

Chapter 2: Four Keys to Differentiation

Watching the European Spring unfold in the French Pyrenees offers a splendid metaphor for the differentiated classroom. Spring in these parts isn't a well-rehearsed or synchronized event. On the contrary, the mountain flora seems to operate on a multitude of different readiness schedules. Spring in these foothills, often like the development of children in the differentiated classroom, is an erratic, unpredictable, at times messy, but stunningly beautiful event.

From our kitchen window, we have a panoramic view of the Massat Valley. Middle March heralds the harbingers of spring: the sudden carpet of saffron-yellow primroses and purple and blue crocuses. Egg-yoke daffodils and bridal-veil-white snowberries appear by the side of the track that leads to our farmhouse. Moments, or perhaps days later, they are joined by carmine poppies, Spanish bluebells, and buttercups. The Japanese quince bush in the front lawn suddenly bursts into scarlet blossom and is soon followed by the white-frosted cherry and peach trees. A little later come the deep purple lilacs and amethyst cascade of wisteria

Each of the flowering shrubs and trees has its own schedule. Each wild flower waits for the appropriate combination of sunshine, warmth and moisture. How dissimilar is this to the children in our classrooms – each waiting for that unique combination of intellectual stimulation, self-confidence, interest and personal connection that will provide maximum access to the curriculum? If no two flowers

are identical, if no two snowflakes are really the same, why in the world would we act as if children are cut out of the same mold?

Matt

Both the Middle School Counselor and the Learning Specialist are concerned about Matt. He has had several psycho-educational evaluations and, despite his parent's persistent denials, his learning disability is well documented. He is reading three grade levels below his age group. His handwriting is almost illegible. In a one-to-one situation, Matt can exhibit surprising flashes of insight and his critical thinking skills can be astute and penetrating. However, in the seventh grade classroom he is silent and withdrawn.

During the last semester, the concern of the Counselor and Learning Specialist has increased because Matt has become the target of teasing. A group of children in the seventh grade have taken to calling Matt "Retard". This name-calling has extended to graffiti appearing on both Matt's locker and his loose-leaf binder. Unfortunately, Matt's thick prescription glasses and his poor hand-eye coordination add to the impression of general awkwardness.

On one occasion the Learning Specialist observed Matt in the cafeteria carrying his tray to a table already occupied by a group of his classmates. When he arrived at the table, his classmates stared at him incredulously. Their body language spoke louder than their unspoken words: *Do you really think you're going to sit with us?* Realizing that he had forgotten a fork and spoon, Matt placed his tray on the table and returned to the serving line. When he returned to the table, all of his classmates had disappeared, as had his tray of food.

In recent weeks, the Counselor and Learning Specialist have noticed a significant change in both Matt and his interaction with peers. A month ago, Matt auditioned for the Middle School play. Once on stage, the thick glasses and the awkward gait disappeared. Matt stepped into character and literally “blew away” the director and the rest of the would-be cast. “Holy Smokes! Matt’s a natural. Who would have guessed that he had such acting talent! He is a completely different child on stage!”

Actually, Matt’s success in the audition is making him a completely different child off-stage too. His teachers look at him differently. Their expectations have risen. They have a new and expanded vision of his potential. His success has been unmasked. His peers have stopped calling him “Retard” and he is participating more in class discussions. His grades remain fairly dismal, but he and his teachers have a plan for improvement. Most importantly, Matt has stopped having to eat his lunch in solitude.

Rupa

Rupa is a very bright young lady, or she used to be last year in the fourth grade. Her previous school report card indicates a straight “A” record for achievement in academics. However, her work in her new international school has been barely average. Homework has often been late or incomplete. If she knows how to do something, the assignment will come in errorless, but if she is unsure of herself, the homework will be left in her locker, lost on the school bus or eaten by the dog. Rupa will participate in class but only when she is called upon directly by the teacher. She appears to lack self-confidence and often doesn’t seem to understand the teacher’s expectations.

Her parents are distraught by the decline in Rupa's school achievement. They have visited her teachers almost every other day and are in the process of hiring a private tutor for math. Television and computer privileges have been suspended indefinitely. Her father has repeated numerous times that Rupa will have to go to India for university where the competition for admission is very intense. "With these grades, she just won't make it. And she doesn't speak Hindi!"

