to student academic readiness is the need for academic challenges at the appropriate level of difficulty in order for students to be intellectually motivated and to sustain efforts to learn, as opposed to being bored by under-challenging tasks or frustrated by too difficult tasks (Bransford, Brown, & Cocking, 2000).

In terms of differentiation of curriculum and instruction in response to student interest, Tomlinson et al. (2003) highlighted the body of theory and research into motivation, creativity and achievement (Amabile, 1996; Torrance, 1995). Tasks that are of interest to students are likely to lead to greater student

engagement and to help students develop creative potential. The concept of "flow" (Csikszentmihalyi et al., 1993) gives focus to the importance of interest in motivation. When in a psychological state of flow, there is complete engagement with a task to the extent that one forgets time and fatigue that may come with prolonged work on the task. Whalen (1998) notes that teachers are most effective in helping students find flow when they are passionate about their work, communicate high expectations, support student efforts, and plan for appropriate challenges that leverage on students' interests and talents.

Differentiation as a response to student learning profile takes into account theory and research in learning styles (e.g., Dunn, 1996) and thinking styles (e.g., Sternberg, 1996). Sternberg posited three modes of thinking: analytical, practical and creative. His research has shown that when instruction matches a student's style preferences, learners at primary, middle and high school levels achieve better (e.g., Sternberg, Torff, & Grigorenko, 1998). Differentiation for learner preferences therefore serves to help learners capitalize on strengths and compensate for weaknesses in learning (Sternberg, 1985).

Studies into effectiveness of curriculum differentiation

Case reports of schoolwide efforts have been documented in the literature. Beecher and Sweeny (2008) reported the eight-year efforts in one elementary school in the U.S. in closing the achievement gap with curriculum enrichment and differentiation. The strategic plan for school improvement began with a thorough analysis of the strengths and weaknesses of all dimensions of the school and the creation of a shared school vision. Using a blended approach comprising differentiated curriculum with schoolwide enrichment in teaching and learning, the study noted that staff development and teacher training were essential to the success of each new initiative in the school. Teachers were provided with training, modeling, coaching and planning time to integrate new ideas into their lessons.

A study of differentiated instructional change over three years (VanTassel-Baska et al., 2008) examined Title 1 heterogeneous classroom teachers' instructional behavior change through implementing well-designed, research-based curriculum units and attending professional development activities over a three-year period. As measured by an observation scale of differentiated teaching strategies, experimental teachers received statistically significant higher ratings than comparison teachers on differentiated strategy use and effectiveness across three years. The study indicates the need for multiple years of professional development and the need to monitor classroom implementation.

Other studies have documented teachers employing the principles of differentiation to nurture the talents and abilities of all students, including the gifted, by enhancing the quality of work asked of students (e.g., Kapusnick & Hauslein, 2001; Page, 2000).

Commonalities between SBCD and curriculum differentiation

As noted in the beginning of this paper, and by reference to figure 1, it might be argued that although SBCD and curriculum differentiation are at different levels of generalisation (whole school versus single classroom), there are common linkages, which are worth exploring.

- Teachers and students involved in planning topics.

Although it will depend upon ages of the students, it is conceivable that this activity could occur both as a school wide activity as well as an individual class activity. Students have a great deal of knowledge about the local community, and this could be quite valuable in assisting teachers in developing teaching topics that are geared toward community. Similarly, it can be argued that students could be very useful in assisting a classroom teacher in either the planning of topics or assisting with seeking out resources needed or even helping to develop rubrics for various assessment tasks.

- Providing multiple resources for learners.

At the school level, students and teachers might both be involved in collecting local community data, photographs, records and paraphernalia which could be of value for the teaching of specific units. At the classroom level students might be encouraged to provide a range of resources in addition to what the teacher is able to produce.

- Student differences in ability are used as a basis for planning,

At the school level it would be very necessary for teachers to have a good understanding of the ability levels of students across all grades, as well as other significant facts about the total school student population. Hopefully, this information would be used in making decisions about the type and range of courses to be included in any SBCD program. At the classroom level, it would be quite crucial for a teacher committed to curriculum differentiation to be aware of various intellectual /emotional differences between students in his/her class and to make adjustments for this in the style of teaching provided.

- Variety of forms of instruction used

At the school level, teachers would want to make use of particular resources and facilities available within the local area, and this might then lead to using some forms of instruction rather than others. For example, it could mean that field trips, and the use of local guest speakers might figure prominently because of their availability within a school community. At the classroom level, it would be essential for the teacher to provide as wide a range of instruction as possible to cater for the various interests and abilities of his/her students.

- School wide forms of formative assessment are used.

Recent research indicates the importance of formative assessment, especially for lower ability students. At the school level, it would be crucial that policies were put in place to ensure that all teachers on a regular basis, undertook formative assessment so as to improve the opportunities for all students, both academically able and the less able. At the classroom level, the teacher committed to curriculum differentiation would of course be using a number of opportunities for formative assessment to get feedback for the student, and also to provide feedback on his/her teaching successes.

- Reconciling individual class goals with school wide goals.

It is argued that these two targets are complementary. To a certain extent, an individual teacher would be designing goals, especially for his/her classroom. But these would nevertheless have to be within the parameters of the goals devised for the school as a whole. If there was appropriate communication and collaboration between teachers then it might be expected that this would indeed be the case.

- Teachers work together to develop innovative practices at their school.

At all levels, whether it be school wide curriculum development, or whether at the individual classroom level, there are many advantages for teachers to work together to plan, share and develop innovative approaches to teaching. It would of course depend upon the leadership style of each school, and the commitment that senior managers promote to have teachers work together collaboratively.

Summary and conclusions

Globalisation forces are causing countries to re-examine their existing educational systems. Although many countries have developed centralised systems, there have been initiatives to allow greater school autonomy especially in terms of school–based curriculum development (SBCD). Another important initiative is to examine how equity issues in schools can be addressed and so various approaches to curriculum differentiation have been proposed in recent years.

In this paper, it was argued that SBCD and curriculum differentiation have complementary roles. Although there are differences between the two concepts in terms of level of activity, there are also many commonalities in priorities especially with regard to teacher/student planning, use of a variety of forms of instruction pertinent to the school and students, the use of formative assessment to assist teachers and students, and the need to reconcile individual and school wide goals.

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