

SUBAREA I—LEARNERS AND THE LEARNING ENVIRONMENT

Competency 0001 The teacher understands how students learn and develop and can provide learning opportunities that support their intellectual, social, and physical development at all grade levels, including early childhood, elementary, middle level, and secondary.

Skill 1.1 The teacher understands the processes by which students acquire knowledge and construct meaning.

First, teachers should realize that historically, there are two broad sides regarding the construction of meaning, the application of strategies, etc. One is behavioral learning. Behavioral learning theory suggests that people learn socially or through some sort of stimulation or repetition. For example, when we touch a hot stove, we learn not to do that again. Or, when we make a social error, and are made fun of for it, we learn proper social conventions. Or, we learn to produce something by watching someone do the same thing.

The other broad theory is cognitive. Cognitive learning theories suggest that learning takes place in the mind, and that the mind processes ideas through brain mapping and connections with other material and experiences. In other words, with behaviorism, learning is somewhat external. We see something, for example, and then we copy it. With cognitive theories, learning is internal. For example, we see something, analyze it in our minds, and make sense of it for ourselves. Then, if we choose to copy it, we do, but we do so having internalized (or thought about) the process.

Today, even though behavioral theories exist, most educators believe that children learn cognitively. So, for example, when teachers introduce new topics by relating those topics to information students are already familiar with or exposed to, they are expecting that students will be able to better integrate new information into their memories by attaching it to something that is already there. Or, when teachers apply new learning to real-world situations, they are expecting that the information will make more sense when it is applied to a real situation. In all of the examples given in this standard, the importance is the application of new learning to something concrete. In essence, what is going on with these examples is that the teacher is slowly building on knowledge or adding knowledge to what students already know. Cognitively, this makes a great deal of sense. Think of a file cabinet. When we already have files for certain things, it's easy for us to find a file and throw new information into it. When we're given something that doesn't fit into one of the pre-existing files, we struggle to know what to do with it. The same is true with human minds.

The teacher has a broad knowledge and thorough understanding of the development that typically occurs during the students' current period of life. More importantly, the teacher understands how children learn best during each period of development. The most important premise of child development is that all domains of development (physical, social, and academic) are integrated. Development in each dimension is influenced by the other dimensions. Moreover, today's educator must also have a knowledge of exceptionalities and how these exceptionalities effect all domains of a child's development.

Skill 1.2 The teacher understands developmental characteristics of students and how developmental factors affect learning.

Physical Development

It is important for the teacher to be aware of the physical stage of development and how the child's physical growth and development affect the child's learning. Factors determined by the physical stage of development include: ability to sit and attend, the need for activity, the relationship between physical skills and self-esteem, and the degree to which physical involvement in an activity (as opposed to being able to understand an abstract concept) affects learning.

Cognitive (Academic) Development

Children go through patterns of learning beginning with pre-operational thought processes and move to concrete operational thoughts. Eventually they begin to acquire the mental ability to think about and solve problems in their head because they can manipulate objects symbolically. Children of most ages can use symbols such as words and numbers to represent objects and relations, but they need concrete reference points. It is essential children be encouraged to use and develop the thinking skills that they possess in solving problems that interest them. The content of the curriculum must be relevant, engaging, and meaningful to the students.

Social Development

Children progress through a variety of social stages beginning with an awareness of peers but a lack of concern for their presence. Young children engage in "parallel" activities playing alongside their peers without directly interacting with one another. During the primary years, children develop an intense interest in peers. They establish productive, positive social, and working relationships with one another. This stage of social growth continues to increase in importance throughout the child's school years including intermediate, middle school, and high school years. It is necessary for the teacher to recognize the importance of developing positive peer group relationships and to provide opportunities and support for cooperative small group projects that not only develop cognitive ability but promote peer interaction. The ability to work and relate effectively with peers is of major importance and contributes greatly to the child's sense of competence.

In order to develop this sense of competence, children need to be successful in acquiring the knowledge and skills recognized by our culture as important, especially those skills which promote academic achievement.

Knowledge of age-appropriate expectations is fundamental to the teacher's positive relationship with students and effective instructional strategies. Equally important is the knowledge of what is individually appropriate for the specific children in a classroom. Developmentally oriented teachers approach classroom groups and individual students with a respect for their emerging capabilities. Developmentalists recognize that kids grow in common patterns, but at different rates which usually cannot be accelerated by adult pressure or input. Developmentally oriented teachers know that variance in the school performance of different children often results from differences in their general growth. With the establishment of inclusionary classes throughout the schools, it is vital for all teachers to know the characteristics of students' exceptionalities and their implications on learning.

Skill 1.3 The teacher recognizes ways in which a student's development in one domain (e.g., physical, social-emotional, intellectual) may affect other domains.

