Chapter 2

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THEORETICAL OVERVIEW

Introduction

Education should include a wide range of learners, learners with special educational needs being one of the densest target groups. Seeking pedagogical support to learners with special educational needs has become a burning topic of discussion among contemporary educational theorists and practitioners. Implementation of an Inclusive Approach to education is accompanied by a series of interrelated topical issues on the levels of pedagogical practice, school administration and academic debate (Guseva and Paulina, 2012). In this point, a traveling around of the Inclusive practices is inevitable to explore appropriate strategies and practices to successfully implement in an Inclusive Classroom set up. The present chapter thus aims at bringing out an account of the theoretical underpinnings for evolving an effective Inclusive approach in order to overcome the exclusion of Learning Disabled from the Inclusive Classrooms.

2.1 Inclusive Education

*Regular schools with this inclusive orientation are the most effective means of combating discriminatory attitudes, creating welcoming communities, building an inclusive society and achieving education for all, moreover, they provide an effective education to the majority of children and improve the efficiency and ultimately the cost-effectiveness of the entire education system.*

-The Salamanca Statement and Framework of Action on Special Needs Education

The term ‘Inclusion’ has been widely accepted as common idiom within today’s education system. The growing number of persons who are excluded from meaningful participation in the social, economic, political and cultural life of their communities is one of the challenging problems the world faces today. Such a
community is neither efficient nor safe. Inclusion is the provision of services to students with disabilities in their neighborhood schools with necessary support services and supplementary aids for both children and teachers. It means meeting the needs of children with disabilities for a free and quality public education in the least restrictive and most effective environment. The aim of inclusion is to prepare students to participate as full and contributing members of the society. Inclusion is not an experiment to be tested but a value to be followed. Education is the right for all children whether they are disabled or not, as they are the future citizens of the country.

The very term “Inclusion” signifies the process of interaction of disabled children and normal children in the same setting. It is a term that is frequently used to describe the right of all students to shared access to the general curriculum. Inclusion is so much more than physical placement of a student with special needs in the general class room.

The term “Special Need Education” (SNE) has come into use as a replacement for the term “Special Education”, as the older one was mainly understood to refer the education of all those children and youth whose needs arise from disabilities or learning difficulties. But marginalization and exclusion of these pupils result in the growth of inferiority complexes among them and their parents/guardians. This leads the vision of “Inclusive Education”. Inclusive Education aims at integrated development of children with special needs and normal children through mainstream schooling. To develop curriculum for special education and its inclusion in general teacher preparation programmes, Rehabilitation Council of India (RCI) made a historic collaboration with National Council for Teacher Education (NCTE) on January 19, 2005 (Sanjeev and Kumar, 2007). Given below are the changing view and historical perspective on special education (Table 2.1)
Table 2.1.

_Historical perspective of special education_

<table>
<thead>
<tr>
<th>Year</th>
<th>Special education movement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1880</td>
<td>In India special education as a separate system of education for disabled children outside the mainstream education system evolved way back in 1880s. The first school for the deaf was set up in Bombay in 1883 and the first school for the blind at Amritsar in 1887.</td>
</tr>
<tr>
<td>1942</td>
<td>The number of schools for the blind increased to 32, for the deaf 30 and for mentally retarded 3</td>
</tr>
<tr>
<td>1950</td>
<td>The concept of integrated education in India has emerged during the mid 1950s</td>
</tr>
<tr>
<td>1960</td>
<td>The Govt. of India designed a scheme of preparing teachers for teaching children with visual impairment</td>
</tr>
<tr>
<td>1971</td>
<td>The planning commission included in its plan a programme for integrated education</td>
</tr>
<tr>
<td>1974</td>
<td>The Govt. launched the Integrated Education for Disabled Children (IEDC) Scheme in December 1974</td>
</tr>
<tr>
<td>1986</td>
<td>The National policy on education, stresses the need for integrating children with special needs with other groups</td>
</tr>
<tr>
<td>1987</td>
<td>Project Integrated Education for the Disabled (PIED) came into existence due to the combined effort of the MHRD and the UNICEF</td>
</tr>
<tr>
<td>1992</td>
<td>Programme of action, stresses the need for integrating children with special needs with other groups</td>
</tr>
<tr>
<td>1995</td>
<td>PWD act 1995</td>
</tr>
<tr>
<td>1997</td>
<td>The philosophy of Inclusive education is added in District Primary Education programme (DPEP)</td>
</tr>
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</table>
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**Theoretical Overview**

<table>
<thead>
<tr>
<th>Year</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>The National Trust Act (National Trust for the welfare of persons with Autism, cerebral Palsy, Mental Retardation and multiple Disability)</td>
</tr>
<tr>
<td>2000</td>
<td>The number of special schools rose to around 3000</td>
</tr>
<tr>
<td>2005</td>
<td>Based on The Salamanca Statement and Framework for Action, for furthering the objectives of Education for all, the human Resource Development minister of India assured in the Rajya Sabha that MHRD has formulated a comprehensive action plan for the Inclusive Education of Children and Youth with Disabilities.</td>
</tr>
<tr>
<td>2009</td>
<td>The Right of Children to Free and Compulsory Education Act, 2009, commonly known as RTE Act, 2009 was finally passed by the parliament on 26th August, 2009.</td>
</tr>
</tbody>
</table>

### Challenged Categories in Inclusive Education

Inclusive Education means that all students in a school, regardless of their weakness in any area, become part of the school community. They are included in the feelings of belonging among other students. In present scenario mainly our country is trying for five category of inclusion.

- Inclusion of Physically Disabled
- Inclusion of Hearing Impaired
- Inclusion of Visually Retarded
- Inclusion of Mentally Retarded
- Inclusion of Learning Disabled

### Benefits of Inclusion for Children with Disabilities

There are many benefits of inclusion for children with diverse abilities. McGregor and Vogelsberg (1998), in comprehensive review of literature list the following benefits.

- Children with disabilities demonstrate high levels of social interaction with non-disabled peers in inclusive settings when compared with segregated settings.
Social competence and communication skills of children with diverse abilities are improved in inclusive settings.

They often have a more rigorous educational programme, resulting in improved skill acquisition and academic gains.

Social acceptance of these children is enhanced by the frequent small group work nature of their instruction in Inclusive Classroom.

Friendships more commonly develop between children with special needs and normal children in inclusive settings.

Children with special needs who are included in regular schools tend to become adults who spend more time in leisure activities outside of the home, spend more time in leisure activities with adults without disability and spend more time in community work settings than do their counterparts educated in segregated settings. (Alpher and Ryndak, 1992).

Graduates from inclusion programmes have been found to earn up to three times to salary of graduates from segregated programmes, and cost half as much as support in the community. (Alpher and Ryndak, 1992)

Inclusion assists in the development of general knowledge for children with special needs. (Davern and Schnorr, 1991).

**Benefits of inclusion for children without disabilities**

In many ways children without disabilities benefit from inclusion. The following have been substantiated in the literature.

The performance of children without disabilities is not compromised by the presence of children with diverse abilities in their classes. (McGregor and Vogelsberg, 1998).

Children without disabilities can benefit from improved instructional technologies in the classroom (Rogan et al., 1995).
Children without disabilities can benefit from increased funds in the classroom, which can be used to enhance the learning of both children with diverse abilities and their peers. (Blackman, 1992)

They also benefit from higher classroom staff ratios (Blackman, 1992).

Children without disabilities involved in peer tutoring situations can benefit from improved self-esteem and mastery of academic content (Alpher and Ryndak, 1992). These children tend to demonstrate improved self-concept, growth in social cognition and the development of personal principles. Furthermore, it has been found that peer tutors demonstrate a higher mastery than do their peers who are not involved as tutors (Alpher and Ryndak, 1992).

Children without disabilities have the opportunity to learn additional skills such as Braille or sign language (Alpher and Ryndak, 1992).

Children without disabilities can learn to value and respect children with diverse abilities in Inclusive Classrooms. They learn to see the disabilities and associated social stigmas when placed in inclusive classes (Alpher and Ryndak, 1992).

**Models of Inclusion**

In response to the call for full inclusion, several alternative service delivery models have been developed and implemented. Each model has its own unique quality, yet there are several common elements among them. One key element, and what proponents believe is paramount to the success of full inclusion, is the collaboration between General and Special education teachers. By sharing responsibilities through team teaching, the two sectors are able to develop a more comprehensive program that could adapt to the needs of all students (Reynolds, Wang, and Walberg, 1987).

**Wang’s Adaptive Learning Environments Model (ALEM)**

One of the most multifaceted programs to integrate special education students into the classroom is Wang’s Adaptive Learning Environments Model (ALEM). This
model was designed to create school learning environments in which all students can learn basic academic skills and increase their confidence in their ability to cope with the social and intellectual demands of school (Wang, Rubenstein, and Reynolds 1985). The ALEM combines a prescriptive learning component consisting of highly structured and hierarchically organized learning activities with an exploratory learning component consisting of a variety of learning activities aimed at increasing schools’ capabilities to accommodate individual learning needs.