Rupa's father owns and runs a successful furniture company in Kenya and has now opened a branch in South East Asia, where the family has moved. Rupa's previous schooling has been in a local Roman Catholic convent school in the suburbs of Nairobi. While the medium of instruction was English, the language of the playground was a patois of English, Gujarati and Kiswahili. The emphasis in her previous school was on rote memory at which Rupa excelled.

Rupa is ethnically Indian, but has never lived in India. She was born in Africa, but doesn't feel any sense of being Kenyan or African. Her family is Hindu, but she knows more about the *Catechism* than she does the *Vedas*. Her father and mother pay lip service to traditional Indian culture when it serves their purposes, but the intrusion of Western values and commercialism is all too real in their lives. Ten-year-old Rupa remembers being a success last year and grieves for her past life.

Frank

At the conclusion of Frank's valedictory speech the entire audience was on its feet applauding. Everyone knew that Frank had defied all odds and had won a four-year scholarship to study pre-med. at Yale. The thunderous applause echoed throughout the commencement hall capturing the enormous pride the school community took in his accomplishment.

Frank had overcome some major obstacles. He was a host country scholarship student. His parents were both schoolteachers in a rural African school who in no way could have afforded big city, international school fees.

Another obstacle was not so obvious and had formed the centerpiece of Frank's valedictory speech. He had spoken about the culture shock he had experienced when he had first come to this international school. He had described the difference between studying in a traditional government school and the intellectual demands of the IB diploma program. "For the first three or four months I was at this school, I didn't say a word in class. I was in a state of total confusion and shock. It was as though I'd landed on a different planet. I didn't understand what the teachers wanted. I was used to a school in which there were right and wrong answers. You were rewarded for right answers and punished for wrong answers. But here, the teachers wanted you to think. They expected you to have ideas. They were interested in your opinions. You were evaluated not on a basis of right and wrong, but on the basis of how well thought out your answers were. If you have never been in a traditional government school, you have no idea of the magnitude of this change! You have no idea how terrifying it is to appear before a teacher who expects you to think. Now, I recognize it as the greatest gift that anyone can ever receive!"

May Ling

Thirteen year old May Ling is visibly nervous during the admissions interview. She answers questions softly with single words or short phrases. For most of the time, she scrutinizes her shoes and her hand is kept firmly in front of her mouth. She is easily flustered and, at least once, appears on the verge of tears.

Although she has been in an English medium school in Macao for the past five years, the ESL placement test indicates that she is at Level One (Beginner Level).

The language of May Ling’s home is mixed. Her Chinese mother speaks to her in Cantonese; her Danish father speaks to her in English.

When May Ling is not so nervous, her social English is deceptively competent. Socially, she would appear to be a fluent English speaker. However, her written language in both English and Chinese reveals that she is struggling with abstract expression in both languages. The fact is that May Ling doesn’t have a strongly developed mother tongue. She is not just wrestling with the acquisition of English; she is wrestling with the *acquisition of language*.

In medical practice, highly specific knowledge of the individual needs of a patient is indispensable when selecting the best treatment. This holds true in all ‘helping professions’—especially in education.

--Mel Levine, *Celebrating Diverse Minds*

As these four brief vignettes illustrate, international school students bring with them the most extraordinary diversity of talents and expectations, learning preferences and obstacles, cultural backgrounds, linguistic competencies, personal interests and family histories. However, the trouble with truth is that it has an unfortunate tendency to become an easily dismissible platitude. How often have we heard a colleague bring a discussion of learning different child to a premature close with the expression: “But all our children are unique!?”

Differentiation requires us to go beneath the platitudes and re-discover how remarkably different our students really are. In his charming essay “What a Professor Learned in the Third Grade”, Elliot Eisner (1998) reflects on his three-month visit to two third grade classrooms. He writes:

Consider, for example, the idea that all children are different. To professors of education, that notion is about as prosaic as can be, but seeing the ways in which a group of eight-year-olds can differ in size, temperament, maturity, interests, energy level, and personal style is quite another matter. Their

presence makes plain the vacuity of the concept of “the average eight-year-old” ...Teachers cannot deal with abstractions or averages when they teach. Their knowledge of individuals is crucial in enabling them to make appropriate assignments, to provide comfort and support, to impose sanctions, to define limits to behavior, to remind individual students of obligations, to encourage participation and to foster attitudes of cooperation (p.190).