Elementary age children face many changes during their early school years, and these changes may positively and/or negatively impact how learning occurs. Some cognitive developments (i.e., learning to read) may broaden their areas of interest as students realize the amount of information (i.e., novels, magazines, non-fiction books) that is out there. On the other hand, a young student's limited comprehension may inhibit some of their confidence (emotional) or conflict with values taught at home (moral). Joke telling (linguistic) becomes popular with children age six or seven, and children may use this newly discovered "talent" to gain friends or social "stature" in their class (social). Learning within one domain often spills over into other areas for young students.

Likewise, learning continues to affect all domains as a child grows. Adolescence is a complex stage of life. While many people joke about the awkwardness of adolescence, it is particularly important to remember that this stage of life is the stage just before adulthood. While people do indeed develop further in adulthood, the changes are not as quick or significant as they are in adolescence.

When we say that development takes place within domains, what we mean is simply that different aspects of a human change. So, for example, physical changes take place (e.g., body growth, sexuality); cognitive changes take place (e.g., better ability to reason); linguistic changes take place (e.g., a child's vocabulary develops further); social changes take place (e.g., figuring out identity); emotional changes take place (e.g., changes in ability to be concerned about other people); and moral changes take place (e.g., testing limits).

The important thing to remember about adolescent development within each of these domains is that they are not exclusive. For example, physical and emotional development are tied intricately, particularly when one feels awkward about his or her body; or when emotional feelings are tied to sexuality; or when one feels that he or she does not look old enough (as rates of growth are obviously not similar). Moral and cognitive development often goes hand in hand when an adolescent reasons behavior or searches for role models.

What do educators need to know about this? Well, first, it is important to be sensitive to changes in adolescents. Just because you see a change in one area does not mean that there aren't bigger changes in another area, hidden beneath the surface. Speaking of which, the second area of extreme importance is to realize that adolescents may be deeply hurt over certain issues that may or may not be directly related to the changes they are going through. It is particularly important for educators to be on the lookout for signs of depression, drug use, and other damaging activities, behaviors, or symptoms.

The educator's primary professional concern will always be for the student and for the development of the student's potential. The educator will therefore strive for professional growth and will seek to exercise the best professional judgment and integrity.

In a student-centered learning environment, the goal is to provide the best education and opportunity for academic success for all students. Integrating the developmental patterns of physical, social and academic norms for students will provide individual learners with student learning plans that are individualized and specific to their skill levels and needs. Teachers who effectively develop and maximize a student's potential will use pre- and post-assessments to gain comprehensive data on the existing skill level of the student in order to plan and adapt curriculum to address and grow student skills. Maintaining communication with the student and parents will provide a community approach to learning where all stakeholders are included to maximize student-learning growth.

Skill 1.4 The teacher applies strategies for promoting learning among students at different developmental levels.

The effective teacher is cognizant of students' individual learning styles and human growth and development theory and applies these principles in the selection and implementation of appropriate instructional activities. In regards to the identification and implementation of appropriate learning activities, effective teachers select and implement instructional activities consistent with principles of human growth and development theory.

Learning activities selected for younger students (below age eight) should focus on short time frames in highly simplified form. The nature of the activity and the content in which the activity is presented affects the approach that the students will take in processing the information. Younger children tend to process information at a slower rate than older children (age eight and older).

On the other hand, when selecting and implementing learning activities for older children, teachers should focus on more complex ideas as older students are capable of understanding more complex instructional activities. Moreover, effective teachers maintain a clear understanding of the developmental appropriateness of activities selected for providing educational instructions to students and select and present these activities in a manner consistent with the level of readiness of his/her students.

The effective teacher takes care to select appropriate activities and classroom situations in which learning is optimized. The classroom teacher should manipulate instructional activities and classroom conditions in a manner that enhances group and individual learning opportunities. For example, the classroom teacher can organize group learning activities in which students are placed in a situation in which cooperation, sharing ideas, and discussion occurs. Cooperative learning activities can assist students in learning to collaborate and share personal and cultural ideas and values in a classroom learning environment.

The effective teacher selects learning activities based on specific learning objectives. Ideally, teachers should not plan activities that fail to augment the specific objectives of the lesson. Learning activities should be planned with a learning objective in mind. Objective driven learning activities tend to serve as a tool to reinforce the teacher's lesson presentation. Additionally, selected learning objectives should be consistent with state and district educational goals that focus on National educational goals (Goals 2000) and the specific strengths and weaknesses of individual students assigned to the teacher's class.

The effective teacher plans his/her learning activities to introduce them in a meaningful instructional sequence. Teachers should combine instructional activities as to reinforce information by providing students with relevant learning experiences through instructional activities.