The Adaptive Learning Environments Model is designed to provide instruction that is responsive to student needs and to provide school staff with ongoing professional development and school-based program implementation support to achieve student success.

Instruction is based on diagnostic test results and informal assessments by the teacher. Every student is expected to make steady progress in meeting the curricular standards. Learning tasks are broken down into incremental steps, providing frequent opportunities for evaluation.

**Team teaching inclusionary model**

Another model of inclusion that has shown success is team teaching. In this model the general education and special education teachers join together and teach all students in one class as partners. According to Walther (1996), effective co-teaching occurs when the teachers are equal partners. They must both contribute to every phase of the class work, including planning and evaluation. Successful team teaching needs to be effectively planned and supported with needed resource materials. Time is also a key factor. Changing to a team teaching approach does not happen in one year. It is a developmental process that needs adjusting by trial and error.

The team teaching inclusionary model comes with many reported benefits for the teachers and the students, both special and general education. In her longitudinal study on co-teaching experiences, Walther-Thomas (1996) reports that Learning Disabled students benefit by having improved self-esteem and motivation along with
enhanced academic performance. She also reports that general education students increase their academic performance and social skills.

**Strategies Intervention Model (SIM)**

Another highly recognized program that facilitates the inclusion of special education students is the Strategies Intervention Model (SIM). "The model is based on the belief that all students should develop their potential as independent and strategic learners across learning, social, motivational, and executive domains" (Tralli, Columbo, Deshler., and Schmaker, 1996). Directly correlated with this belief is a three step strategy intervention curriculum. The curriculum serves as a support system that helps adolescents with learning disabilities transition into the secondary general education environment.

In response to the demands and expectations the students are taught learning strategies for acquiring, storing, and expressing content objectives. In addition, the special education teachers were responsible for teaching a more comprehensive set of strategy systems to the Learning Disabled population. This allows the Learning Disabled student, who is generally an ineffective learner with poor processing skills, to develop a coping technique by using one or several of these strategies in combination. These strategies are designed to give the students a roadmap he or she can use to successfully meet the demands of learning in secondary classes. The second strategy intervention is aimed at enhancing the teaching routine in the general education classroom. Enhancing the routine entails using graphic organizers, relating information to students’ prior knowledge, and previewing the content before instruction. The third and final intervention strategy is designed to teach social interaction skills and motivational techniques. A specific strategy entitled "Share Behaviors" prepares the student for involvement in team meetings and conferences regarding their education. Students are encouraged to inventory their strengths and assist in their own planning.
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The Strategic Instruction Model is about Promoting Learning Coverage For All Learners. It is supported by Smarter Planning, A Continuum of Action, Teaching Routines, Learning Strategies, and Teaming. It responds to Current Realities, which includes requirements for informed and explicit instruction. Key Components such as Strategic Instruction and Smarter Planning are essential.

Figure: 2.1 Details of Strategic Instruction Model (Source: Google Image)

Circle of Inclusion Model

The "Circle of Inclusion," is the most "personnel-intensive" model of Inclusion. This model is primarily used in the education of very young children (birth to age eight) but includes elements to assist in a student’s transition to other educational or societal environments. The Circle of Inclusion model has been adapted in various settings from Montessori to traditional public elementary settings.

Frequent meetings are held to review the progress and needs of each child in a Circle of Inclusion classroom. The Circle of Inclusion model also assures ample opportunity for the development of social, emotional and interpersonal skills of the disabled student. Another element of this model addresses this social objective. Children are encouraged to work together and teachers "team teach." Everyone is aware of the strengths and weaknesses of others in their classroom. By becoming actively involved with disabled students, typical students and the teaching team can develop an appreciation for and successful methods for optimizing the special students’ abilities.
A Conceptual Model of Differentiated Studies

Theoretical investigations and empirical research resulted in the creation and evaluation of a conceptual model of differentiated studies in basic school for implementation of an inclusive approach: a model of differentiated studies for securing an inclusive approach at the first stage of basic education. This model was developed by Guseva and Paulina (2012). In the proposed model, the inclusive approach is viewed as a manifestation of a sustainable education. The needs of all learners are highlighted in three contexts of a sustainable societal development: legal, social and cognitive. This model of differentiated learning can be used as the grounds for designing school strategies aimed to include learners with special educational needs in the mainstream of first-stage basic education.

Figure 2.2. The conceptual model of differentiated studies for securing an inclusive approach at the first stage of basic education
Source: Guseva and Paulina (2012)

Systematic Assessment for Inclusion: The Saale Model

The SAALE Model (Systematic Approach for Assessing/Accessing the Learning Environment) is a framework for making decisions on how to teach students with special needs and all students served in inclusive setting. This is the cornerstone for creating an Inclusive Classroom. The SAALE Model is a process for Differentiating Instruction to ensure student’s success. The model provides a framework to help educators decide where in the instructional day (or in which
environment) a student is having or will have a mismatch. According to (Wood, 1989), research on the SAALE Model shown that the use of the SAALE process provides significant educational gains in diverse populations. (as cited in Wood, J. W, 2009).

The SAALE Model Process.

According to the SAALE Model, content and students interact in three major environments: The learning Environment, Teaching Environment and the Evaluation and Grading Environment. Each of three environments are ongoing and include technology. At any point a student may experience a mismatch. When a mismatch occurs and is identified using the checklist, the point of interventions is identified and the appropriate research-based strategy is implemented. Understanding the mismatch is crucial when using the SAALE Model. Mismatches are not caused by child or teacher. A mismatch is simply a point where the child cannot succeed because the teacher has expectations that are not compatible with the student’s abilities. Children are not going to adjust to the environment; the environment must be adjusted to the student.

Figure. 2.3 SAALE Model
2.2 Learning Disability and Inclusion

Children with learning disabilities are at a disadvantaged position when compared with children who can cope with the normal learning system. These children have difficulty in learning due to specific breakdown in the learning process involving listening, thinking, perceiving, memory and expression. As this condition does not have visible disability, many such children are considered lazy, unresponsive or uninterested in studies and are subjected to scolding and punishment by teachers and are the butt of teasing by schoolmates. These children usually tend to drop out of school or the school system rejects them, causing concern for the parents. The problem is not a new phenomenon; it is there since the evolution of mankind. A systemic focus was laid on learning disabilities from 60s onwards in the west and some models were developed to take care of the special needs of these children.

Under the Individuals with Disabilities Act of 2004 (IDEA), a “specific learning disability” is defined as follows:

The term "specific learning disability" means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which disorder may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations.

- **Disorders included.** Such term includes such conditions as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia.

- **Disorders not included.** Such term does not include a learning problem that is primarily the result of visual, hearing, or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage.

Learning Disabilities (LD) vary from person to person and encompass a heterogeneous group of disorders. One person with LD may not have the same kind of learning problems as another person with LD. Children with learning disabilities are not “dumb” or “lazy”. In fact they usually have average or above-average intelligence. Their brain just process information differently. Puzzling is a term teachers sometimes
use to describe a student with learning disability. They have hidden disabilities because their strengths in some areas often mask or hide learning problems in others. They may not learn the same way or as easily as their peers. These students are continually frustrated in their learning endeavors by the difficulty of the assignments given them, and misbehaviour is often the result. Furthermore, students with learning disabilities may be ridiculed by their peers; they are often the victims of overt bias, ignorance, and outright hostility from peers. Students with learning disabilities have diverse difficulties, often hidden or subtle, that affect learning throughout life. Their difficulties cannot be explained by other handicapping conditions or environmental influences. Learning disabilities are lifelong. Their impact may vary with the changing demands at different stages of life.

The actual number of children who have a learning disability is difficult to obtain because no national census has been taken. According to The National Council of Educational Research (NCERT) in New Delhi, there has been no systematic collection of data and they follow the figures generally quoted by international agencies. Figures quoted by American educators place the number at 10% – 12%.

Types of Specific Learning Disabilities

There are various types of learning disabilities. The most common types of learning disabilities are Reading Disorder, Writing Disorder, Spelling Disorder and Arithmetic Disorder.

Dyscalculia (Arithmetic Disorder)

Dyscalculia is a term referring to wide range of life-long learning disabilities involving math. These disabilities affect a person’s ability to understand and/or manipulate numbers, perform mathematical operations and/or conceptualize numbers themselves as an abstract concept of comparative quantities. Diagnostic symptoms of Dyscalculia include difficulties with the following tasks (Pierangelo, 2008).

- Organizing problems on the page, keeping numbers lined up, following through long division problems
- Understanding and doing word problems
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- Putting language to math processes
- Abstract concepts of time and direction
- Recalling schedules and sequences of past or future events
- Strategic planning for games such as chess
- Being on time
- Mentally figuring change due back or the amounts to pay for tips, taxes etc.
- Maintaining a sense of direction
- Grasping concepts of formal music education

Difficulties in mathematics are often major obstacles in the academic paths of students with learning disabilities, as they frequently continue to cause problems throughout high school. As with reading and writing, explicit, systematic instruction that provides guided, meaningful practice with feedback usually improves the math performance of students with learning disabilities.

