UPHL Institutional Journal
Volume 1, Issue 1, March 2003, pp. 12-31

Modern Trends in the Psychology of Learning and Teaching

Carlo Magno
De La Salle University

Abstract

This report presents the relationship between teaching and learning and attempts to explain the learning process. The contemporary perspective for effective information processing and tasks of educators are included to provide further explanation of the teaching and learning Process. The factors that affect the variation in the performance of students are also explained. Different Instructional Models are also presented grounded on the beliefs of the cognitive, behaviorist, and humanist approach in learning.

In the school setting all educators are concerned with two important variables; learning and teaching. It is the primary concern of all educators that students at the end of the course or a particular session will learn something out of it. Coinciding with this idea is making learning take place successfully for each learner. To make learning successful, there should be a match in the teaching style with the learning style of each student through varied techniques. Teaching and learning coincide with one another in a way that learning becomes successful if facilitated with better teaching.

The Learning Process

It is primarily important to understand the learning process that takes place in order to facilitate appropriate teaching. Learning takes place when there is more or less a change in behavior that results from experiences (Lupdag, 1984). Given this concept, the role of the educator is to provide learning experiences inside or outside the classroom to make learning take place. Peterson and Piaget (1996) explained learning as a process that takes place through assimilation, accommodation, and equilibration. According to Piaget (1977) that learning takes place because of schemas. The schemas allow individuals to make connections with the information they receive. Assimilation is the process of absorbing new experiences from the environment and adding these to previous experiences (Reyes, 2000). Accommodation is the integration of new experiences with the old and the formation of new insights and ways of thinking as a result of this integration (Reyes, 2000). Assimilation takes place when individuals incorporate information while accommodation results in creating new information. Once assimilation and accommodation occurs, the individual is now in a state of equilibrium where the information processed becomes part of his or her schema.

The process of learning takes place as explained in three stages: Input, processing, and output. The process in human cognition is similar on how a computer processes information. Input occurs when the senses receive data from the environment. The data that we sense may be the shape, size, texture, color and other qualities of the object. In the processing stage the concrete image of the object will be recognized. The object is abstracted further with the given

qualities of the object recognized. Then concept formation occurs where the object is given a name. If the processed information is new, a new concept is constructed and stored in memory for future use. Output takes place when individuals try to express the concept.

After having understood the learning process, it is necessary to note the contemporary perspectives on effective learning process as explained by Bernardo (1997).

1. It is assumed that the learner is a processor of information. The mind has a varied system of operations similar to the routines of a computer program. The mind also has a network of symbolic knowledge stored in memory. The mind receives information of various forms and the appropriate operations and symbolic information stored in the system will be used to transform the information. The transformation of information ultimately leads to cognitions, affects, beliefs, attitudes, and actions. Within this perspective, "learning" occurs with the acquisition of new operations and symbolic knowledge or the restructuring of old operations and knowledge.

2. Learning is active and constructive. Learners do not simply take in or absorb information; rather they construct their own knowledge and skills by actively processing the information they encounter in various experiences and situations.

3. Learning is cumulative. Students always bring a range of relevant knowledge and skills to any new learning situation; it is never a "*tabula rasa*" for the student. Students use their prior knowledge to structure and constrain future learning.

4. Learning is self-regulated. The teacher cannot fully control the learning process. Rather it is the student who undertakes the required steps to learn, who controls the learning process, who provides self-feedback and performance judgments, and who keeps oneself focused and motivated.

5. Learning is goal-oriented. Learning is best facilitated when the student is explicitly aware of the goals of learning, particularly when the students determine their own goals. However, learning can also be effective if an external agent advances a goal for learning, provided that these goals are adopted by the students themselves.

6. Learning is situated in social/cultural practice. People learn by participating in community practices and activities. In other words, learning is socially mediated; the learner gradually constructs new knowledge in the process of interacting with a group of people who share in practice and use of this knowledge.

7. Learning is individual. The outcomes and specific process of learning vary among students. The differences are brought about by individual differences in basic aptitudes like prior knowledge, learning styles, learning potential, interests, beliefs about learning, self-efficacy and so on.

It is implied in the contemporary perspectives that each learner is responsible for his or her own learning and therefore the rate of learning for each individual varies. The factors that contribute to individual differences in performance as an output of learning depend on the

following categories:

1. Lasting and general characteristics of the individual. The general ability of an individual in his or her traits may be more advanced as compared to others. Some individuals possess general skills and techniques appropriate for learning. There are individuals who can easily comprehend instructions.

2. Lasting but specific characteristics of the individual. The individual level ability on traits required in tests is more suitable than others. Some possess knowledge and skills specific to a particular form of evaluation.

3. Temporary but general characteristics of the individual. This includes health, fatigue, motivation, emotional strain, understanding the mechanics of testing, external conditions of heat, light ventilation, etc.

One factor that puzzles educators at the end of an evaluation is the occurrence of poor performance. The above categories posed the variables that affect poor performance but Erik Jensen (1987) identified 11 factors that lead to poor performance.