In our classroom work over the last thirty years, we have identified what we consider to be the Four Keys that serve as a foundation for differentiated instruction. These four keys or dimensions of differentiation do not stand alone but are intricately interwoven into the fabric of teaching and student learning.

Four Keys to Differentiation

☞ Knowing your students (and yourself as teacher)

☞ Knowing your curriculum

☞ Developing a repertoire of strategies

☞ Starting simple, moving slowly, and keeping our work social

Key One: Knowing Your Students (and yourself as a teacher)

Again, it is easy to dismiss “knowing your students” as either a vacuous platitude or a statement of the obvious. However, if we ask: ‘What knowledge about our students do we need in order to customize their learning?’ we begin the process of uncovering a critical dimension of effective differentiation.

By “knowing our students” we mean more than mere social or administrative information. It is a given that teachers would know their students’ names, ages, something about friendship circles, and something about their family backgrounds.

But to maximize learning we need to dig deeper than this superficial information. We need to come to know the child as a learner in the specific areas of **readiness, interests and learning profile.**

Readiness

We use the term “readiness” as opposed to “ability” because readiness suggests to us that it is malleable (that it will change and can be influenced by skilled instruction) and that it will vary considerably depending on circumstance, topic or subject and developmental stage. Ability, on the other hand, suggests innate talents over which neither the child nor teacher has much influence.

The concept of readiness is slippery because grammatically it is a *noun* but in real life it acts as a *verb*. We often think of readiness as in the phrase “reading readiness” as a condition that is achieved as a prerequisite for the next level of challenge or achievement. However, readiness is actually a dynamic process over which the teacher has considerable influence. It is not enough for us to be able to identify or even foster “readiness”, we must also be able to anticipate it and mediate it upwards. Perhaps we should not think of *readiness* but of *readying*. Vygotsky (1986) writes that “the only good kind of instruction is that which marches ahead of development and leads it; it must be aimed not so much at the ripe as at the *ripening* functions (*emphasis ours*)...instruction must be oriented towards the future, not the past.” (p.188-189)¹.

As teachers, we make decisions and judgments daily about the readiness level of our students. Should we teach *Julius Caesar* in Grade Eight? What understandings need to be in place prior to introducing the concept of division? At

¹ Please see the sidebar on the Zone of Proximal Development.

what age or grade should we expect students to be able to produce a five or six paragraph essay? These are questions of group readiness. If we are to differentiate instruction, we need to think of readiness in *both* group and individual terms.

Mihalyi Csikszentmihalyi (1991), the author of *Flow: The Psychology of Optimal Experience* perceives readiness as the necessary condition for human learning and enjoyment. Readiness, for Csikszentmihalyi, is connected to the demands of the challenge that confronts us. Learning and enjoyment occur at the confluence of challenge and ability, when the opportunities for action are equal to the individual's capacity. For those who don't have the right skills, an activity is not challenging: it is simply meaningless. "Playing tennis, for instance, is not enjoyable if two opponents are mismatched. The less skilful player will feel anxious and the better player will feel bored. The same is true of every other activity: the piece of music that is too simple relative to one's listening skills, will be boring, while music that is too complex will be frustrating." According to Csikszentmihalyi, "enjoyment appears at the boundary between boredom and anxiety, when the challenges are just balanced with a person's capacity to act (p.50)."

We would suggest that this is the exact location of the differentiated classroom – on the frontier between challenges that are too difficult and therefore frustrating and challenges that are too easy and therefore boring. Only when a child works at a level of difficulty that is both challenging and attainable for that individual does learning take place. Therefore it stands to reason that if readiness levels in a class differ, so must the levels of challenge provided for students. (Tomlinson, 2003; Jensen, 1998; National Research Council, 1999; Sousa, 2001, Vygotsky, 1978, 1986; Wolfe, 2001).