Dysgraphia (Writing Disorder)

Dysgraphia is a neurological disorder characterized by writing disabilities. Specifically, the disorder causes a person’s writing to be distorted or incorrect. Diagnostic symptoms of dysgraphia include the following (Pierangelo, 2008).

- Generally illegible writing (despite appropriate time and attention given the task)
- Cramped or unusual grip, especially the following:
  - Holding the writing instrument very close to the paper
  - Holding thump over two fingers and writing from the wrist
  - Strange wrist, body, or paper position
  - Talking to self while writing or carefully watching the hand that is writing
- Slow or labored copying or writing, even if the result is neat and legible

Students hand writing problems can be arise from their lack of fine-motor coordination, failure to attend task, inability to perceive and/remember visual images accurately, or inadequate handwriting instructions in the class room. (Pierangelo and Giuliani, 2008).

Dyslexia (Reading disorders)
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Dyslexia is the learning disability associated with reading. According to the International Dyslexia Association (2007), diagnostic symptoms of Dyslexia vary based on the age and grade level of the child. Listed below are the possible diagnostic symptoms of Dyslexia for preschoolers to adults.

- Has trouble learning the alphabet, rhyming words or connecting letters to their sounds.
- Makes many mistakes when reading aloud and repeats and pauses often
- Does not understand what is read
- Has exceptional difficulty with spelling
- Learns language late and has limited vocabulary
- Has trouble remembering the sounds that letters make or hearing slight differences between words
- Confuses math symbols and misreads numbers
- Cannot retell a story in order (what happened first, second, third)
- Does not know where to begin a task or how to go on from there

Dysorthographia (Spelling Disorders)

Dysorthographia is the learning disability associated with spelling. Spelling is the ability to use letters to construct words in accordance with accepted usage. Diagnostic symptoms of dysorthographia include the following. (Pierangelo and Giuliani, 2008)

- Addition of unneeded letters
- Omission of needed letters
- Reversals of vowels
- Reversals of syllables
- Phonemic spelling of non phonemic words
- Difficulty in understanding the correspondence between sounds and letters
- Spelling problems, like reading problems, originate with language learning weaknesses.

Effective Teaching Strategies for Students with LD
Effective strategies for students with LD often emphasize all three of the following components

1. Academic Intervention
2. Behavioural intervention
3. Classroom accommodation

1. **Academic Intervention**

*Prepare students for Upcoming Lessons*

Research suggests that students with LD learn best with a carefully structured academic lesson-one where the teacher explains what he or she wants students to learn in the current lesson and places these skills and knowledge in the context of previous lessons. A number of teaching related practices have been found useful in facilitating this process:

- Discuss and establish learning expectations
- Discuss and establish behavioural expectations
- Offer an advance organizer
- Take time to review previous lessons
- Be very clear on materials needed
- Make instructions, choices, and scheduling as easy as possible

*Conducting Effective Lessons*

The following set of strategies may assist teachers in conducting effective lessons

- Remember that reliability and predictability are essential
- Try to get the student participate in the classroom
- Check student performance
- Try to ask probing questions
- Assess students on an ongoing basis
- Help student correct their own mistakes
- Help students focus
- Provide follow-up directions-oral and written directions
- Reduce the noise level
- Simplify work into smaller units
- Emphasize key points
• Avoid “high-pressure” and/or timed tests
• Provide group work

In conclusion, the most effective manner in which teachers can conduct lessons for students with LD is by periodically questioning student’s understanding of the material, probing for correct answers before calling on other students, and identifying which students need additional assistance.

**Concluding Lessons**

Effective teachers of students with LD conclude their lessons by providing advance warning that the lesson is about to end, checking the completed assignments of at least some of the students with LD, and instructing students how to begin preparing for the next activity.

• Give advance notice
• Go over assignments
• Be sure to take some time to preview the next lesson.

**Individualizing Instructional Practices**

Effective teachers of students with LD individualize their instructional practices in accordance with different academic subjects and the needs of their students within each area. This is because students with LD have different ways of learning and retaining information, not all of which involve traditional reading and listening. Effective teachers first identify areas in which each student requires extra assistance and then use special strategies to provide structured opportunities for the child to review and master an academic lesson that was previously presented to the entire class. Strategies that may help facilitate this goal include the following (grouped by subject area).

**Language Arts and Reading Comprehension**

To help students with LD who are poor readers improve their reading comprehension skills, the following practices would help.

• Provide silent reading time
• Provide follow-along reading
• Provide partner reading activities
• Teach the student how to make a story board
• Schedule storytelling
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• Keep a word bank
• Play board games for reading comprehension
• Schedule computer games for reading comprehension
• Utilize recorded books
• Have “backup” materials for home use
• Provide summary materials

Writing

In composing stories or other writing assignments, students with LD benefit from the following practices:

  Provide standards for writing assignments
  Teach students to recognize parts of a story
  Establish a post office
  Teach visualization
  Require students to proofread their own work

Spelling

To help students with LD who is poor spellers, the following techniques have been found helpful:

  • Use everyday examples of difficult spelling words
  • Assign frequently used words
  • Use partner spelling activities
  • Use manipulative
  • Use colour-coded letters
  • Use movement activities
  • Use word banks

Handwriting

Students with LD who have difficulty with manuscript or cursive writing may benefit from their teachers’ use of the following instructional practices:

  • Provide individual chalkboards
  • Provide quiet places for handwriting
  • Teach spacing words on a page
  • Have the student use special writing paper

Math Computation
Numerous individualized instructional practices can help students with LD improve their basic computation skills. The following are just a few:

- Teach students to recognize patterns in math
- Partner students for math activities
- Review and be sure students understand math symbols
- Teach mnemonics for basic computation
- Use real-life examples of money skills
- Use colour-coded arithmetic symbols
- Use calculators to check basic computation
- Provide board games to practice basic computation
- Schedule computer games to practice basic computation
- Have student perform magic minute” drills
- Re-read the word problem
- Use clue words to solve word problems
- Use guided question for word problems
- Allow calculators to check word problems

Organizational and Study Skills Useful for Academic Instruction of students with LD

Many students with LD are easily distracted and have difficulty focusing their attention on assigned tasks. The following practices can help to improve their organization of their home-works and other daily assignments:

- Designate one teacher as the student’s advisor or coordinator
- Provide assignment note book
- Use colour-coded folders
- Assign students homework partner
- Periodically have students clean out desks and book bags
- Use visual aids as reminders of subject material.

Assigning Students with LD with Time Management
Students with LD often have difficulty finishing their assignments on time and can thus benefit from special materials and practices that help them to improve their time management skills. These include the following:

- Use a clock or wristwatch
- Use a calendar
- Practice sequencing activities
- Create a daily activity schedule

**Helpful study Skills for students with LD**

Students with LD often have difficulty in learning how to study effectively on their own. The following strategies may assist LD students in developing the study skills necessary for academic success:

- Adapt worksheets
- Teach students how to use Venn diagrams
- Teach note-taking skills
- Provide students with a checklist of frequent mistakes
- Provide students with a checklist of homework supplies
- Teach students about the importance of an uncluttered workspace.
- Track the progress of homework assignments.

2. **Behavioural Interventions**

The second major component of effective instruction for students with LD involves the use of behavioural interventions. Students with LD often act immurely, exhibiting behavior that resembles that of younger students, and have difficulty learning how to control their impulsiveness and hyperactivity.

Effective teachers in the inclusion classroom use a number of behavioural intervention techniques to help students learn how to control their behavior. The most common form of verbal reinforcement is praise that is given to a student when beginning and completing an activity or exhibiting a particular desired behavior. The following strategies provide some guidance:

- Define the appropriate behavior while giving praise.
- Provide praise immediately
• Vary the statement given as praise
• Be consistent and sincere with praise
• Selectively ignore inappropriate behavior
• Remove nuisance items
• Provide calming manipulative
• Allow for “escape valve” outlets
• Provide activity reinforcement.
• Hold parent conferences
• Utilize peer mediation.

For many students with LD, functional behavioural assessments and positive behavioural interventions and supports, including behavioural contracts and management plans, tangible rewards, or token economy systems, are helpful in teaching them how to manage their own behavior.

3. Classroom Accommodations

The third component of a strategy for effectively educating students with LD involves physical classroom accommodations. Students with LD often have difficulty adjusting to the structured environment of a classroom, determining what is important, and focusing on their assigned work. They are easily distracted by other students or by nearby activities in the classroom. As a result, many students with LD benefit from accommodations that reduce distractions in the classroom environment and help them to stay on task and learn. Certain accommodations within the physical and learning environments of the classroom can benefit students with LD.

Special classroom seating arrangements for LD students

Three special seating assignments may be especially useful:

• Seat the student near the teacher
• Seat the student near a student role model
• Provide low-distraction work areas

Instructional Tools and the Physical Learning Environment

Skilled teachers use special instructional tools to modify the classroom learning environment and accommodate the special needs of their students with LD. The following Tools and techniques may be helpful:

• Pointers
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- Egg timer
- Classroom lights
- Music
- Proper use of furniture.

One of the components of successful inclusion is the degree to which the student with a disability feels part of the general education classroom. Teachers may use many strategies to help the student achieve a sense of belonging to the class and school.