1. Lack of definite goal. Students who lack a definite goal will find a weak incentive for excellence and their paths will often stray from the road to success.
2. Laziness. It stems from negative surroundings, such as critical friends or relatives and a lack of definite goal. Laziness is the unwillingness to make a decision and the lack of commitment to follow through.
3. Poor relationship. Some students encounter negative, discouraging and counterproductive relationships with their family and friends.
4. Poor study habits. Weak study skills such as the neglect of valuable skills including speed in reading, concentration, comprehension, memorizing, and analysis.
5. Excessive worry. Many students waste hours, and even days, fretting and worrying over their school work or personal life. This expends energy that is necessary for other areas.
6. Negative Personality trait. There are some individuals who are unable to make changes and adjustments to their lifestyle. They may express frustration to other outlets. Some of these outlets may be shyness, sarcasm, criticism, withdrawal, guilt, listlessness, or using alibis. These negative personality traits can make good study habits difficult or impossible.
7. Outside activities. Most people try to do so many things at once that their scattered efforts cannot possibly be as potent as if all of their efforts were focused on one activity.
8. Lack of role models and support. Sometimes the people around just don't think about how tough it is for a student to fail to give the necessary support, empathy, self-confidence, and compliments to handle the highs and lows.
9. Illness. Persistent illness can cause missed classes and assignments, encouraging failure.
10. Dull classes or uninspiring teachers. Some classes may be uninteresting or presented in such a way that students get bored or frustrated.
11. Conditioned Behavior. Students are influenced by their peers, magazines, televisions, videos, games, newspapers, movies, entertainment artists, sports figures, relatives and parents.

In order to match the cognitive processes of individual learners Anderson, Blumfield, Pintrich, Clark, Marx and Perterson (1995) devised the following general principles for designing learning tasks:

1. Tasks should provide multiple representations of key ideas across situations
2. A set of tasks (though not necessarily every task) should feel authentic, representing as much as the complexity of the domain as is possible without overwhelming students.
3. Tasks should, engage students in explaining their own beliefs and considering alternative points of view.
4. Tasks should create opportunities for public interaction among the students and between the teacher and the student.
5. Tasks for grading and assessing student learning should be authentic and congruent with the other four considerations.

The psychology of learning is categorized into three schools of thought: the Cognitive, Behaviorist, and Humanist. These three schools of thought will be presented with the modern trends in the study of teaching approaches suitable in developing the ideas proposed for each discipline.

Cognitive Approach to Learning

The cognitive approach to learning tries to understand individuals thought processes by studying the structures of thinking and remembering. It refers to all the processes by which sensory input is transformed, reduced, elaborated, stored, recovered, and used; includes such hypothetical stages or aspects as sensation, perception, imagery, retention, recall, problem-solving, and thinking (Driscoll, 2001). The basic Cognitive Information Processing model is concerned with fundamental mental operations, mainly how we perceive and remember events and information as how it was explained in the first part. The cognitive theory says that learning is a process that is dictated by the students' previous experiences, and how the information is presented to the student. Cognitivists are more concerned with the way information is represented in memory, schemata, and mental models.

The major teaching approach under the cognitive approach includes reception learning, problem solving, and discovery learning although they are commonly done inside the classroom. The following are implications for instruction in the cognitive approach to learning:

1. Build on students' informal knowledge. As in any domain, new material is learned more meaningfully when it can be related to what the learner already knows.
2. Identify students' current "theories" or algorithms.
3. Use student errors as a source of information about their mental models. These "buggy algorithms" and naïve misconceptions are typically based on uncontrolled observations and need to be brought to the student's awareness before they can be challenged.
4. Use "think aloud" activities, since these help to uncover current models.
5. Model real problem-solving for students. Students need to see that solving problems is not just a matter of plugging numbers into an algorithm; rather it is a matter of determining the kind of

problem so that an algorithm can be successfully applied.
6. Explicitly teach problem-solving strategies. Don't expect that students will acquire appropriate strategies merely by seeing the teacher use them. Students will need guided, hands-on experience in using these.
7. Focus on processes, structures, and decisions, not answers. If students have a broad, conceptual understanding they will more likely be able to solve other kinds of problems in the future, not just the limited set they encounter in school.
8. Provide a mix of problem types, rather than grouping problems of one type; otherwise, students won't develop skill at determining the problem type and choosing an appropriate solution strategy.

The cognitive teaching models described below proposed by Wilson and Cole (1992) are all attempts to teach skills and knowledge in ways that will facilitate the successful transfer of tertiary students to job settings. The following models are taken from Wilson and Cole (1992).

Minimalist training

Instruction or training of any kind involves a paradox. Learners are acquainted with the actual thing they are learning about to better understand instruction. However, they are not prepared for the real thing until they've had some preliminary training. Trainers simplify problems to lead students in learning the necessary skill.

There is a continuing tension in all training between simplification and control versus exploration and exposure to real-world complexity. In house this is called the "spoon-feeding" problem: To simplify or not to simplify instruction-that is the question! Carroll (1990) expresses it in the context of learning to use computer applications: "To learn, users must interact meaningfully with the system, but to interact with the system, they must first learn."

To address this paradox, Carroll (1990) has carried on a line of research for more than ten years on what he calls "minimalist training." The problem can be put: What is the most painless way to get users up to speed using an IBM hardware/software system? Carroll and colleagues have studied minimalist training in an impressive array of experimental studies, showing clear and consistent advantages over lengthy tutorials. Three key principles of minimalist training are:

- Allow learners to start immediately on meaningfully realistic tasks.
- Reduce the amount of reading and other passive activity.
- Help make errors and error recovery less traumatic and more pedagogically productive.