Zone of Proximal Development

In his classic work *Thought and Language* (1986), the Russian cognitive psychologist Lev Vygotsky coined the expression “the Zone of Proximal Development.” The phrase has come into common parlance in many schools and is often used as a synonym for a child’s intellectual readiness for a given task or for the understanding of an abstract concept. The Zone of Proximal Development is a way of looking at readiness, but it is a very specific kind of readiness and it may be useful to look back at what exactly Vygotsky meant by it.

Vygotsky contrasts the usefulness of measuring a child’s level of mental development based solely on his or her independent practice as opposed to his or her performance when thinking is mediated by adult intervention. The discrepancy between what the child can accomplish independently and what the child can achieve with skillful adult intervention is what Vygotsky called the Zone of Proximal Development.

“Having found the mental age of two children (level of independent functioning) was, let us say, eight, we gave them harder problems that they could manage on their own and provided some slight assistance: the first step in a solution, a leading question, or some other form of help. We discovered that one child could, in cooperation, solve problems designed for twelve-year olds, while the other could not go beyond problems intended for nine-year-olds. The discrepancy between a child’s actual mental age and the level he reaches in solving problems with assistance indicates the zone of his proximal development...Experience has shown that the child with the larger zone of proximal development will do much better in school.”(p.187)

Lev Vygotsky, *Thought and Language*

Learning readiness can be thought of as the knowledge, understanding and skills that an individual brings to a new learning situation. However, we also need to appreciate that readiness is profoundly influenced by prior learning, self-esteem, one’s sense of efficacy, social status within the class or group, life experience, dispositions and attitudes and habits of mind. Readiness is no less complex than any one of the children entrusted to our care.

Interests

There are two types of student interests that form useful information for the teacher planning a differentiated classroom. First, there are pre-existing student interests. These are those subjects, topics and pursuits about which an individual student has an existing curiosity or passion. They are areas in which the student readily pursues new knowledge and the acquisition of new skills without external motivation. These are areas of the curriculum (including extra-curricular activities and athletics) or outside interests in which the students readily invests time and energy. Relevance to the student is obvious and engagement is immediate.

Secondly, there are areas of potential interest. These are topics, activities or pursuits that the student may not have yet discovered or may not have been exposed to. Potential interests are as powerful as pre-existing interests but their relevance needs to be mediated.

Effective teachers pay attention to both types of student interest. When we are able to link the classroom curriculum to student interest we are able to tap into internalized achievement motivation – where goals are personal, motivation comes from within and achievement is deeply meaningful. Mediating connections between classroom learning and student interests is one of most powerful strategies that teachers can employ towards the goal of creating enthusiastic life-long learners.

Learning Profile

Knowing your students as learners means knowing how they learn best. It means knowing their strengths and talents as well as their deficits. It means knowing their preferred learning modalities (visual, auditory, tactual or kinesthetic) and having an understanding of their intelligence preferences.

Knowing the learning profile of a student means having some idea of how culture and gender may influence the acquisition of new knowledge and skills. In an international school that may have fifty or sixty different nationalities represented in the student population, making connections between cultures and their influence on learning can be challenging and complex.

Understanding learning profiles includes knowing under what environmental conditions a given student works best. Does Frank do his best thinking in the morning or afternoon? Is Rupa's concentration affected by temperature (does she become distracted when the classroom is too warm or too cold?) When Matt is struggling to read, does he do better in a hard straight-backed chair or when he is lounging on a soft pillow on the floor?

Finally, having insight into a student's learning profile also means having an understanding of her attitudes and dispositions, her temperament, her self-esteem in relation to school work and the social status accorded her by her peer group (Cohen 1998). We know that emotion and cognition are inextricably bound together. Attitudes and dispositions are exterior manifestations of internal emotions. These emotions can have powerful effects on learning and success in school. For example, how does May Ling's introverted personality affect her acquisition of language? Or how has Rupa's low frustration threshold affected her willingness to take intellectual risks?

Linked closely with "knowing your student" is "knowing yourself as a teacher". Time and time again, educational research tells us that learning takes place in a social context (Vygotsky, 1986) and that the teacher/student relationship can be crucial to student achievement. The most effective teachers also those teachers who have self-consciously cultivated their own emotional intelligence (Goleman 1995),

particularly in the areas of self-awareness and regulation, social awareness and relationship management.