2.3 Differentiating Instruction: Responding to the needs of different learners in Inclusive Classrooms

Differentiating Instruction is a philosophy and an approach in which teachers and school communities actively work to support the learning of all students. Differentiating Instruction is an instructional design model focusing on who, where, and how one teaches, as opposed to what one teaches. The goal of Differentiating Instruction is to ensure that educators focus on the processes and procedures that can lead to effective learning for all students through approaches that can be adapted to the diverse needs of students within a classroom (Tomlinson and McTighe, 2006). The intent, then, is to maximize student growth by responding to the students at their individual levels and supporting the students through the learning process. A hallmark of Differentiating Instruction is the use of flexible grouping strategies allowing for fluid group configurations that can change over time to accommodate individual student differences in ability, interest, and learning style preference. This strategy allows teachers to be proactive and respond effectively to changing student needs while concurrently being mindful of each student’s learning process (Tomlinson, 2001).

In a differentiated classroom all aspects of the environment are designed to provide each student with the most positive, productive and nourishing learning experiences possible. Affective and physical environments are consciously established and maintained. Like a Chef, the teacher chooses the perfect ingredients to make learning a treat while nurturing each student’s unique needs and tastes.

Differentiating Instruction is:
• **Student Centered.** Teachers differentiate instruction to provide appropriately challenging learning experiences for all their students. They understand the need to help students take increasing responsibility for their own growth.

• **Rigorous.** Students are provided with challenging instruction to motivate and improve their learning. Students are challenged and engaged in content that conveys depth and breadth.

• **Relevant.** Instruction is focused on essential learning. When appropriate, students make choices about what they will learn and how they will show what they have learned.

• **A BLEND of whole-class, group, and individual instruction.**

In a differentiated classroom:
1. Students come together as a whole group to begin a lesson.
2. Students move out to pursue learning in small groups or individually.
3. Students come back together to share, make plans for additional investigations.
4. Students move out again for work.
5. Students come together again to share or review, and so on. (Tomlinson, 2001).

A differentiated classroom is marked by a repeated rhythm of whole-class preparation, review, and sharing, followed by opportunity for individual or small-group exploration, sense-making, extension, and production.
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Figure 2.4  The flow of Instruction in a Differentiated Classroom

1. Teacher and the whole class begin exploration of a topic or concept

2. Students engage in further study using varied materials based on readiness and learning styles

3. Students and teacher come together to share information and pose questions

4. Students work in varied assigned tasks designed to help them make sense of key ideas at varied levels of complexity and varied pacing

5. The whole class reviews and extends their study through sharing

6. In small groups selected by students they apply key principles to solve teacher-generated problems related to their study

7. The whole class is introduced to the skills needed later to make a presentation

8. Students self-select interest areas through which they extend their understanding

9. The whole class listens to individual study plans and establishes baseline criteria for success

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School of Pedagogical Sciences, Mahatma Gandhi University
Differentiation Models

Several attempts have been made to provide a clear succinct picture of differentiation. As a result an academic purview of differentiation models have been evolved. Gregory and Chapman (2002), Heacox (2002), McCarthy and McCarthy (2006), Smutny and Fremd (2004), Tomlinson (1999), Sprenger (2003) have extended and enhanced our understanding of differentiation. Given below are the changing view and enduring perspectives on differentiation (Table 2.2)

Table 2.2.

Differentiation Models

<table>
<thead>
<tr>
<th>Source</th>
<th>Differentiation for:</th>
<th>Key concepts</th>
<th>Planning Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Multiple Intelligences</td>
<td>Use multiple instructional strategies</td>
<td>Recognizing and honoring diversity</td>
</tr>
<tr>
<td></td>
<td>Personal interests</td>
<td></td>
<td>Assessment</td>
</tr>
<tr>
<td>Heacox (2002)</td>
<td>Ability, using Bloom’s Taxonomy</td>
<td>Flexible grouping</td>
<td>Instructional strategies</td>
</tr>
<tr>
<td></td>
<td>Multiple intelligences</td>
<td>Tiered Assignments</td>
<td>Numerous curriculum approaches</td>
</tr>
<tr>
<td>Smutny &amp; Frem (2004)</td>
<td>Abilities</td>
<td>Considering:</td>
<td>Setting goals for each student, designing instruction to meet their needs, identifying evidence of success, and planning assessment strategies</td>
</tr>
<tr>
<td></td>
<td>Cultural traditions and strengths</td>
<td>Child</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Learning Preferences</td>
<td>Content</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Special challenges</td>
<td>Process</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Product</td>
<td></td>
</tr>
</tbody>
</table>
### Theoretical Overview

<table>
<thead>
<tr>
<th>Sprenger (2003)</th>
<th>Sensory pathways, Bloom’s Taxonomy</th>
<th>Differentiating Instructional strategies for students with strong visual, auditory, and kinesthetic memory</th>
<th>Planning for all three pathways, using activities at all levels of Bloom’s Taxonomy for each pathway.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tomlinson (1999)</td>
<td>Readiness, Interest, Learning Profile</td>
<td>Modify content, Process or product based on readiness, interest, and/or learning profile</td>
<td>Differentiate What (content, process, product, learning environment)</td>
</tr>
<tr>
<td>Personality type</td>
<td>Personality type Preferences as an organizing theory for numerous learning styles, interests, multicultural considerations, classroom management, study habits, thinking and rigor</td>
<td>Students have natural psychological preferences for how they are energized, take in information, make decisions, and approach life</td>
<td>Plan for four learning styles: Extraversion and Sensing, Introversion and Sensing, extraversion and Intuition, Introversion and Intuition</td>
</tr>
</tbody>
</table>

The perceived and known difficulties associated with Differentiating Instruction within a classroom of students with competing instructional priorities necessitates a model of differentiation that can assist teachers in understanding how to think about and organize their own implementation of Differentiating Instructional techniques. Tomlinson’s exhaustive work in this field has resulted in the conception of such a framework. Figure 1 displays Tomlinson’s framework for Differentiating Instruction (Tomlinson, 1999).
Differentiating Instruction

Is a teacher’s response to learners’ needs

Guided by general principles of differentiation such as

- Respectful task
- Flexible Grouping
- Ongoing assessment

Teacher’s can differentiate

According to student’s

- Readiness
- Interests
- Learning Profile

Through a range of instructional and management strategies such as

<table>
<thead>
<tr>
<th>Multiple Intelligences</th>
<th>Tiered lessons</th>
<th>Tiered Products</th>
<th>Interest Centers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jigsaw</td>
<td>Tiered Centers</td>
<td></td>
<td>Interest Groups</td>
</tr>
<tr>
<td>Graphic organizers</td>
<td>Learning Contracts</td>
<td></td>
<td>Varied Homework</td>
</tr>
<tr>
<td>Varying texts</td>
<td>Small group Instruction</td>
<td></td>
<td>Compacting</td>
</tr>
<tr>
<td>Anchor activities</td>
<td>Group investigation</td>
<td></td>
<td>Varied Journal prompts</td>
</tr>
<tr>
<td>Literature circles</td>
<td>Independent Study</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Figure 2.5 Illustration of Tomlinson’s Model of Differentiating Instruction.*
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General Principles of Differentiation

Teachers are guided by general principles of differentiation such as:

- Respectful task
- Flexible Grouping
- Ongoing assessment

Figure 2.6 General Principles of Differentiating Instruction

Respectful Tasks

To differentiate instruction, teachers must be respectful of each student’s learning needs during the instructional process. Tomlinson and Allan (2000) stress that it is important that teachers present all students with activities that are equally interesting and engaging and that provide students with equal access to essential knowledge and skills, regardless of the student’s level. A teacher does not have to provide different tasks to each student but just engage in enough instructional flexibility to vary the task complexity, student grouping, and learning modes to meet each student’s needs during the activity.

Flexible Grouping

Like providing respectful tasks, a teacher can respond to each learner’s needs efficiently through flexible grouping strategies. Attending to this principle can afford students a variety of learning opportunities in multiple different settings (Tomlinson and Allan, 2000). To use this strategy effectively, teachers must plan a variety of grouping arrangements for each student. Differentiated classrooms following this technique will include whole-class, small-group, and individualized instruction arrangements. Grouping might be random at times, self-chosen, or students might work individually.

Ongoing Assessment and Adjustment

An essential element of effective differentiation is knowing when to differentiate. Frequent assessment of students’ understanding and learning acquisition is necessary to this process. In a differentiated classroom, the teacher expects there will be individual differences and that these differences will change over time. Teachers check for these differences through ongoing assessment practices and then...
use these results to modify their instructional tactics (Tomlinson & Allan, 2000). In a differentiated classroom, assessment does not need to be formal; a teacher can use anything students say or produce as evidence of their knowledge of a taught skill and then respond to those students with instruction that addresses their specific needs.

**Curriculum Elements that Teachers Can Differentiate**

The second tier of Tomlinson’s framework for Differentiating Instruction illustrates that when guided by the general principles of differentiation, educators can differentiate three main parts of a curriculum: the content, the process, and the product.