Additional principles include:

- Encourage learners to reason about what they are doing.
- Design reading material to be read in different orders.
- Provide strong linkages between the instructional system and the target job system.
- Use learners' prior knowledge to advantage.
- Exploit specifics of the problem-solving situation

Cognitive Apprenticeships

Collins, Brown, & Newman (1989) have developed a model that seeks to take the best features from traditional apprenticeships and apply them to modern training conditions. Collins (1991) believes that technology can play a major role in accruing the benefits of traditional apprenticeships while reducing the disadvantages (e.g., economic exploitation, variability of mentors). The Collins-Brown model of cognitive apprenticeship contains several instructional principles, listed below:

1. *Content*: Teach tacit, heuristic knowledge as well as textbook knowledge. Heuristic knowledge is often utilized by experts without their conscious awareness. It is so embedded in the specifics of the problem that experts take it for granted, yet the lack of this kind of knowledge is precisely what will trip up the novice. The main way to get this tacit knowledge is by experience, yet cognitive apprenticeships need to take extra pains to ensure that this covert type of knowledge is at least partially uncovered, demystified, and taught explicitly to novices.

2. *Situated learning*: Teach knowledge and skills in contexts that reflect the way the knowledge will be useful in real life. Based on a somewhat radical model of human cognition (Brown, Collins, & Duguid, 1989), cognitive apprenticeships ground knowledge in authentic contexts. This is because knowledge and context are inseparable, they say. We know things through experience in concrete situations, so rather than fight that groundedness, we maximize its effect by providing rich, meaningful contexts within which learners can try out their new knowledge and skill. These rich learning environments will then ease the transition to real job conditions.

3. *Modeling and explaining*: Show how a process unfolds and tell reasons why it happens that way. Process modeling and explaining the relation between process and underlying principles is a key part of the cognitive apprenticeship model. Instructional technologies such as stop-action video and multimedia can facilitate this modeling and explaining process.

4. *Coaching and feedback*: Observe students as they try to complete tasks and provide hints and helps when needed. The personalized attention that a one-on-one instructor provides is important for learners to pinpoint problems in performance and make needed adjustments. The key is the personalized attention to performance, coupled with appropriate hints, helps, and encouraging feedback (Rossett, 1991).

5. *Scaffolding and fading*. Support learners by performing parts of the task they cannot perform. Gradually reduce the amount of scaffolding, shifting more and more of the control to the learner. The amount of scaffolding can be regulated by varying equipment, task, or environment (Burton, Brown, & Fischer, 1984). Burton, Brown, and Fischer (1984) offer additional guidelines, such as:

- intervening if the learner endangers himself or herself,
- being "aware that coaching is more important at the beginning of the acquisition phase than later on"
- deciding when to move on so that the learner doesn't develop wrong conceptions or habits that have to be unlearned at a later stage.

6. *Articulation and reflection*: Have students think about and give reasons for their actions, thus making their tacit knowledge more explicit. Students need opportunities to look back over their efforts and analyze their own performance. Talking about one's plans and activities as they solve problems can help learners develop more appropriate mental models of expert performance.

7. *Exploration*: Encourage students to try out different strategies and observe their effects. This gives learners practice using their existing knowledge and helps to tie it in with problems in need of solution. If students develop misconceptions, confront them with anomalies and counter-examples (Collins & Stevens, 1983).

8. *Sequence*: Proceed in an order from simple to complex, with increasing diversity. Increasing diversity means you explore the full domain of interest. Teach the underlying principle first, then fine-tune the application of that principle to specific performance contexts.

Cases, Microworlds, and Simulations

We turn below to techniques that can help bridge the gap between job and school settings.

1. *Case-based approaches*. Drawing on the well-established use of the case method in business, law, and medical schools. Graf (1991) proposes a model using focused case materials to provide a bridge for students between theory and practice. Cases may be real or fictional. Use of information-rich case materials allows students to practice any of the tasks typically addressed in courses-from conducting needs assessment to formulating evaluation plans. Because the cases are "focused," they are more efficient and manageable than actual field experience. Through a case method, students are exposed to a wide range of contexts and can view cases from multiple perspectives.

Schank and Jona (1991) propose a different approach to the use of cases based on these observations: (1) Experts, such as doctors and lawyers, make decisions in new situations by comparing them to previous cases; (2) when experts teach, they often tell stories; and (3) learning takes place on a need-to-know basis.

The Schank model:

a. places "students in a situation that they find inherently interesting,"
b. gives them a task that is "complex enough that all the information is not immediately available,"

c. teaches each "student what he or she needs to know, or might consider while doing the task, at precisely the points in the task at which the student becomes interested in knowing this information"

2. *Functional context training*. Montague (1988) provides evidence for the effectiveness of "functional context training," a spiraling method which begins with familiar objects about which learners have intuitive knowledge and moves to progressively more complicated but still familiar objects. For example, an introductory course for electronics technicians starts with a flashlight and

proceeds to a table lamp, a curling iron, an AC adaptor, and a soldering iron. Instruction is situated in realistic settings; it helps students develop appropriate mental models and procedures by integrating several domains of knowledge at once: problem solving, basic electricity/electronics knowledge, mental models of devices, language processing, and mathematics.