Key Two: Knowing Your Curriculum

A number of years ago, a large international school in South East Asia identified two schoolwide annual goals: the first was to develop a standards and benchmarks framework for its curriculum and the second was to promote differentiated instruction in every classroom in the school.

It was not long before a teacher raised her hand at a faculty meeting and asked if these two goals weren't diametrically opposed. "Don't they contradict each other?" she asked. "For example, defining standards and benchmarks requires us to identify what knowledge and skills we expect the average fifth grader to have. We are standardizing the curriculum and our expectations of children. Differentiation, on the other hand, demands that we look at each child as a unique learner. How on earth can we do both at the same time?"

We were grateful for this question because it opened up a lively and insightful conversation about the relationship between setting standards and catering for diverse learning needs. It also reflects the fact that the standards based movement in education and initiative in differentiation grew up separately with little reference to each other until Tomlinson & McTighe (2006) married them in their seminal book *Integrating differentiated instruction and Understanding by design*.

On one level, the questioning teacher had a point. Setting standards and benchmarks for student achievement may *seem* contradictory to the efforts we make to differentiate instruction. However, there may be another way of looking at the

situation. Rather than begin from the position that they are mutually exclusive, let's assume that they may be mutually inclusive. Let's ask what would happen to one without the presence of the other.

We know, all too well, what happens when the individual learner gets forgotten or disregarded or dismissed in the bureaucratic and often political move towards the standardization of student achievement. In the absence of differentiation (concern for responding to different students learning needs), standards often translate themselves into a narrow focus on objective accountability, especially high stakes testing. In some instances, these supposedly objective tests of student achievement have asserted a tyrannical hold over not just assessment but also classroom instruction.

On the other hand, imagine what would become of the differentiated classroom without clearly defined learning standards and benchmarks of student achievement. We would see either the individualized programmed learning of the 1960's (25 different programs for 25 different students with virtually no cooperative learning or direct instruction from the teacher) or muddled and disorganized instruction lacking in clear learning outcomes and objectives. Benchmarks of student achievement provide clear attainment targets for teachers. Differentiation provides a multitude of paths to reach those targets.

We would contend that standards and benchmarks and differentiation are complementary as opposed to contradictory. It is through the development of shared standards and benchmarks of student achievement that teachers truly come to know their curriculum.

By "knowing the curriculum" we do not mean simply subject area mastery (although this is a crucial part of the knowledge we are referring to). We are referring

to that in-depth knowledge of the curriculum that allows the teacher to identify the primary concepts and to distinguish between enduring understandings (Wiggins & McTighe, 1998) and the peripheral information that may be interesting to know but is not essential to conceptual understanding.

Key Three: Developing a repertoire of strategies

In the introduction to this book, we go to some lengths to stress that differentiation is not simply a larger toolbox of instructional strategies. The words “not simply” are important. It would be a gross over-simplification to reduce differentiation in such a way. However, there can be no denying that a broad, research-based repertoire of instructional strategies is a vital component in the differentiated classroom.

Engaging instructional strategies do not in and of themselves ensure high quality student learning. We have all witnessed the activity-driven classroom, where the teacher has prepared highly engaging and entertaining activities for the students with little thought given to the actual learning objectives or outcomes. The children have a wonderful time. The teacher is enviably popular. But little learning is accomplished.

Effective instructional strategies triangulate the three critical features of the classroom: the learning outcomes, the curriculum content, and the students themselves. Effective strategies embody learning theory and principles and are often generic enough to be transferable to many different subjects and age levels.

We would urge teachers to name the strategies they are using and tell their students why they are using it. When we provide students with the rationale for a

classroom activity, we uncover and share learning theory and in doing so we assist students in developing self-knowledge about themselves as learners – a critical dimension in fostering metacognition and self-directed learning.

Key Four: Keeping it simple and social

Differentiation is subject to two common causes of premature mortality: over-worked teachers being overwhelmed or over-worked teachers being under-whelmed.