![Figure 2.7. Curriculum Elements that Teachers Can Differentiate](image)

**Content**

Content is what a teacher wants students to learn, or how students gain access to what they need to learn. It is the essential knowledge, skills, facts, concepts, principles, and generalizations that the teacher conveys to students through instruction. In many cases, this might remain constant for all students, even in a differentiated classroom. What differs is the process by which students in a differentiated classroom gain access to this content. Teachers can differentiate access to content in a variety of ways (Tomlinson, 1999). Tomlinson and Allan (2000) suggest some of the following for how a teacher might vary access to content:

- Through using manipulatives with some, but not all, learners;
- Through using texts written at different reading levels, covering the same material;
- By presenting information in both a “whole-to-part” approach with an emphasis on larger concepts and a “part-to-whole” approach with an emphasis on basic skills;
- By using a variety of grouping arrangements;
- Through re-teaching some students while exempting others from the re-teaching;
By using a variety of modalities (text, computer programs, tape recorders, and videos) to present the same information to students with different needs.

**Process**

The curriculum process includes the activities the learner engages in to understand the essential ideas and information from the curriculum (Tomlinson, 1999). An effective activity has a clear learning goal and prompts students to use certain skills to arrive at an understanding of an essential concept. As Tomlinson and Allan (2000) suggest, teachers can differentiate the process or activity the learner engages in through a variety of ways, including:

- Providing varied versions of the activity at differing degrees of difficulty;
- Providing varied versions of the activity corresponding to differing student interest;
- Providing different amounts/kinds of teacher support for the task to each student;
- Allowing students to use different modalities of expression of what they have learned, such as an essay, cartoon, letter, diagram, or model, while the learning goals remain constant across versions.

**Product**

Products are the ways in which a student can express what he or she has learned from the curriculum or an extended course of study (Tomlinson, 1999). A product could be a portfolio of work, an exhibition that draws on a variety of skills and knowledge at once to demonstrate comprehensive knowledge of a topic, or a written test. The best products will allow students to demonstrate everything they have learned, apply what they have learned, require critical and creative thinking, and still extend their understanding and learning. Teachers can differentiate products through a variety of methods, including (Tomlinson and Allan, 2000):

- Allowing students to design their own products to demonstrate essential goals;
- Allowing students to express what they have learned in multiple formats;
- Allowing students to work in a variety of grouping arrangements to produce the product;
- Encouraging the use of a variety of different resources to produce the product;
Providing different degrees of difficulty to the product assignment;
The use of a variety of different kinds of assessments;
The use of different rubrics to demonstrate individual growth as well as whole-class growth.

Student Characteristics for Which Teachers Can Differentiate

- **Readiness**
  Responding to a learner’s readiness level is rooted in the social constructivist learning theories of Lev Vygotsky. Vygotsky (1978) proposed the theory that individuals learn best based on their readiness to do so. Vygotsky called this a learner’s Zone of Proximal Development (ZPD), describing it as the point in the learning process at which an individual can no longer function successfully without scaffolding and support. It is at this point in which new learning will take place, and it is the teacher’s goal to lead a student to this point while extending the student’s level of independent work. If the work is above or below a student’s ZPD there will be no growth in learning. Differentiating Instruction allows teachers to teach to each student’s ZPD. In classrooms where teachers do not Differentiate Instruction or only include minor modifications to vary the instruction at different readiness levels, it is likely that the instruction will fall short for many of the students because it is outside of their ZPD (Tomlinson, et al., 1994). Teachers can Differentiate Instruction based on student readiness in a variety of ways (Tomlinson and Allan, 2000):
  - By adjusting the difficulty of a task to provide adequate challenge;
  - By adding scaffolding, manipulatives, or models to a task to support students where they need extra support;
  - By increasing or decreasing the student’s familiarity with a task based on the student’s proficiency level of the skills required for the task; and
• By varying direct instruction by small-group need.

• **Interest**

Students come to the classroom with varying interests as well, which might affect how and what students learn. Research has shown that motivation connects to students’ interest level and, when tapped, can help to advance the learning process (Tobias, 1994). Teachers can modify instruction to enhance student motivation effectively and thereby indirectly impact students’ underlying interest levels. Tomlinson and McTighe (2006) further note that when teachers address and differentiate instruction based on student interest level within the classroom, students are more likely to become independent learners. As Tomlinson and Allan (2000) suggest, there are numerous methods by which a teacher can Differentiate Instruction based on students’ interest:

- Using individuals with prior knowledge to act as mentors for students in an area of shared interest;
- Providing students with a variety of ways to explore a topic or demonstrate learning;
- Providing access to a range of materials and technologies;
- Allowing students to choose tasks and products including student-designed options;
- Encouraging students to apply concepts to topics in their interest areas.

• **Learning Profile**

A student’s learning profile is the manner in which that student learns best or most efficiently (Tomlinson and McTighe, 2006). Factors such as learning style, intelligence, gender, and culture could contribute to the student’s overall profile and create individual differences among students (Tomlinson, 2003). Attending to these differences by Differentiating Instruction with a student’s learning profile in mind leads to improved achievement. Teachers effectively modifying their instruction based on the variety of student learning profiles within their classroom provide students with a tool to take advantage of their strengths and minimize their weaknesses. Tomlinson and Allen (2000) suggest the following ideas to assist teachers in Differentiating Instruction based on student’s learning profile:
Providing flexible learning environments and options;

Presenting information through multiple modalities, including auditory, visual, and kinesthetic;

Encouraging students to explore information through multiple modalities, including auditory, visual, and kinesthetic;

Allowing students to work alone or with peers;

Providing students with a variety of learning experiences, including competitive, cooperative, and independent;

Balancing multiple perspectives on a topic;

Giving students authentic learning environments in different intelligence and interest areas.

**Instructional and Management Strategies Teachers Can Use to Differentiate Instruction**

Instructional strategies are the methods by which teachers can deliver content, process, and products. Figure 2.9 delineates examples of the types of instructional strategies or tools that teachers can use to manipulate curriculum elements in a differentiated classroom. It is up to the individual teacher to determine the appropriateness and timing of different strategies depending on the needs of the students in the classroom. Similarly, the strength of the teacher determines the success of a strategy and the ability to use multiple strategies simultaneously (Tomlinson, 1999). In a classroom of students with diverse abilities, the teacher who can reach out to multiple students through applying a variety of strategies concurrently is likely to be more effective than the teacher who applies one strategy with all learners, regardless of their abilities. The strategies listed in Figure 2.9 are some examples that can also help a teacher to Differentiate Instruction with respect to the student variables of readiness, interests, and learning profile.
Multiple Intelligences  Tiered lessons  Interest Centers  
Jigsaw  Tiered Products  Interest Groups  
Graphic organizers  Tiered Centers  Varied Homework  
Varying texts  Learning Contracts  Compacting  
Anchor activities  Small group Instruction  Varied Journal prompts  
Literature circles  Group investigation  Independent Study  

Figure 2.9. Examples of instructional and management strategies for Differentiating Instruction.

Tomlinson’s framework of Differentiating Instruction (Figure) provides educators with a method for conceptualizing the process of Differentiating Instruction.

Figure 2.10 Tomlinson’s framework of Differentiating Instruction.
Source: Google Image
2.4 Differentiating the Learning Journey with Inclusive Strategies for Standards-Based Learning that Benefit the Whole Class

The success of each (differentiation strategy) depends on the needs of the students, the teaching style and skill of the instructor, and the objectives of the educators making instructional decisions in response to state and district learning standards. The strategies of differentiation are interdependent. Below are some of the strategies that can be successfully implemented in a differentiated Inclusive classroom.

- **Curriculum Compacting** - A process of compressing the required curriculum into a shorter time period so students who master the basic content faster than others can use the time to do alternative activities. When paired with pre-assessment, it allows the teacher to find out what students already know and not re-teach it to them; find out what students don’t know, and make sure they learn it; and to use the time that is saved for interesting, creative, and challenging activities.

- **Flexible Grouping** - Teachers initiate short-term grouping and regrouping of students in response to instructional objectives, demands of the task, and student’s needs: a fluid composition of groups characterized by continual regrouping of students according to skill, readiness, acceleration, cooperative task, interest, learning style, and socialization.

- **Learning Centers or Stations** - A physical area of the classroom where students work with an organized set of content-related activities and materials that focus on important learning goals, encourages high-level thinking, and accents content, product, and process skills.

- **Learning Centers (Student Developed)** - Through students’ working in learning centers, experience is gained in the process and products of centers, allowing for the creation of student-developed centers that change as different students create additional products and for peer participation in student’s learning.

- **Open-Ended Tasks** - Flexible learning activities determined by the teacher signaling that there is more than one way to approach the task and that more
than one correct response is possible, encouraging responses with multiple correct ideas at different levels of complexity and understanding.

- **Pre-assessment** - Guides teachers’ preparation of student-appropriate instruction, responds the pace and level of students, and accommodates students’ learning profiles; enables teachers to make informed decisions about students’ learning which in turn enable students to continue learning.

- **Product Options** - Products demonstrate and extend student learning as a result of content and process; learning tasks need to encourage variety in the types of products assigned.

