

Accelerated Learning Techniques: Teaching Critical Thinking in Qassim University

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INTRODUCTION

Learning in terms of being able to undertake critical analysis is still a perennial problem to the teachers in English. Many teachers, in desperation for their students to acquire some skills tend to spoon feed their students. Combined accelerated learning means changing behavior with increasing speed. Learning in a structured educational setting may be thought of as a two-step process involving the reception and processing of information. In the reception step, external information (observable through the senses) and internal information (arising introspectively) become available to students, who select the material they will process and ignore the rest. The processing step may involve simple memorization or inductive or deductive reasoning, reflection or action, and introspection or interaction with others. The outcome is that the material is either "learned" in one sense or another or not learned. A learning-style model classifies students according to where they fit on a number of scales pertaining to the ways they receive and process information. A model intended to be particularly applicable to engineering education is proposed below. Also proposed is a parallel teaching-style model, which classifies instructional methods according to how well they address the proposed learning style components. The learning and teaching style dimensions that define the models are shown in the box [1, 4]. Most of the learning and teaching style components parallel one another. A student who favors intuitive over sensory perception, for example, would respond well to an instructor who emphasizes concepts (abstract content) rather than facts (concrete content); a student who favors visual perception would be most comfortable with an instructor who uses charts, pictures, and films.

The Bachelor degree course in Architecture is a 4 year course consisting of 139 credit-hours. At the University of Qassim, the educational system in the college is based on two main semesters per educational year. Each semester is fifteen (15) week length. In addition; an optional eight week summer semester may be offered. An architecture student may complete any of the engineering programs in 8

semesters after the Preparatory Year Program (PYP). A successful architecture student may complete the full requirements of the selected program if he completed (after the PYP) a total of 139 credit-hours.

One of the basic courses in Architecture is Critical Thinking, a 3-unit subject offered in level 1 of fall semester. Critical Thinking is the capstone course in basic architecture since it integrates almost all the knowledge a student has learned in 4 years of high school education. This course has traditionally been delivered through classroom multimedia instruction to architecture students. One semester learning period is insufficient to fully discuss all the topics for this course.

This paper presents findings based on the adoption of the principles of Accelerated Learning in Critical Thinking course of the College of Architecture and Engineering, Qassim University, Buraidah City. The results of the study suggest the effectiveness of Accelerated learning as indicated by the following: the students' active participation in class individual and group activities, their good performance in midterm and final examinations, their ability to use deductive and inductive reasoning in arguments and ability to apply what they had learned in critical thinking for their area of specialization in architecture, planning and design.

As this study is based on classroom instruction of Critical Thinking, the change in behavior expected is the increased ability of the architecture students to perform the core plus the additional requirements of the course.

The adoption of the principles of Accelerated Learning benefited the students in that they learned more, faster, and better, were able to apply what they learned in class in working on their projects, and became better and more creative innovators.

Among the techniques used in the course, lectures with the aid of an LCD have been weak in tapping a number of intelligences. This implies that although its use may lead to higher efficiency, the learner may find it difficult to be fully attentive, hence may not learn as much as expected.

The use of the other techniques such as individual and group activities is more involving and fun to the students. The learning facilitator noted that mapping out the intelligences for each instruction technique allows one to be more aware of the distinctions among the students with respect to their learning styles. If an instruction technique addresses most of the students' intelligences, then they learn much more at that span of time.

Therefore, this is a practice that must be adopted by an accelerated learning facilitator in his pursuit of higher efficiency. Without using AL techniques, learning facilitators could still be effective as long as they are able to catch the attention of the class through humor and fun and the use of multimedia. The learning facilitator must be open to learning from the ten (10) students' intelligence and should retain a sense of wonder that could be passed on to the students. In so doing, professional preparation becomes more thorough because it was more enjoyable than cumbersome

1 LITERATURE REVIEW

1.1 Traditional vs. Accelerated learning

Traditional learning needs much improvement, particularly in our fast-paced and dynamically changing world. Trainers have to compete with the inputs coming from various sources that compete for the attention of the students. This, therefore, leads us to the most frequently asked question: How can a trainer be an effective facilitator of learning?

Russell differentiated the traditional learning from accelerated learning [1]. These are indicated in Table 1.

Table 1. Traditional versus Accelerated Learning

Traditional	Accelerated
Linear	Nonlinear, systemic
Knowing about	Knowing how
Formal, structured	Informal, flexible
Conscious	Unconscious
Memorized facts	Intuitive and applicable knowledge
"Have to" learning	"Want to" learning
Hard work	Fun, effortless
Emotion-free	Emotional
Passive	Active

Accelerated Learning is a spin-off from Gardner's Theory of Multiple Intelligences and Neuro-Linguistic Programming.

1.2 Neuro-Linguistic Programming (NLP)

NLP refers to the basic process used by all human beings to encode, transfer, guide and modify behavior [5]. Neuro stands for the basic tenet that all behavior is the result of neurological processes. It refers to the system of internal processes, both conscious and unconscious, through which all experience is received and processes via the five senses such as hearing, sight, taste, smell, touch.