It is very easy to see how the challenges and demands of differentiating a complex curriculum can be overwhelming. First there is the challenge of knowing twenty five diverse learners (and that's if you are an Elementary teacher with one class. The task of knowing your students becomes even more complex when you are a high school English teacher who may teach a hundred or more students during the course of a typical week.) And then the task really becomes daunting when we try to match the learning needs of specific children with a profound understanding of the curriculum -- the primary concepts and the essential questions. The stressed-out, over-worked teacher is already shaking her head in dismay and we haven't yet got to designing learning activities and performance assessments with children's strengths and learning styles in mind. It is easy to see how the challenge of differentiated instruction can be over-whelming.

However, in our experience the under-whelmed teacher can pose an equally difficult challenge. Here is the teacher who has grasped a simplistic understanding of differentiation and then dismisses it because: *I'm doing all that already*. It is not uncommon for a teacher to identify one or two aspects of the differentiated classroom

(a value she shares or a strategy that she is familiar with) and conclude that she doesn't need to do anything further in this area.

In reality, differentiation is a long, complex and challenging journey and it is the highly experienced, master teacher who recognizes that developing one's craftsmanship is never fully complete. There are, however, three important ways that teachers can avoid the dangers of being either over or under-whelmed.

First of all, **start simple**. This means setting realistic and reasonable objectives for one's self. A teacher doesn't become a master craftsman overnight. Select one of the keys to differentiation and then identify one or two specific strategies that you are going to focus on and practice. For example, if your objective for the next eight weeks is to gain greater insight into your students as learners, you might decide to practice a clinical observation strategy and engage in some collaborative analysis of student work. Setting manageable goals for one's self requires a degree of self knowledge and a modicum of humility.

Once you have a reasonable and realistic differentiation goal, **move slowly** but surely in the direction of mastery. Researchers who study change in schools and other organizations have identified what they call the "implementation dip". This is when individual performance deteriorates as a result of the implementation of a new strategy or program. Because the curriculum, methodology, strategy etc. is new to the teacher it is virtually inevitable that she will be less efficient with it initially than she was with her old "tried and true" methods. It is not uncommon for teachers to become discouraged and disillusioned during the implementation dip. They become impatient and dissatisfied with themselves professionally and then transfer those feelings of inadequacy onto the new curriculum, methodology or strategy. *"The new curriculum just isn't working. The students aren't producing the way they used to..."*

When we are able to perceive the big picture, we understand that we need to move beyond the implementation dip before we are able to get an accurate assessment of whether the change we have initiated is actually beneficial to student learning.

Finally, and perhaps most importantly, it is vital that we have supportive traveling companions on our journey towards differentiation. In other words, we need to **keep it social** – we need our professional colleagues. We need collaboration.

However, high quality professional relationships are made, not born and we have, for the most part, provided teachers with very little explicit training in how to work collaboratively. As a matter of some urgency, schools need to support teachers as they develop their collaborative skills. Administrators need to help teachers address issues such as:

- What behaviors foster shared goals, greater trust and interdependence?
- What can I do to promote shared accountability?
- How can I support the deep thinking of my colleagues?
- How do I handle conflict in the group?
- How are high functioning teams developed and maintained?

As we stated earlier, differentiation is complex and challenging work. The good news is that no teacher needs to “go it alone”. Our teaching colleagues are probably the most powerful professional resource available to us. And, for the most part, this is a resource that is just waiting to be tapped. It is the skills of collaboration that unleash the energy and power of this vital resource.

A Framework for Differentiation

We have used a technique called “Segmentation” as a graphic organizer for the critical dimensions of differentiation. As Figure #1 illustrates, we have created

four quadrants by placing a continuum of “Knowing Your Student” on the vertical axis and a continuum of “Knowing Your Curriculum” on the horizontal axis. At the far left there is limited knowledge of the curriculum and at the far right there is advanced knowledge of the curriculum. The same type of continuum is present on the vertical axis stretching from complex knowledge of students (and self) at the top of the figure to limited knowledge at the bottom of the figure.

The danger of any such graphic organizer is that it creates generalizations. While few real teachers fit neatly into the quadrants of Figure #1, we believe the visual structure is useful in illustrating the relationships between the Four Keys to Differentiation.