- **Research and Independent Study** - Develops from students’ interests and responds to the unanswered questions typical of highly-able learners; requires personal interpretations and responses rather than reporting information already in print; is student-interest based, is student-directed, has student-controlled parameters, has investigations of real problems, and is dependent upon skills.

- **Students as Producers** - Students become Investigators with a producers (teacher determines content area, concepts and skills; student determines format of response; evidence of understanding is beyond factual knowledge) rather than consumers (using up the tasks that teachers prepare; teacher sets all parameters) attitude.

- **Students’ Self Assessment** - Students are partners in assessment, routinely analyzing their achievements and works-in-progress; students monitor their changes as learners and set goals for continued achievements; Rubrics are effective self-assessment tools.

- **Thinking and Inquiry** - Teachers use questioning techniques to structure and focus students’ high-level thinking; teachers guide students into reasoning and problem solving as they explore multiple contents.

- **Tiered Instruction** - Provides teachers with a means of assigning different tasks within the same lesson or unit (content is the same but the process and/or the products vary according to level of skill attained); tasks will vary according to readiness, interest, and learning profile.
Some more suggested teaching learning strategies promoting Differentiation and their significant aspects are described in Table 2.3

Table 2.3.

*Promotion of Differentiation through Prominent Strategies*

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Rationale for Use</th>
<th>Guidelines for Use</th>
</tr>
</thead>
</table>
| **Choice Boards** - Choice boards and learning menus outline a variety of instructional options targeted towards the learning goals. Students are able to select the choices, which most appeal to them. | - Allows student choice, and taps into student interest.  
- A way to empower students, the teacher directs the menu process, but the student is given control over his/her choice of options, order of completion.  
- Can be differentiated by readiness, and according to student interest. | - Ensure that the activities vary in content, process, and product.  
- Check-in with students periodically  
- Require students to keep logs of their progress.  
- Include choices that reflect a range of interests and learning preferences.  
- Guide students in the choice of activities so that they are challenged, but not frustrated.  
- Provide clear instruction on the use of choice boards. |
| **Web Quests.**  
The Web Quest is a teacher-designed Internet lesson developed with specific learning goals to give individuals or small groups of students the opportunity to use research, and develop problem-solving skills. | - Support students in the research process and problem solving.  
- Encourages independent learning. | - Provide specific and relevant Internet links for students  
- Develop guidelines for students. |
### Anchor Activities
Activities that students can do by themselves if they finish work before their classmates. Activities include reading a book-of-choice, writing in their journals, keeping learning logs, using graphic organizers.

- Activities can be varied to support student readiness or learning preferences.
- Typically, students can complete the activities at their own desks or in the quiet corner.
- The activities should be connected to the objectives, the topics or the themes.
- Post a list of acceptable anchor activities in the classroom.
- Make sure that students know that their primary work is their class work, not the anchor activities.

### Tiered Assignments
A teacher uses varied levels of activities to ensure that students explore ideas at a level that builds on prior knowledge and promotes continued growth. Students use varied approaches to exploration of essential ideas.

- Blends assessment and instruction.
- Allows students to begin learning where they are.
- Allows for reinforcement or extensions of concepts and principles based on student readiness.
- Ensure that the task is focused on the objective.
- Use a variety of resource materials of differing levels of complexity, abstractness, etc. to ensure appropriate challenge.

### Multiple Levels of questions
The teacher adjusts the types of questions and the ways in which they are presented based on what is needed to advance problem solving skills and responses.

- Address student readiness and learning preferences.
- Ensures that all students will be accountable for information and thinking at a high level and that all students will be challenged.
- All students benefit from this strategy because all can benefit from a wide range of questions and responses.
- Example: The teacher prepares a list of questions about a topic that the whole class is studying. During a discussion, the teacher asks initial questions to specific students, based on readiness.
- Use 3-5 seconds of wait time before accepting student answers.
- Adjust the complexity, abstractness, type of response necessary.
- If appropriate, give students a chance to talk to partners or write down their answers before responding.
- Encourage students to build upon their own answers and the answers of other students.
- Ask follow-up probing questions to challenge students' thought process.
2.4.1 Harmonizing Differentiating Instruction through Learning Stations

Learning stations or Learning centers are designated areas of the classroom where students can work on different tasks within a subject area independently or in small groups. Learning stations become particularly useful in situations where students differ in the level of ability or knowledge they bring to a subject. Teachers create a learning sequence or journey with each station engaging students at more challenging level-through materials, creative catalysts and questioning. Students move from one activity to the next as they gain skill and mastery rather than being locked into any particular ‘level’. Teachers can create as many or as few stations as they deem necessary for the different ability and achievement levels of their students. Because the learning station is student centered rather than teacher centered, it is conducive to individualized learning. Learning becomes more meaningful and challenging when each student competes only with himself or herself. Students explore, estimate, experiment, question and hypothesize through learning station activities. Stations create flexibility in the curriculum that gives children the freedom to choose the level of challenge they feel ready for as well as materials they can use to process and understand new concepts.

Characteristics of Learning Centers

There is no one definition of the learning center but the “catch phrase” often used to describe all learning centers is SELF DIRECTION. All learning centers are designed so that the student can direct most of his or her own learning. Learning centers must possess certain characteristics in order to promote self-directed learning. These characteristics allow the learner to progress through activities successfully without too much intervention.

1. Clearly-Stated Directions
   Instructions must be easy to understand and comprehensive enough to allow students to proceed without consulting the teacher.

2. Clearly-Stated Objectives
   Students need to have a clear idea WHY they are doing a given activity. When the desired outcome is clear in one’s mind, one is more...
likely to proceed through an exercise in an organized and purposeful manner. The successful completion of the activity is more likely.

3. **Multi-Level Activities**

   It is imperative that all learning centers contain activities that vary in levels of difficulty. A main objective of learning centers is to allow students to progress at their own speed and attain mastery before moving onto other activities.

4. **Self-Checking**

   Answers to activities in learning centers should be close at hand. When students evaluate their own work, they may be more motivated to find out where they went wrong and work on remedial exercises which will help them master the objectives.

5. **Options for Group work**

   Students working in groups tend to get more involved in the activities at hand because there are opportunities for discussion and assessing fellow students.

6. **A Variety of Manipulative and Paper/Pencil Activities**

   Learning center should give the student the option of participating in “quiet – time” paper/pencil activities, group discussions, games and role-playing and creative activities including art and music activities.

7. **Self-Pacing**

   Students can work on various activities tailored to their own needs and interests at their own pace.

8. **Structuring**

   There is a careful organization and structure to the learning-centered classroom. Teachers make the optimal use of the facilities available to them.

9. **Blending attitude and System**

   Learning center teaching displays more an attitude on the part of the teacher than a system of teaching.
10. Adapting

Learning center is an adaptable instructional tool. Teachers have the option of structuring the learning environment that suits them and their learners.

Purpose of the Learning Center

The teacher should have clear purpose for developing the center in his or her mind. Centers may be developed for one or a combination of many general purposes. These include the purposes, goals and objectives identified in the literature by Waynant and Wilson (1974)

Introduce New Learning

A learning center which has detailed instructions, a comprehensive display of materials, a variety or sequential activities and closely monitored evaluation scheme is an appropriate technique for introducing new information.

1. Reinforce Previous Learning

The learning center is an excellent review technique. Students can complete a wide range of activities in order to identify their strengths and weaknesses. Students can, then, select appropriate activities to help strengthen their individual areas of difficulty. Learning center in order to be effective must include an assortment of activities appropriate to different levels of development and diverse learning styles.

2. Stimulate or Extend Interests

Learning centers are ideal tools for allowing students to go beyond the knowledge of the normal classroom lesson particularly if the student is interested in pursuing knowledge further. Furthermore, by providing a variety of activities revolving around a specific topic, the student who is not so interested is more likely to become motivated and more interested in the topic.

3. Obtain Diagnostic Information

Activities can be developed so that the teacher can keep a very close eye on student achievements and areas of difficulty. Students can also
be given opportunity in the learning center to expand and enrich mastered knowledge and skills and work to improve areas of difficulty at his or her own speed.

4. **Develop Skills**

To develop information – process skills, decision-making and inquiry skills, creative problem solving skills, library and information-retrieval skills using print and non-print media and organizational skills in students is another vial purpose of creating the learning center.

5. **Develop Independent Learners**

The ultimate goal of learning center is to develop independent, self-actualizing individuals and life-long learners.

**Merits of the Learning Center**

Learning centers involve a kaleidoscope of objectives, activities and evaluation schemes. They are a beneficial yet challenging addition to any classroom. Learning centers are versatile, exciting, interesting and intellectually stimulating. Most importantly, learning centers appeal to individual goals, interests and needs. They can be adapted to a variety of learning styles and will help every teacher make his or her classroom activity oriented, inquiry oriented and success oriented.

The learning center approach has many merits. Some of these merits are catalogued below.