3. *Microworlds*. Burton, Brown, and Fischer (1984) use skiing instruction as a pretext for developing a model for designing skill-based "microworlds." A microworld is a controlled (often computer-based) learning environment where a student is able to try out new skills and knowledge. It is a practice-oriented simulation. Like the approaches described above:

a. instruction proceeds from simple to complex skills,
b. knowledge, skills, and attitudes are integrated through problem-solving activities, and
c. instruction is situated in rich and meaningful settings.

Burton et al.'s microworld model is a precursor of the cognitive apprenticeship model; for example, it incorporates modeling, coaching, fading, reflection, exploration, and encouraging the learner to debug his or her knowledge.

4. *Simulations*. Computer simulations provide an opportunity for the learner to act on realistic scenarios without attendant dangers and inefficiency in the use of time and money. Flight simulators have been used for years to train pilots; students can be exposed to a wide array of flight conditions such as fog, cross winds, down drafts, engine flare out etc. without endangering themselves or others. Students in medical technology can practice "time-consuming" laboratory tests in seconds rather than hours or days. Simulations facilitate exploration and reflection and can incorporate on-line modeling, coaching, and explanations. Furthermore, the level of task difficulty can be adjusted.

Cognitive Flexibility Theory

Cognitive flexibility theory is an integrated theory of learning, mental representation, and instruction (Spiro, Feltovich, Jacobson, & Coulson, 1991). Cognitive flexibility theory provides a number of heuristics for designing instruction that avoids over-simplifying instruction by providing real-world cases, providing multiple representations of the content in order to enhance transfer, and requiring knowledge construction by learners, not knowledge regurgitation. A primary teaching strategy is the use of hypertexts that allow students considerable control as they explore and browse through a content domain.

Behaviorist Approach to Learning

In the behaviorist perspective learning occurs when a connection between a stimulus and a response has been established. Behaviorism, focuses on variables we can observe, measure, and manipulate, and avoids whatever is subjective, internal, and unavailable. The stimulus-response concept commonly known as the “classical conditioning” explains that the stimuli can elicit particular responses in a learner. If a positive response is elicited from the learner, teachers should most likely reinforce it. A positive response is reinforced to increase the likelihood that the

behavior will be repeated. Inside the classroom, reinforcement is done by giving rewards.

The following are teaching behaviors adapted from Caluag (2002) that are supported by behavioral beliefs:

- Teachers associate academic learning with things that is interesting to students.
- Teachers encourage fearful or shy students to perform.
- Teachers are open and clear about the academic objectives and standards they expect learners to meet, and those objectives and standards should be written in behavior terms.
- Teachers should reinforce the learning behavior they want from students.
- Teachers must be certain that students have the basic knowledge or skill upon which new learning is built.
- When presenting a new task, teachers should organize the material to be learned in small, sequential steps.
- When a task is new or difficult, teachers should provide more regular reinforcement.
- Teachers should demonstrate or model the behavior they want their students to imitate.
- Teachers draw students' attention to others who demonstrate, or model, desirable behaviors.
- All students should not be expected to learn at the same pace.

The following are classroom approaches used by teachers under the principle of behaviorism.

1. Programmed Instruction

In applying this method the teacher at the beginning of the class presents the students what will be expect from them and what they are suppose to learn and do within the given time frame. In presenting the lesson the teacher can make use of frames where examples, illustrations, or definitions of concepts are given and the students identify it. To verify the responses the correct concept is then shown. At the start of the lesson the teacher ca present the objectives or topics that will be taken for the session.

2. Computer-assisted instruction

The teacher can make use of the computer to present content of the lesson to the class. One way of presenting information to the students is with the use of the "Powerpoint program." In power point the information is presented in an organized and logical manner in which a topic is covered in each slide presentation. The presentation is enhanced with the words or concepts moving in different direction, sounds and pictures can be matched with certain concepts.

For a more interactive approach in the use of computers in learning, the teacher may use a variety of CD-ROM interactive programs like the "School Bus" where different subject areas for young pupils are tapped and explored by clicking in objects in the screen. The objects serve as frames and the concept will be presented. There are Computer Assisted Instruction (CAI) for math where the fundamental operations are done through games which interests the students. In the math program for instruction the level of difficulty suited for the grade level can be adjusted and predefined. In geography there are interactive world atlas CD-ROM available where students

can magnify and pinpoint any location from the globe. The places located also presents trivia information for the students. There are also CAI's that enhances the spelling of words where students through an interactive adventure should select words with correct spelling. Generally teachers teach and reinforce the lesson with the aid of the computer but not as a substitute for the teacher. The computers stimulate the senses of the students through sounds and pictures but in order to operate it the teacher plays a very vital role.

3. Mastery Learning

In mastery learning the teacher gradually teaches the lesson by introduction then reinforcement and deepening it. Check-up exercises are given to determine if all students can pass 80% of the set objectives. If majority of the students are not able to pass 80% of the of the test then the teacher reteaches the lesson to enhance the skills. The reteaching stage serves are the corrective instruction to remedy the weaknesses of the students in order for them to reach the objectives set. In measuring whether the students have mastered the lesson a test is prepared and the items are framed according to each objective.