Linguistic refers to the fundamental precept that all neural processes are represented, ordered, and sequenced into models and strategies through language and communication systems.

Programming indicates the process of organizing the components of a system that attain the desired results. Specifically, it refers to the system of coded instructions and logical sequence of operations of the internal representations by which people think, learn, motivate themselves and change. NLP believes that all human beings experience the world, not as it truly is, but through the models or maps they make of it. The model or map, however, does not approximate the real world because of the constraints that limit it [2, 7].

NLP believes that a person experiences the world through the models he has made, and he communicates his experience by making linguistic representations of it. The process of representing is accomplished through specialized perceptual modalities, the most common of which are the auditory, the visual and the kinesthetic.

An auditory person can be contacted more easily through spoken language. A visual is more easily affected by what he sees. A kinesthetic is sensitive to touch.

1.3 Gardner's Theory of Multiple Intelligences

Gardner proposed a new view of intelligence that is rapidly being incorporated in school curricula [2]. In his Theory of Multiple Intelligences, Gardner expanded the concept of intelligence to also include such areas as music, spacial relations, and interpersonal knowledge in addition to mathematical and linguistic ability.

Gardner defines intelligence as "the capacity to solve problems or to fashion products that are valued in one or more cultural setting" [3, 6]. Using biological as well as cultural research, he formulated a list of seven intelligences. This new outlook on

intelligence differs greatly from the traditional view, which usually recognizes only two intelligences, verbal and computational. The ten intelligences Gardner defines are:

1. Logical-Mathematical Intelligence consists of the ability to detect patterns, reason deductively and think logically. This intelligence is most often associated with scientific and mathematical thinking.

2. Linguistic Intelligence involves having a mastery of language. This intelligence includes the ability to effectively manipulate language to express oneself rhetorically or poetically. It also allows one to use language as a means to remember information.

3. Spatial Intelligence gives one the ability to manipulate and create mental images in order to solve problems. This intelligence is not limited to visual domains. Gardner notes that spatial intelligence is also formed in blind children.

4. Musical Intelligence encompasses the capability to recognize and compose musical pitches, tones, and rhythms. (Auditory functions are required for a person to develop this intelligence in relation to pitch and tone, but it is not needed for the knowledge of rhythm.)

5. Bodily/kinesthetic intelligence is an aptitude for physical movement. This is sometimes broken into two types: tactile and kinesthetic. Tactile learners learn through touch and manipulation of objects, while kinesthetic learners assimilate learning by involving their whole bodies.

6. Personal Intelligences includes interpersonal feelings and intentions of others.

7. Intrapersonal intelligence is the ability to understand one's own feelings and motivations. Personal and Intrapersonal intelligences are separate from each other. Nevertheless, because of their close association in most cultures, they are often linked together.

8. Emotional intelligence is an aptitude strongest in people who are able to recognize an emotion as they are experiencing it, and react to it in a way that is considered positive by the culture.

9. Naturalist intelligence is the need to be with nature.

10. Existential intelligence is an aptitude for knowing the reason for one's existence or 'why you are here.'

Although the intelligences are anatomically separated from each other, Gardner claims that the intelligences very rarely operate independently. Rather, the intelligences are used concurrently and typically complement each other as individuals develop skills or solve problems. For example, a dancer can excel in his art only if he has 1) strong musical intelligence to understand the rhythm and variations of the music, 2) interpersonal intelligence to understand how he can inspire or emotionally move his audience through his movements, as well as 3) bodily-kinesthetic intelligence to provide him with the agility and coordination to complete the movements successfully.

Gardner argues that there is both a biological and cultural basis for the multiple intelligences. Accepting Gardner's Theory of Multiple Intelligences has several implications for teachers in terms of classroom instruction.

1. As the theory states that all intelligences are needed to productively function in society, teachers, therefore, should think of all intelligences as equally important. This is in great contrast to traditional education systems, which typically place a strong emphasis on the development and use of verbal and mathematical intelligences.

2. It also implies that teachers should structure the presentation of material in a style that engages most or all of the intelligences.

3. All students will come into the classroom with different sets of developed intelligences. This means that each child will have his own unique set of intellectual strengths and weaknesses. These sets determine how easy (or difficult) it is for a student to learn information when it is presented in a particular manner, which is commonly referred to as a learning style. Defined were the visual, auditory and kinesthetic intake styles. Many learning styles can be found within one classroom.