The lower left hand quadrant is the home of the Beginning Teacher. Because the novice lacks the expertise that is bred of experience, his knowledge of both the curriculum and students will, by definition, be limited. While the young teacher may be wonderfully enthusiastic and energetic, it is likely that his collaborative skills have not yet had a chance to mature in a professional environment and that he has not yet had the opportunity to develop a broad repertoire of instructional strategies.

The upper left hand quadrant reflects the Relationship-Oriented teacher. This is the teacher who has developed a deep knowledge of her students and herself as a teacher, but who lacks an advanced knowledge of the curriculum. This is the teacher who creates a warm and trusting classroom climate. This teacher has excellent interpersonal skills and a high degree of emotional intelligence. She is a skillful, reflective listener and is in tune with both the spoken and unspoken emotional needs of her students. She is often popular with both the children and their parents. She cares deeply for the youngsters in her class and both students and parents come to know and appreciate this. The children in her classroom feel a strong sense of

belonging. They identify with their membership in the class and there is extensive empathy.

But, we are compelled to ask, where in this wonderful class climate is the curriculum? How much planned learning is actually going on? With only a beginning knowledge of the curriculum, this teacher is unable to forge meaningfully appropriate learning objectives. The lesson outcomes are fuzzy and ill-defined. The learning activities may be entertaining and engaging for the students, but the connection between these activities and the lesson's purpose is tenuous at best. Teacher questioning tends to be spontaneous and haphazard, rather than planned. It is often simplistic and superficial. This is the teacher who easily drifts off the subject (perhaps because there isn't a clearly defined "subject") into personal anecdotes and stories and complex cognitive processes (e.g. analysis, comparison, evaluation, etc.) may not be taught explicitly.

The lower right hand quadrant of Figure 1 is the dwelling place of the Subject-Oriented teacher. This is the teacher with an advanced knowledge of the curriculum, but limited knowledge of students. This is the traditional content area expert – the teacher who “really knows (and often loves) her stuff”. This teacher knows what her students need to know and be able to do in order to perform well on public examinations. The subject-oriented teacher tends to teach subjects as opposed to students, but many times has the reputation of being one of the “best” and most demanding teachers in the school (often this is because she is assigned the highest achieving students). She is an expert in physics or mathematics or literature. This teacher is highly effective with older, brighter, self-motivated students. She tends to do extremely well in teaching students in the IB Diploma, Advanced Placement or

“A” level programs which have selective admissions. Her students achieve outstanding examination results and are admitted to the most prestigious universities.

However, one should not make the mistake of assigning the subject-oriented teacher to a Middle School class or a class with students who learn differently or with variable motivation. The challenges that these students present are more often than not beyond the expertise and patience of the subject-oriented teacher. Developing student motivation, mediating relevance, or responding to individual learning needs may not be perceived as part of her teaching responsibility. She tends to teach in the manner in which she learns best (perhaps in the manner in which she herself was taught) and is quick to mentally discard students who do not share her own preferred learning style, or who do not produce clearly recognizable (read “traditional”) products of high achievement. Because this teacher has very limited knowledge of her students as learners, she also has a very limited repertoire of instructional strategies. She tends to rely on lecture and seminar discussion, pencil and paper tests and quizzes and research papers.

The upper right hand quadrant we have labeled the Differentiating Teacher. Because this person combines complex knowledge of students and self with advanced knowledge of the curriculum, she is able to frame clear and meaningful learning goals and match her methodology to student readiness, interests and learning profiles. She has a wide repertoire of instructional strategies that provides her with both flexibility and self-confidence within the classroom. Because she has an advanced knowledge of the curriculum, she is able to devote a considerable portion of her in-class attention to clinical observation of her students and in doing so, she is able to identify and work in their Zones of Proximal Development (ZPD). This is the teacher who actively mediates the upward movement of the ZPD. Not only does she have a large “toolbox”