The entire process of teaching is reflected in a carefully organized plan where the teacher sets the objectives in specific observable and measurable behavior. The teacher direction should only be ¼ of the instruction time and the student self-activity is ¾ of the instruction time. The learning content is stated and the materials to be used. The learning experience is geared toward activities that will target the stated objectives and in the end the teacher assesses how much the students have mastered the lesson. In the assessment everything is taken into account by the teacher including the objectives, content and learning experience.

4. Applied Behavioral Analysis

Applied behavior analysis is the process of applying sometimes tentative principles of behavior to the improvement of specific behaviors and simultaneously evaluating whether or not any changes noted are indeed attributable to the process of application (Baer, Wolf, Risly, 1968). Furthermore, appropriate classroom behaviors are increased with the application of applied behavioral analysis. This is done by the teacher carefully observing and noting the specific behavior of his students. The teacher specifies clearly the behaviors that he may want to change or reinforce. The appropriate behaviors such as paying attention and volunteering responses are reinforced while swearing and fighting are eliminated. Specific body of carefully described techniques are used by the teacher to increase or eliminate certain defined behaviors of students.

In maintaining a behavior the teacher may use the substitution principle in the case where a students volunteers to clean the classroom an ineffective reward is presented like a commendation in the diary just before presenting a more effective reward like a ribbon for being most helpful.

Another is when a student gives an excellent response with explanation during class discussion the teacher then waits for more responses before giving an outstanding commendation.

To stop a student in engaging in an inappropriate behavior like shouting the teacher may allow the student to shout until he becomes tired and stops. Another is presenting an incompatible alternative, if the students starts to shout you ask him to sing for the class in that way he will be unable to exhibit shouting.

Related Beliefs and Findings

- A motivated learner acquires what he learns more readily than one who is not motivated.
- Active participation is preferable to passive reception.
- Learning under the control of reward is usually preferable to learning under the control of punishment.
- There is no substitute for repetitive practice in the learning of skills.
- Individuals need practice in setting goals or objectives for themselves: goals that are neither so low and limited as to elicit little effort nor so high and difficult as to foreordain failure.
- Learning has application and can be transferred to other situations.

In incorporating the behavior principles in teaching, the following are the things to remember:

1. Write observable and measurable behavioral learning outcomes.
2. Specify the desired performance in advance and verify learning with appropriate assessment.
3. Emphasize performance, and practice in an authentic context.
4. Use instructional strategies to shape desired skills.
5. Reinforce accomplishments with appropriate feedback.

Humanistic Approach to Learning

The humanistic perspective focuses on the affective aspect of learning (Reyes, 2000). The goal of education in the humanist perspective is to develop a self-actualized person (Maslow, 1970). In the humanistic approach of learning, the individual's subjective experience is regarded. It focuses on how the learner perceives and interprets events in his or her environment. The following are assumptions adapted from Atkinson (1990) about the learner in the humanistic approach:

- The experiencing learner is the primary concern. The learners are understood in their own subjective views of the world, their perceptions of self, and their feeling of self-worth.
- Learner's choice, creativity, and self-actualization are facilitated. Learners have the need to develop their potentials and capabilities. Growth and self-understanding are developed by the teacher.
- Meaningfulness is considered in teaching. Teachers personalize education by giving learners considerable latitude in deciding what to do and how to do it. Teachers create an environment wherein choices are available and help students make choices that seem wise to them.
- Ultimate value is placed on the dignity of the learner. The teacher believes that every learner is good and capable of achieving. The school and classroom environment must help the learner satisfy essential human needs such as personal safety, security, love, belonging, and achievement.

As described by Gage and Berliner (1991) there are five basic objectives of the humanistic view of education:

1. promote positive self-direction and independence (development of the regulatory system);

2. develop the ability to take responsibility for what is learned (regulatory and affective systems);
3. develop creativity (divergent thinking aspect of cognition);
4. curiosity (exploratory behavior, a function of imbalance or dissonance in any of the systems); and
5. an interest in the arts (primarily to develop the affective/emotional system).

The SCANS report (Whetzel, 1992) as well as Naisbitt (1982), Toffler (1990) and other authors point to the importance of these objectives for success in the information age. It is important to realize that no other model or view of education places as much emphasis on these desired outcomes as does the humanistic approach.

According to Gage and Berliner (1991) some basic principles of the humanistic approach that were used to develop the objectives are:

1. Students will learn best what they want and need to know. That is, when they have developed the skills of analyzing what is important to them and why as well as the skills of directing their behavior towards those wants and needs, they will learn more easily and quickly. Most educators and learning theorists would agree with this statement, although they might disagree on exactly what contributes to student motivation.
2. Knowing how to learn is more important than acquiring a lot of knowledge. In our present society where knowledge is changing rapidly, this view is shared by many educators, especially those from a cognitive perspective.
3. Self-evaluation is the only meaningful evaluation of a student's work. The emphasis here is on internal development and self-regulation. While most educators would likely agree that this is important, they would also advocate a need to develop a student's ability to meet external expectations. This meeting of external expectations runs counter to most humanistic theories.
4. Feelings are as important as facts. Much work from the humanistic view seems to validate this point and is one area where humanistically-oriented educators are making significant contributions to our knowledge base.
5. Students learn best in a non-threatening environment. This is one area where humanistic educators have had an impact on current educational practice. The orientation espoused today is that the environment should by psychologically and emotionally, as well as physically, non-threatening. However, there is some research that suggests that a neutral or even slightly cool environment is best for older, highly motivated students.