- Promotes child centered activities with fun
- Helps individualize instruction.
- Encourages independence in learning
- Reduces discipline problems
- Encourages team learning
- Involves flexibility
- Provides choices activities instead of strict routines and lessons
- Provides a wide variety of manipulative open-ended and creative activities
- Caters to diverse learning styles
- Motivates students
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- Requires minimum teacher direction
- Provides a variety of experiences
- Provides immediate reinforcement to empower students
- Develops understanding and appreciation for the uniqueness of each child
- Fits in the current philosophy of learning
- Provides opportunities to teachers to find out how students learn
- Encourages active discovery and inquiry
- Provides opportunities for students to teach others
- Frees the teacher from stand-up teaching
- Helps to develop positive self-esteem

Limitations of the Learning Center

- A few students may not be interested in learning centers
- A few students have problems with the amount of work that has to be finished and the difficulty level of the work
- A number of students may not know how to pace themselves or may not have the skills to work independently or may not have developed the sense of responsibility of their own learning.
- A number of teachers may feel that it takes too long and too much effort to develop or construct the learning center.
- Many centers may have a number of low level activities and may not challenge the learner.
- Some students may not take the centers seriously.

2.4.2 Sailing into Differentiating Instruction with Tiered Lessons

Differentiating Instruction is similar to the preparation needed for a sailing adventure. The captain identifies each crew member’s specialty and talent. So assignments can be made in the individual’s areas of expertise to make the journey a success. Likewise, all learners have unique skills and talents, as well as the right to learn all the information they possibly can. For this to occur, learning experiences are personalized and individualized during the learning journey. Teachers are the captains who set the course for the learner’s journey, deciding how each one will travel and
what each will learn along the way. A concept that is central to differentiation is the concept of tiering instruction, or offering instruction on the same content at varied levels of challenge. Tiering is a process of adjusting the degree of difficulty of a question, a task, or product to match a student’s current readiness. Tiered instruction provides different levels of learning tasks within the same unit or topic in order to align the curriculum to the different readiness levels of students and to respond to learner differences. Tiered Instruction involves differentiation of work expectations based on the needs and capabilities of the individual student. It typically involves setting a series of lesson plans and activities in place that allow for some variation of the content. It allows students to focus on essential skills yet still be challenged at the different levels on which they are individually capable of working.

Tomlinson (1999) described tiered lessons as “the meat and potatoes of Differentiating Instruction.” A tiered lesson is a differentiation strategy that addresses a particular standard, key concept, and generalization, but allows several pathways for students to arrive at an understanding of these components based on their interests, readiness, or learning profiles. A lesson tiered by readiness level implies that the teacher has a good understanding of the students’ ability levels with respect to the lesson and has designed the tiers to meet those needs. Many examples of lessons tiered in readiness have three tiers: below grade level, at grade level, and above grade level. There is no rule that states there may only be three tiers, however. The number of tiers will depend on the range of ability levels in the classroom since the formation of tiers is based on the assessment of students’ abilities to handle the material particular to this lesson. Students are regrouped the next time use of tiering as a strategy. Hence, the idea of flexible, rather than static, groups is essential (as cited by Adams and Pierce 2004). Tiered instruction invites educators to rethink traditional educational practices based upon a prior time when students were more similar in background and readiness.

Tiered instruction blends assessment and instruction. Before initiating each segment of learning, the teacher completes a pre-assessment to determine what students know and then prescribes content materials and learning experiences that promote continued learning for each student. As teachers consider students' assessed readiness levels, it becomes obvious that everyone is not at the same place in their
learning and that different tiered tasks are needed to optimize every student's classroom experience.

Tiered instruction aligns complexity to the readiness levels and learning needs of students. The teacher plans different kinds and degrees of instructional support and structure, depending upon each student's level. Tiered instruction allows all students to focus on essential concepts and skills yet still be challenged at the different levels on which they are individually capable of working. Ideally, tiered learning tasks engage students slightly beyond what they find easy or comfortable in order to provide genuine challenge and to promote their continued learning. Optimally, a tiered task is neither too simple so that it leads to boredom nor too difficult so that it results in frustration. As Tomlinson (2001) cautions, "Only when students work at appropriate challenge levels do they develop the essential habits of persistence, curiosity, and willingness to take intellectual risks”.

**Useful eight steps for developing a tiered lesson.**

1. **First, identify the grade level and subject for which to write the lesson.**
2. **Second, identify the targeting standard (national, state, district etc.).**
3. **Third, identify the key concept and generalization.**
4. **Fourth, be sure students have the background necessary to be successful in the lesson.**
5. **Fifth, determine in which part of the lesson (content, process, product) to tier.**
6. **Sixth, determine the type of tiering to do: readiness, interest, or learning profile.**
7. **Seventh, based on your choices above, determine how many tiers are needed.**
8. **Finally, develop the assessment component of the lesson.**

*Figure 2.11 Eight Steps in the development of Tiered Lessons*
Tiered assignments

Tiered assignments are teacher-prescribed learning activities that are specifically designed to respond to the differences in students’ readiness, interests, or learning preferences. When teachers tier assignments, they make slight adjustments within the same lesson to meet the needs of students. All students learn the same fundamental skills and concepts but through varying modes and activities. The teacher’s challenge is to ensure that all tasks, regardless of the tier level, are interesting, engaging, challenging, and aligned to the behavioral objectives.

Tiered assignments can be adjusted in any of the following ways:

- Level of complexity
- Pacing of the assignment
- Amount of structure
- Number of steps required for completion
- Materials provided
- Form of expression (letter, essay, report, research paper, short story)
- Level of independence required
- Time

Many teaching tools can be tiered: assignments, activities, homework, experiments, materials, and writing prompts. Two or three tiers are sufficient. Tiered activities should build understanding, challenge students appropriately at their readiness level, and encourage respect for all learners.

Tiered assignments should be:

- Different work, not simply more or less work.
- Equally interesting and engaging.
- Fair in terms of work expectations and time needed.
- Requiring the use of key concepts, skills, or ideas.
- Aligned to the behavioral objective.

Different Ways to Tier a Lesson/Activity

- Tier by level of challenge and complexity: When teachers tier by level of challenge and complexity, they address the needs of students at introductory levels as well as the needs of students who are ready for more advanced work.
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- Tier by resources: When teachers choose materials at various reading levels and complexity of content, they are tiering assignments by resources.
- Tier by outcomes: Students use the same materials but have differentiated outcomes.
- Tier by process: Students work on similar outcomes, but use different processes to the answers.
- Tier by product.

Factors that influence the complexity of Tiered activities

Tiered instruction evolves from teachers’ decisions regarding how to modulate task around the combinations of factors they select that influence complexity. All of the factors related to the readiness of the learner. Some of the factors are instructional options that are easily modified by the teacher, such as the degree of assistance a teacher provides, the complexity of the resources used, and the concrete to abstract nature of the process and product. Some factors are non-negotiable and require teachers to understand and accommodate within every tier, such as the background knowledge and skills the student brings to the task. Identifying complexity factors helps teachers to efficiently proceed with development of tiered activities.

Table 2.4

Factors that influence the complexity of Tiered activities

<table>
<thead>
<tr>
<th>Factors that influence the complexity of Tiered activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Degree of assistance and support</td>
</tr>
<tr>
<td>The teacher directs the learning experience</td>
</tr>
<tr>
<td>The teacher facilitates the students’ process in the learning experience</td>
</tr>
<tr>
<td>Students’ are autonomous in their enquiry</td>
</tr>
<tr>
<td>2. Degree of Structure</td>
</tr>
<tr>
<td>Clearly defined parameters for the task are prescribed</td>
</tr>
<tr>
<td>Open-ended criteria and parameters are posed for the task</td>
</tr>
</tbody>
</table>

The teacher directs the learning experience
The teacher facilitates the students’ process in the learning experience
Students’ are autonomous in their enquiry
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#### 3. Required background knowledge and skills
- Minimal, basic information and understanding is required
- Grade-level information and understanding is required
- More extensive information and understanding is required, including research skills and skills for independent inquiry

#### 4. Concrete or more abstract
- The process and product are concrete
- The process and product involve abstract thinking

#### 5. Quantity of resources
- A single resource is used
- Multiple resources are employed

#### 6. Complexity of resources
- Grade-level resources are provided
- Resources require above grade level reading ability
- The resources are concept dense
- Sophisticated technology applications are required

#### 7. Complexity of process
- The required degree of thinking varies (simpler or complex thinking processes are required)
- The time required to complete the task varies (short-term, long-term or involving multiple steps and extended period of time to complete)
- The research skills required to complete the task vary (simple research skills to more sophisticated research skills)

#### 8. Complexity of product
- The parameters of the product vary (structured and clearly
defined or more open-ended and unspecified)
> The integration of skills and concept varies in sophistication (simple skills and concepts or more advanced skills and concepts)

| 2.4.3 Graphic Organizers - Tools to Promote Differentiation |

Graphic Organizers provide teachers with tools to help students on the road to higher achievement. Graphic Organizers that target critical and creative thinking verbs are vehicles to help develop student’s cognitive abilities and provide formats for students to process their thinking about content. Graphic organizer formats also allow teachers to diagnose where students thinking have gone away. Teachers can pinpoint areas in which students thinking is weak illogical, or unclear. The structure and language of the organizer allows teachers to be able o coach students and move them beyond where thinking has fallen apart. Graphic organizers provide new language that facilitates classroom communication as well as deepen understanding of the contents that teacher work to transmit.