Differentiating Instruction

Differentiation of instruction means that the teacher will vary the content, process, or product (Tomlinson, 1995). When a teacher varies content, it means that she or he will allow students to learn different things. For example, when studying the American Revolution, students in a social studies class might get a choice on whether they can study battles, daily life in the colonies at the time, or politics. When the teacher varies process, it means that he or she will allow students various ways of completing the same type of work.

For example, some students in a math class may be very proficient with a type of math activity and do not need to work out the problem by hand; other students may need the extra time in order to come to the correct answer. Finally, when teachers vary the product, their students will turn in different things that all show competency in one area. For example, in Language Arts, after reading a book, some students might write a book report, others might complete an art project, and others might do a dramatic interpretation of a section of the book. The reasons for differentiating instruction are based on two important differences in children: interest and ability.

Differentiating reading instruction is a bit more complex. Usually, when a teacher wants to ensure that each student in his or her class is getting the most out of the reading instruction, the teacher will need to consider the level at which the student is proficient in reading—as well as the specific areas that each student struggles with. It is first important to use a variety of sources of data to make decisions on differentiation, rather than rely on just one test, for example.

When teachers have proficient readers in their classrooms, they usually feel that these students need less attention and less work. This is wrong. If these students do not get careful instruction and challenging activities to increase their reading abilities further, they may become disengaged with school. These students benefit greatly from integrating classroom reading with other types of reading, perhaps complementing the whole-class novel with some additional short stories or non-fiction pieces. They also benefit from sustained silent reading, in which they can choose their own books and read independently. Discussion groups and teacher-led discussion activities are also very useful for these students. It is important, however, to ensure that these students do not feel that they have to do extra work than everyone else. Remember, differentiation does not distinguish differences in quantity; it distinguishes differences in type of work.

Average readers may benefit from many of the things that highly proficient readers should do; however, they may need more skill instruction. Most likely, they will not need as much skill instruction as weak readers, but they will benefit highly from having a teacher who knows which skills they are lacking and teaches them to use those skills in their own reading.

Weak readers need to focus highly on skills. Teachers will want to encourage them to make predictions, connect ideas, outline concepts, evaluate, and summarize. The activities that these students engage in should be developed for the purpose of instilling reading strategies that they can use in their independent reading, as well as to propel them toward higher levels of reading.

Competency 0002 The teacher understands that students vary in their approaches to learning and creates instructional opportunities that are adaptable to individual differences of learners.

Skill 2.1 The teacher understands differences in students' learning strengths and needs (e.g., related to variations in learning style, multiple intelligences).

There are several educational learning theories that can be applied to classroom practices. One classic learning theory is Piaget's stages of development which consist of four learning stages: sensory motor stage (from birth to age 2); pre-operation stages (ages 2 to 7 or early elementary); concrete operational (ages 7 to 11 or upper elementary); and formal operational (ages 7-15 or late elementary/high school). Piaget believed children passed through this series of stages to develop from the most basic forms of concrete thinking to sophisticated levels of abstract thinking.

Some of the most prominent learning theories in education today include brain-based learning and the Multiple Intelligence Theory. Supported by recent brain research, brain-based learning suggests that knowledge about the way the brain retains information enables educators to design the most effective learning environments. As a result, researchers have developed twelve principles that relate knowledge about the brain to teaching practices. These twelve principles are:

- The brain is a complex adaptive system
- The brain is social
- The search for meaning is innate
- We use patterns to learn more effectively
- Emotions are crucial to developing patterns
- Each brain perceives and creates parts and whole simultaneously
- Learning involves focused and peripheral attention
- Learning involves conscious and unconscious processes
- We have at least two ways of organizing memory
- Learning is developmental
- Complex learning is enhanced by challenge (and inhibited by threat)
- Every brain is unique

(Caine & Caine, 1994, Mind/Brain Learning Principles)

Educators can use these principles to help design methods and environments in their classrooms to maximize student learning.

The Multiple Intelligent Theory, developed by Howard Gardner, suggests that students learn in (at least) seven different ways. These include visually/spatially, musically, verbally, logically/mathematically, interpersonally, intrapersonally, and bodily/kinesthetically.

The most current learning theory of constructivist learning allows students to construct learning opportunities. For constructivist teachers, the belief is that students create their own reality of knowledge and how to process and observe the world around them. Students are constantly constructing new ideas, which serve as frameworks for learning and teaching. Researchers have shown that the constructivist model is comprised of the four components:

1. Learner creates knowledge
2. Learner constructs and makes meaningful new knowledge to existing knowledge
3. Learner shapes and constructs knowledge by life experiences and social interactions
4. In constructivist learning communities, the student, teacher and classmates establish knowledge cooperatively on a daily basis.