The following are classroom approaches used by teachers under the principle of humanism.

1. Teacher Effectiveness Training

This strategy promotes open and honest communication in the classroom. If students express their feelings toward a particular course of study or a teacher, the teacher should act as a listener and tries to understand the point of view of the student. The expressed concern of the student may be a particular problem of difficulty in coping with a subject or with a style of the teacher. So the teacher can guide and help the student by identifying areas that needs to be improved.

2. Inviting School Success

This can be employed in an everyday practice inside the classroom. During recitation the teacher can call out names of the student with utmost familiarity and mastery of their faces and abilities. When a student is called the teacher can repeat the question in a different manner if the student is not able to answer. The teacher can then communicate in a personal appeal when asking so that the student will not be threatened. If the students answer is correct one deserves a commendation but if not, the teacher can still accept the answer but tries to focus the answer of the student. This idea also manifest the teachers respect for the deviated ideas. Students are more encouraged if the teacher values every response coming from them.

3. Values Clarification

The students can be presented different scenarios with dilemma. In the presented dilemma the student decision is asked and the reason is surfaced. Let the students identify the series of values related to the situation and let them respond in concordance with the appropriate values.

4. Moral Education

Moral education can be integrated in all subject areas. A certain value or virtue can be the ultimate lead in a days topic. The lesson is connected with a certain value or virtue. At the end of each days lesson the teacher wraps-up everything taught in concordance with the theme. The teacher can cite example of good role models in society or can even invite then inside the classroom. In that way the students feel they belong to a community. To create a family community atmosphere inside the classroom, the teacher can set up a picnic session as an activity or a student gathering where they eat together and talk about their problems in school and in the classroom. To encourage students to hold high academic standards, the teacher can survey responses from good students how they value their studies and work.

5. Multiethnic Education

This approach can be employed in different student activities like classroom skit presentation where students should show one's reverence to their culture. A classroom interaction should be facilitated with foreign students with local students like conducting interviews and group discussions. Students can also share their experiences and home practices and other students become aware of cultural diversity.

Related Beliefs and Findings

The humanistic approaches stressed personal culture, individual freedom, and development as the best way toward full rich lives. There is the presence of freedom of thought,

self-expression, and creative activity as its fundamental bases. Education in this perspective strives for the expression of individual personality through art, literature, music, architecture, and nature. There is a premium on the deportment and manners.

The following are the contemporary instructional designs categorized under each school of thought. These instructional designs were made as models under the basis of underlying theories in the cognitive, behavioral and humanist perspectives. Reigeluth (1983) defines instructional theory as identifying methods that will best provide the conditions under which learning goals will most likely be attained. It is a challenge to educators to find more about the implementation of the following instructional designs and use it in the classroom to determine its effectiveness.

Table 1. A List of Contemporary Instructional Designs

Cognitive	Behavioral	Humanistic
ACT A general theory of cognition developed by John Anderson and colleagues at Carnegie Mellon Univeristy that focuses on memory processes .	Anchored instruction A major paradigm for technology-based learning that has been developed by the Cognition & Technology Group at Vanderb (CTGV) under the leadership of John Bransford.	Cross Adult Learning K. P. Cross (1981) presents the Characteristics of Adults as Learners (CAL) model in the context of her analysis of lifelong learning programs.
Algo-Heuristic Theory L. Landa's theory is concerned with identifying mental processes	Component Display Theory (CDT) (M.D. Merrill) Classifies learning along two dimensions: content (facts, concepts, procedures, and principles) and performance (remembering, using, generalities).	Andragogy M. Knowles' theory of andragogy is an attempt to develop a theory specifically for adult learning.
Aptitude-Treatment Interaction (ATI) The concept that some instructional strategies (treatments) are more or less effective for particular individuals depending upon their specific abilities.	Connectionism (E. Thorndike) Learning is the result of associations forming between stimuli and responses.	Experiential Learning (C. Rogers) addresses the needs and wants of the learner.
Cognitive Dissonance (L. Festinger) There is a tendency for individuals to seek consistency among their cognitions (i.e., beliefs, opinions).	Contiguity Theory (E. Guthrie) "a combination of stimuli which has accompanied a movement will on its recurrence tend to be followed by that movement"	Multiple Intelligences (H. Gardner) there are a number of distinct forms of intelligence that each individual possesses in varying degrees.
Cognitive Flexibility Theory (R. Spiro, P. Feltovitch & R. Coulson) Cognitive flexibility theory focuses on the nature of learning in complex and ill-structured domains	Conversation Theory (G. Pask) The fundamental idea of the theory was that learning occurs through conversations about a subject matter which serve to make knowledge explicit.	Phenomenonography (F. Marton & N. Entwistle) This conceptual framework focuses on the experience of learning from the student's perspective and is based upon a phenomenological approach to research.
Cognitive Load Theory (J. Sweller) This theory suggests that learning happens best under conditions that are aligned with human cognitive architecture.	Criterion Referenced Instruction (CRI) framework developed by Robert Mager is a comprehensive set of methods for the design and delivery of training programs.	Situated Learning (J. Lave) Lave argues that learning as it normally occurs is a function of the activity, context and culture in which it occurs
Conditions of Learning (R. Gagne) Identifies five major categories of learning: verbal information, intellectual skills, cognitive strategies, motor skills and attitudes.	Drive Reduction Theory (C. Hull) drive reduction or need satisfaction plays a much more important role in behavior than in other frameworks	Social Development Theory (L. Vygotsky) The major theme of Vygotsky's theoretical framework is that social interaction plays a fundamental role in the development of cognition.