For certain students, the use of graphic organizers is particularly beneficial:

- For students who easily fall victim to faulty reasoning, they are aid to the thinking process.
- For students who have difficulty expressing their thoughts, they provide a format of expression.
- For students who have difficulty processing information, they provide a structure within which to state content and support for ideas.
- For students who are visual learners, they provide a visual aid
- For students who ramble they help focus the responses.
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Purposes of Graphic Organizers

Graphic Organizers can and should be used in a purposeful way. The six main purposes of Graphic Organizers are listed below

1. Improve Student achievement
2. Make sense of Information
3. Chunk Information
4. Promote depth of learning
5. Construct mental models
6. Foster motivation

Graphic Organizers also lend themselves to small group learning. Graphic organizers can also be tailored to fit with students individual learning styles.

Cognitive Graphic organizers are one of the more powerful tools we have to support Differentiating Instruction. The versatility of Graphic Organizers makes them perfect tools for differentiation. In table 2.5 Ten principles of Differentiating Instruction (adapted from Tomlinson, 1999; Tomlinson and McTighe, 2006 as cited in Drapeau, 2009), and paired these principles with the ways in which graphic organizers can be used to support them.

Table 2.5

Ways by which Graphic Organizers Support Differentiating Instruction

<table>
<thead>
<tr>
<th>Principles of Differentiation</th>
<th>Graphic Organizer Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Modify the content, thinking process, and/or product when</td>
<td>1. Use high-level thinking graphic organizers with different students at different times.</td>
</tr>
<tr>
<td>addressing student readiness, interests and styles</td>
<td></td>
</tr>
<tr>
<td>2. Adjust pace of instruction to accommodate rate of learning</td>
<td>2. Students who use graphic organizers may work faster because of their increased learning</td>
</tr>
<tr>
<td></td>
<td>rate or slower because of delays in processing information.</td>
</tr>
</tbody>
</table>
### Six Ways to Differentiate Using Graphic Organizers

Drapeau, (2009) identified six ways to differentiate using Graphic Organizers. Five of these focus on modifying the organizer itself, the prompt, and/or the resources.

<table>
<thead>
<tr>
<th>3. Provide different levels of differentiation</th>
<th>3. The graphic organizer itself provides a level of assistance because it directs the learning process</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Foster active learning through varied grouping practices and different types of instructional strategies</td>
<td>4. Open choice is great, but no choice is OK, too. Control the choice by offering just two or three graphic organizers when necessary</td>
</tr>
<tr>
<td>5. Provide feedback and different types of assessment</td>
<td>5. Formats provide a guide for small group and paired discussions</td>
</tr>
<tr>
<td>6. Allow for resource variety and text modifications</td>
<td>6. The graphic organizer lets the teacher see how the student is thinking. Rating scales and rubrics provide feedback guides</td>
</tr>
<tr>
<td>7. Modify assignments by length, time, and complexity</td>
<td>7. Based on expanded resources or limited resources, organizers are useful tools</td>
</tr>
<tr>
<td>8. Provide a supportive classroom environment that fosters individual differences and promotes individual successes</td>
<td>8. Simplify the organizer, allow more time to fill it out, integrate different levels of content complexity</td>
</tr>
<tr>
<td>9. Devise management strategies for both teachers and students</td>
<td>9. Honor both critical and creative thinking, offer choice, and allow for modifications</td>
</tr>
<tr>
<td>10. Devise management strategies for both teachers and students</td>
<td>10. Use the folders to store graphic organizers and use spreadsheets to keep track of student choices.</td>
</tr>
</tbody>
</table>
based on the needs of students. A sixth way to differentiate involves creating your own organizer, when existing ones just won’t work in a situation.

1. **The Open-Ended Prompt**
   - All students use the high level thinking Graphic Organizer
   - All students hear the same prompt
   - All students use the same resources

   The first way to differentiate involves an open-ended prompt. A prompt is a directive that students respond to on a graphic organizer. The graphic organizer provides an open-ended structure that allows for a basic level of differentiation. The teacher expects student responses to reflect their level of understanding. This is differentiated because students are able to respond at their own level of understanding. All students not just those with strong abilities, should be encouraged to think deeply.

   Using open-ended prompts works well for teachers who are just beginning to differentiate in their classrooms and are comfortable with whole class instruction. This basic level of differentiation, however, is an easy way for teachers to get used to new graphic organizers.

*Figure: 2.12 Advantages and disadvantages of Using the “Open –Ended Prompt”*
1. **The Directed Prompt**
   - All students use the same high-level thinking Graphic Organizer
   - Students receive differentiated prompt
   - All students use the same resources.

   In the next differentiation scenario, the directed prompt, only one Graphic organizer is used, which means all students are using the same high-level verb, and all students read or interact with the same resources. All students read the same chapter or hear the same lecture or watch the same video. They might be reaching the same assignment. This time, however, the prompts are different for different students.

   ![Diagram of The Directed Prompt]

   **Figure: 2.13 Advantages and disadvantages of Using the “Directed Prompt”**

   1. **Different But the Same**
      - Students use different graphic organizers
      - Students receive differentiated prompts
      - All students use the same resources

      A third way to differentiate using high-level thinking graphic organizers is to use different graphic organizers with different prompts, even though students use the same resources. Teachers in this situation often feel there is little time for students to
additional readings, and the teacher often do direct teaching in a whole class setting. Once the teacher has presented or reviewed the content, however, the teacher may be willing to differentiate the follow-up activities by providing students with different prompts on different graphic organizers. Teachers can either assign different graphic organizers or let students choose the one they would like to use.

![Different But the Same](image)

**Figure: 2.14 Advantages and Disadvantages of Using ‘Different But the Same’**

2. **Resources Make the Difference**

In this fourth way to differentiate, resources make the difference, all students use the same graphic organizer with the same prompt, but they use different resources. This is a great approach for everyone to focus on the same content, but need to modify the print material for students who are struggling or extend the print material for advanced learners. This is also most effective when the teacher pretests students and finds out the students’ prior knowledge. According to (Gardner, 1999; Heacox, 2002) Differentiation entails finding entry and exit points to learning. (as cited in Drapeau, 2009). If the pre-assessment
indicates that no students have prior knowledge, then the teacher can focus on whole group instruction with students doing different follow-up readings.

**Figure: 2.15** Advantages and disadvantages of Using the “Resources Make the Difference”

**3. Variety Plus**

- Students use different graphic organizers.
- Students receive different prompts
- Students use different resources

The fifth way of differentiating is called Variety Plus, because it offers the most variety. Students use different graphic organizers with different prompts as well as different resources. The teacher can assign a type of graphic organizer or the students can choose. The teacher provides different prompts for each graphic organizer in use. The students may be reading from different sources, or may have modified reading passages from a text. The key factor here is that every element is targeted to meet individual needs.
Figure: 2.16 Advantages and Disadvantages of using “Variety Plus”

4. **Create Your Own Organizer**
   - Create a graphic organizer when no graphic organizer exists to meet your needs.
   - Target the critical and/or creative thinking verb

The ultimate way to differentiate using high-level thinking graphic organizer is by creating own, to better suit the students needs by the teacher himself. Teachers need to find the idea of creating own graphic organizers. Also they can help students to create their own graphic organizers. Even though students can be successful doing this, they still need teacher support to understand how to analyze the verb, create procedural steps to process the verb, think about information they are studying to make sure it works in the content area, and come up with a graphic design.
On any given day, in any given subject area, or for any given type of activity, different students may have difficulty engaging in classroom activities, or learning new skills and concepts. Differentiating Instruction offers multiple pathways to learning, so that all students including children with Learning Disabilities are engaged and successful learners each and every school day. Effective Differentiating Instruction also helps students understand what they are expected to learn, evaluate their own progress, and articulate their learning strengths, challenges and interests. Starting where students are at, providing meaningful choice, and creating opportunities for students to demonstrate their interests and skills increases students’ motivation, self-confidence and willingness to assume responsibility for their learning.

For disabled students and many of their peers as well, long-established educational practices create a barrier for the kinds of meaningful learning experiences that encourage intellectual growth and autonomy. Disability does not reside in the individual, but rather in the interactions between the individual and the environment. All educators should consider potentially disabling and restrictive aspects of their

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**Figure: 2.17 Advantages and Disadvantages of Student-Created Graphic organizers.**
pedagogy, and to challenge common assumptions about educating disabled students. Good instruction is good instruction: the goals and procedures are clearly articulated; the instruction is relevant, accessible, and responsive; and the tasks are interesting and challenging, but reachable with effort. Disabled students benefit from good instruction, just as all students do. When teachers effectively differentiate instruction—constantly assessing students’ understandings, teaching responsively, and enabling students to demonstrate competence in varied, meaningful ways—disabled (and other) students can participate successfully as full members of heterogeneous Inclusive Classrooms.

Several studies and related literature support of the theoretical constructs underlying the concepts highlighted have been presented in the succeeding chapter.