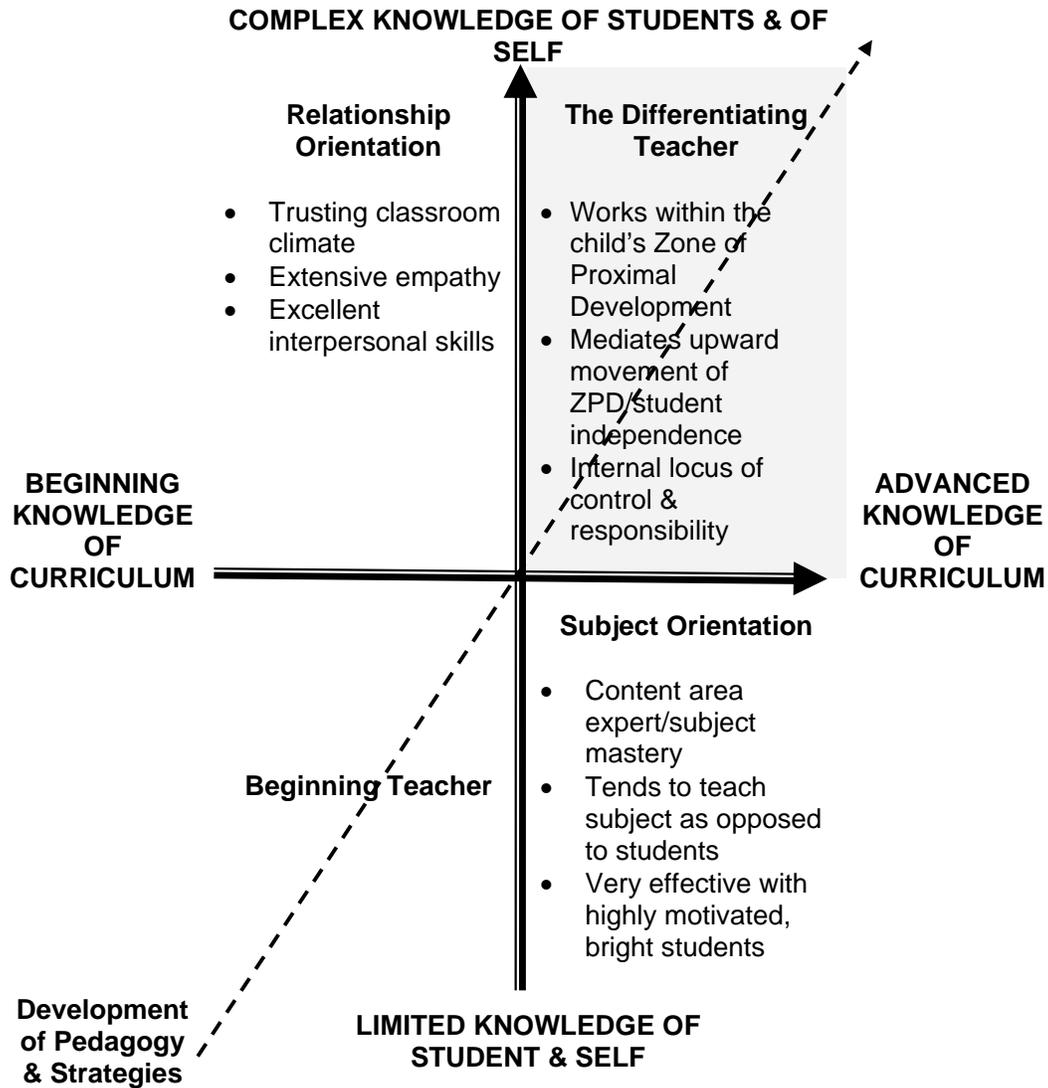
of instructional strategies, she has a deep conceptual understanding of the learning theory that is embedded in this pedagogy and is thus able to mix and match her knowledge of her students' learning needs with her advanced knowledge of the curriculum.

Because this teacher actively mediates both relevance of learning and potential student interests, she is tapping into intrinsic motivation and setting an expectation for an internal locus of control and responsibility.

Again, these four quadrants form simplistic and over-generalized portraits. It is unlikely that any real teacher would fit neatly into any such pigeon-hole. However, as an organizer of teaching and learning principles, the framework illustrates the interdependent relationships between teacher knowledge and teacher effectiveness.

Figure #1
 A FRAMEWORK FOR DIFFERENTIATION

**RELATIONSHIP BETWEEN TEACHER KNOWLEDGE AND
 TEACHER EFFECTIVENESS**



Powell & Kusuma-Powell, 2002