Constructivist Theory (J. Bruner) learning is an active process in which learners construct new ideas or concepts based upon their current/past knowledge.	Gestalt Theory (Max Wertheimer) grouping characteristics of stimuli cause us to structure or interpret a visual field or problem in a certain way	Holistic learning theory the 'individual personality consists of many elements: the intellect, emotions, the body impulse (or desire), intuition and imagination (Laird, 1985) that all require activation if learning is to be more effective.
Double Loop Learning Theory Argyris (1976) proposes that learning changes underlying values and assumptions.	Information Pickup Theory (J. Gibson) The theory of information pickup suggests that perception depends entirely upon information in the "stimulus array" rather than sensations that are influenced by cognition.	Facilitation theory The basic premise of this theory is that learning will occur by the educator acting as a facilitator, that is by establishing an atmosphere in which learners feel comfortable to consider new ideas and are not threatened by external factors
Dual Coding Theory Proposed by Paivio attempts to give equal weight to verbal and non-verbal processing.	Mathematical learning theory (R. C. Atkinson) an attempt to describe and explain behavior in quantitative terms.	Experiential learning (Kolb) This theory asserts that without reflection we would simply continue to repeat our mistakes.
Elaboration Theory (C. Reigeluth) instruction should be organized in increasing order of complexity for optimal learning.	Model-Centered Instruction and Design Layering (Andrew S. Gibbons) Model-Centered Instruction (MCI) is a set of principles to guide instructional designers in selecting and arranging design constructs, so it is appropriately called a *design* theory.	
Functional Context (T. Sticht) stresses the importance of making learning relevant to the experience of learners and their work context.	Operant Conditioning (B.F. Skinner) Based upon the idea that learning is a function of change in overt behavior.	
Genetic Epistemology (J. Piaget) interest on how knowledge developed in human organisms.	Originality (I. Maltzman) refers to behavior that occurs relatively infrequently, is uncommon under given conditions, and is relevant to those conditions.	
GOMS Model (Card, Moran & Newell) GOMS is a theory of the cognitive skills involved in human-computer tasks.	Sign Learning (E. Tolman) an organism learns by pursuing signs to a goal, i.e., learning is acquired through meaningful behavior.	

GPS (A. Newell & H. Simon) The General Problem Solver (GPS) was a theory of human problem solving stated in the form of a simulation program	Soar (Allen Newell, John Laird and Paul Rosenbloom) Soar exhibits a variety of different types or levels of learning: operators (e.g., create, call), search control (e.g., operator selection, plans), declarative data (e.g., recognition/recall), and tasks (e.g., identify problem spaces, initial/goal states). Soar is capable of transfer within or across trials or tasks.	
Information Processing Theory George A. Miller has provided two theoretical ideas that are fundamental to cognitive psychology and the information processing framework.	Social Learning Theory (A. Bandura) observing and modeling the behaviors, attitudes, and emotional reactions of others.	
Lateral Thinking Edward de Bono has written extensively about the process of lateral thinking -- the generation of novel solutions to problems.	Stimulus Sampling Theory (W. Estes) The theory suggested that a particular stimulus-response association is learned on a single trial; however, the overall learning process is a continuous one consisting of the accumulation of discrete S-R pairings.	
Levels of Processing (F. Craik & R. Lockhart) an alternative to theories of memory that postulated separate stages for sensory, working and long-term memory.	Symbol Systems (G. Salomon) intended to explain the effects of media on learning.	
Mathematical Problem Solving (A. Schoenfeld) Alan Schoenfeld presents the view that understanding and teaching mathematics should be approached as a problem-solving domain.		
The Minimalist theory (J.M. Carroll) A framework for the design of instruction, especially training materials for computer users.		
Modes of Learning (D. Rumelhart & D. Norman) there are three modes of learning: accretion, structuring and tuning.		
Script theory (R. Schank) The central focus of Schank's theory has been the structure of knowledge, especially in the context of language understanding.		

Structural Learning Theory (J. Scandura) what is learned are rules which consist of a domain, range, and procedure.		
Structure of Intellect (J.P. Guilford) intelligence is viewed as comprising operations, contents, and products.		
Subsumption Theory (D. Ausubel) concerned with how individuals learn large amounts of meaningful material from verbal/textual presentations in a school setting		
Triarchic Theory (R. Sternberg) The triarchic theory of intelligence consists of three subtheories: (i) the componential subtheory(ii) the experiential subtheory, (iii) the contextual subtheory		

Conclusion

The prime directive in the psychology of learning and teaching as stressed is the improvement of the teaching or instruction in order to facilitate better learning. The ultimate goal in forming students is for them to love learning and gain the will of becoming independent and continuing learners. It is also important to consider that individual learning varies for each students and the role of the teacher is to provide authentic learning experiences to achieve better performance of the majority of students. It is commonly said that the poor teacher talks, the average teacher explains, the good teacher demonstrates and the great teacher empowers. In order to empower students, teachers must use all effective means of teaching.