Kelly (1969) states “human beings construct knowledge systems based on their observations parallels Piaget’s theory that individuals construct knowledge systems as they work with others who share a common background of thought and processes.” Constructivist learning for students is dynamic and ongoing. For constructivist teachers, the classroom becomes a place where students are encouraged to interact with the instructional process by asking questions and posing new ideas to old theories. The use of cooperative learning that encourages students to work in supportive learning environments using their own ideas to stimulate questions and propose outcomes is a major aspect of a constructivist classroom.

The metacognition learning theory deals with “the study of how to help the learner gain understanding about how knowledge is constructed and about the conscious tools for constructing that knowledge” (Joyce and Weil 1996). The cognitive approach to learning involves the teacher’s understanding that teaching the student to process his/her own learning and mastery of skill provides the greatest learning and retention opportunities in the classroom. Students are taught to develop concepts and teach themselves skills in problem solving and critical thinking. The student becomes an active participant in the learning process and the teacher facilitates that conceptual and cognitive learning process.

Social and behavioral theories look at the social interactions of students in the classroom that instruct or impact learning opportunities in the classroom. The psychological approaches behind both theories are subject to individual variables that are learned and applied either proactively or negatively in the classroom. The stimulus of the classroom can promote conducive learning or evoke behavior that is counterproductive for both students and teachers. Students are social beings that normally gravitate to action in the classroom, so teachers must be cognizant in planning classroom environments that provide both focus and engagement in maximizing learning opportunities.

Designing classrooms that provide optimal academic and behavioral support for a diversity of students in the classroom can be daunting for teachers. The ultimate goal for both students and teachers is creating a safe learning environment where students can construct knowledge in an engaging and positive classroom climate of learning.

No one of these theories will work for every classroom, and a good approach is to incorporate a range of learning styles in a classroom. Still, under the guidance of any theory, good educators will differentiate their instructional practices to meet the needs of their students' abilities and interests using various instructional practices.

Skill 2.2 The teacher recognizes and understands factors that may affect learning and performance and adapts instruction to meet the needs of students based on various factors (e.g., family situations, cultural and language differences, socio-economic circumstances, prior learning, special talents, and disabilities).

Oftentimes, students absorb the culture and social environment around them without deciphering contextual meaning of the experiences. When provided with a diversity of cultural contexts, students are able to adapt and incorporate multiple meanings from cultural cues vastly different from their own socioeconomic backgrounds. Socio-cultural factors provide a definitive impact on a students' psychological, emotional, affective, and physiological development, along with a students' academic learning and future opportunities.

The educational experience for most students is a complicated and complex experience with a diversity of interlocking meanings and inferences. If one aspect of the complexity is altered, it affects other aspects, which may impact how a student or teacher views an instructional or learning experience. With the current demographic profile of today's school communities, the complexity of understanding, interpreting, synthesizing the nuances from the diversity of cultural lineages can provide many communication and learning blockages that could impede the acquisition of learning for students.

Teachers must create personalized learning communities where every student is a valued member and contributor of the classroom experiences. In classrooms where socio-cultural attributes of the student population are incorporated into the fabric of the learning process, dynamic interrelationships are created that enhance the learning experience and the personalization of learning. When students are provided with numerous academic and social opportunities to share cultural incorporations into the learning, everyone in the classroom benefits from bonding through shared experiences and having an expanded viewpoint of a world experience and culture that vastly differs from their own.

Researchers continue to show that personalized learning environments increase the learning affect for students; decrease drop-out rates among marginalized students; and decrease unproductive student behavior which can result from constant cultural misunderstandings or miscues between students. Promoting diversity of learning and cultural competency in the classroom for students and teachers creates a world of multicultural opportunities and learning. When students are able to step outside their comfort zones and share the world of a homeless student or empathize with an English Language Learner (ELL) student who has just immigrated to the United States and is learning English for the first time and is still trying to keep up with the academic learning in an unfamiliar language; then students grow exponentially in social understanding and cultural connectedness.

Personalized learning communities provide supportive learning environments that address the academic and emotional needs of students. As socio-cultural knowledge is conveyed continuously in the interrelated experiences shared cooperatively and collaboratively in student groupings and individualized learning, the current and future benefits will continue to present the case and importance of understanding the “whole” child, inclusive of the social and the cultural context.

The student's capacity and potential for academic success within the overall educational experience are products of her or his total environment: classroom and school system; home and family; neighborhood and community in general. All of these segments are interrelated and can be supportive, one of the other, or divisive, one against the other. As a matter of course, the teacher will become familiar with all aspects of the system, the school and the classroom pertinent to the students' educational experience. This would include not only process and protocols but also the availability of resources provided to meet the academic, health and welfare needs of students. But it is incumbent upon the teacher to look beyond the boundaries of the school system to identify additional resources as well as issues and situations which will effect (directly or indirectly) a student's ability to succeed in the classroom.