References

Anderson, L. M., Blumfield,, P., Pintrich, P. R., Clark, C. M., Marx, R. W., & Peterson, P. (1995). Educational psychology for teachers: Reforming our courses, rethinking our roles. *Educational Psychologist, 30*, 143 – 157.

Atkinson, R. L., Atkinson, R. C., Smith, E. E., & Bem, D. J. (1990). *Introduction to psychology*. New York: Harcourt Brace Jovanovich.

Bernardo, A. (1997). *Creating powerful learning environment*. De La Salle University, Cutting Edge Seminar.

Biehler, J.H. & Snowman, J. (1990). *Psychology applied to teaching*. Boston: Houghton Miffin.

Brooks, J.G. & Brooks, M.G. (1993). *The case for constructivist classrooms*. Alexandria, VA: Association for Supervbision and Curricular Development.

Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher, 42*, 32-42.

Bruner, J.S. (1966). *Toward a theory of instruction*. New York: Norton.

Bustos, A. & Espiritu, S. (1985). *Psychological foundations of education*. Quezon City: KATHA Pub.

Burton, R. R., Brown, J. S., & Fischer, G. (1984). Skiing as a model of instruction. In B. Rogoff & J. Lave (Eds.), *Everyday cognition: Its development in social context*. Cambridge MA: Harvard University Press.

Caluag, A. (2002). *Psychology of learning and teaching*. Ateneo De Manila University. Ateneo Teacher Center.

Carroll, J. M. (1990). *The Nurnberg Funnel: Designing minimalist instruction for practical computer skill*. Cambridge MA: MIT Press.

Collins, A., Brown, J. S., & Newman, S. E. (1989). Cognitive apprenticeship: Teaching the crafts of reading, writing, and arithmetic. In L. B. Resnick (Ed.), *Knowing, learning, and instruction: Essays in honor of Robert Glaser* (pp. 453-494). Hillsdale NJ: Erlbaum.

Collins, A., & Stevens, A. L. (1983). In Reigeluth, C. M. (Ed.), *Instructional-design theories and models: An overview of their current status* (pp. 250-278). Hillsdale, NJ: Erlbaum.

Driscoll (2001). *Learning and Cognition*. Indiana University.

Gage, N., & Berliner, D. (1991). *Educational psychology* (5th ed.). Boston: Houghton, Mifflin.

Graf, D. (1991). A model for instructional design case materials. *Educational Technology Research and Development, 39* (2), 81-88.

Jensen, E. (1989). *Student success secrets*. USA: Barron's educated Series.

Luksong Tinik (1990). *Children's Rehabilitation Center.*

Lupdag, A. D. (1984). *Educational psychology*. Metro Manila: National Bookstore Publishers.

Maslow, A. (1970). *Toward a psychology of being*. New York: Harper and Row.

McGucken, W. J. (1990). *The philosophy of catholic education*. New York: The America Press.

Mechner, F. (1977). *A new approach to programmed instruction*.

Montague, W. E. (1988). Promoting cognitive processing and learning by designing the learning environment. In D. Jonassen (Ed.) *Instructional designs for microcomputer courseware* (pp. 125-149). Hillsdale, NJ: Erlbaum.

Peterseon, C. (1996). *Looking forward through the life span: Developmental psychology*. New York: Prentice Hall.

Naisbitt, J. (1982). *Megatrends*. New York: Macmillan/Merrill.

Piaget, J. (1977). *The development of thought: Equilibriation of cognitive structures.* New York: Viking.

Reigeluth, C. M. (1983). Instructional design: What is it and why is it. In C. M. Reigeluth (ed.), *Instructional-design theories and models*. Hillsdale, NJ: Erlbaum.

Reyes, F. (2000). *Engineering the curriculum: A guidebook to educators and school managers*. De la Salle University: DLSU Press Inc.

Rogers, C. (1992). *A way of being*. Boston: Houghton Miffin.

Rossett (1991). *Coaching successful performance*. Paper presented at the meeting of the Association for Educational Communications and Technology, Orlando.

Schank, R. C., & Jona, M. Y. (1991). Empowering the student: New perspectives on the design of teaching systems. *The Journal of the Learning Sciences, 1*(1), 7-35.

Spiro, R.J., Feltovich, P.J., Jacobson, M. J., & Coulson, R.L. (1991). Cognitive flexibility, constructivism, and hypertext: Random access instruction for advanced knowledge acquisition in ill-structured domains. *Educational Technology, 31* (5), 24-33.

Thorndike, R. L. (1949). *Personnel selection*. New York: John Wiley and Sons.

Toffler, A. (1990). *Powershift.* New York: Bantam Books.

Whetzel, D. (1992, March). *The Secretary of Labor's Commission on Achieving Necessary Skills*. ERIC Digest. (ERIC NO.: ED 339749).

Wilson, B., & Cole, P. (1992). A critical review of elaboration theory. *Educational Technology Research and Development, 40*(2), 8-16.

Wilson, B. G., & Jonassen, D. H. (1993). Automated instructional systems design: A review of prototype systems. *Journal of Artificial Intelligence in Education, 2* (2), 17-30.

Wilson, B. G., Jonassen, D. H., & Cole, P. (1993). Cognitive approaches to instructional design. In G. M. Piskurich (Ed.), *The ASTD handbook of instructional technology* (pp. 21.1-21.22). New York: McGraw-Hill.