4. As children do not learn in the same way, they cannot be assessed in a uniform fashion.

5. Traditional tests (e.g., multiple choice, short answer, essay...) require students to show their knowledge in a predetermined manner. Supporters of Gardner's theory claim that a better approach to assessment is to allow students to explain the material in their own ways using the different intelligences. Preferred assessment methods include student portfolios, independent projects, student journals, and assigning creative tasks [5]

2 METHODOLOGY

Critical Thinking is a course taken by the regular first year Architecture students in Qassim University This course was chosen by the researcher as a pilot course for the implementation of AL due to the following reasons:

1. The course content – much material is to be covered in one term;
2. The requirements of the course – the course requires involvement in critical skills *to* raise clear and precise questions, use abstract ideas to interpret information, consider diverse points of view, reach well-reasoned conclusions, and test them against relevant criteria and standards

3. The nature of the course—the course is less mathematical or quantitative than other architecture courses but tests more the creativity of the students; and

4. The difficulty in impressing upon the students the importance of safety, considering that since it is usually perceived as a practical subject matter that could easily be learned in the course of one's work experience in industry, the tendency of students is to take safety for granted.

The researcher taught this course for three consecutive terms and gradually developed an instructional approach using the guidelines and principles of Accelerated Learning.

3 INSTRUCTION TECHNIQUES USED

1. Film showing of the different kinds of deductive and inductive reasoning.
2. Lectures with the aid of LCD Projector.
3. Individual and Group Activities to facilitate learning.
4. Research skills to gather, assess, record, and apply relevant information in architectural coursework.

5. Collaborative skills to recognize the varied talent found in interdisciplinary design project teams in professional practice and work in collaboration with other students as members of a design team

6. Presentation of particular topics by the students within the grasp and understanding of the class

4 INSIGHTS FROM ADOPTION OF ACCELERATED LEARNING

From the experimental class of Critical Thinking course, the following findings were obtained:

1. The various activities appeal to a majority of the intelligences.
2. The film on deductive and inductive reasoning appealed to the visual and auditory students. The requirement to make a group reaction paper appealed to the kinesthetic.
3. The group presentations appealed to the three intake styles, a sign that the students adopted Accelerated Learning principles although unintentionally and probably, intuitively.
4. The research and collaborative skills were able to express their own opinions by analyzing all current events in the architecture videos (with musical background during pauses).
5. The students who were not aware of AL principles performed ably as effective learning facilitators in their group presentations. The techniques they used bore the characteristics of AL as shown on Table 1. vely written documents in the form of manuals, graphic safety visuals

5 INDICATORS OF EFFECTIVENESS

The following items were taken as indicators of effectiveness of accelerated learning techniques.

1. Class Performance

The students performed well in the tests, presentations and projects. The overall performance of the class was moderately above satisfactory.

2. Participation in Class

The students actively participated in class activities. Humor and laughter punctuated group activities.

3. Research

The students documented the critical thinking concepts of their selected topics in their course outline. This was followed by an assessment of the comprehensiveness of the critical thinking based on the topics learned in class. A collaborative skill was also done on two critical processes. The reports were generally above satisfactory to outstanding.

4. English 104 Project

The students' presentations of English 104 drama were generally well received by the invited representatives from the English club. Clarifications were made after the presentation. Revisions were made and resubmitted to the satisfaction of the respective English panels. The English drama was generally moderately satisfactory.

6 CONCLUSION

The adoption of the principles of Accelerated Learning benefited the students in that they learned more, faster, and better, were able to apply what they learned in class in working on their projects, and became better and more creative innovators. Among the techniques used in the course, lectures using LCD projector has been weak in tapping a number of intelligences. This implies that although its use may lead to higher efficiency, the learner may find it difficult to be fully attentive, hence may not learn as much as expected. The use of the other techniques such as individual and group activities is more involving and fun to the students.

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Appendix 1:

Technique: Film showing of critical thinking concepts. A learning paper is submitted afterwards which is shared before the class, if time permits.

Intelligence	Step in Exercise
Interpersonal	The learners share the insights gained with the class.
Logical	There is a defined process. The time limit for the submission of the paper adds structure.
Spatial	The film shown is visual and so is the presentation of a student in front of class
Musical	The film is enlivened with musical background.
Linguistic	The written and spoken words are used.
Intrapersonal	The learners think of what to document and write the paper alone.
Kinesthetic	The learners write their learning paper.
Emotional	Watching videos is fun.
Naturalist	Weak
Existential	Learning about the critical thinking concepts on personal well-being allows the learner to think of mortality which may somehow be linked to thoughts of one's purpose in life.

Appendix 2:

Technique: Lectures with the aid of LCD projector

Intelligence	Step in Exercise
Interpersonal	Some learners are given the chance to respond to questions posted by the learning facilitator.
Logical	The presentations are highly structured.
Spatial	LCD projector is highly visual.
Musical	Weak
Linguistic	The spoken and written words are used.
Intrapersonal	Learners are given a chance to think through the lecture as it proceeds.
Kinesthetic	Weak
Emotional	Watching videos is fun.
Naturalist	Weak
Existential	Weak

Appendix 3:

Individual and Group Activities to facilitate learning (such as research of different styles and strategies of preparing arguments, as well everyday applications in communication media to gather, assess, record, and apply relevant information in architectural coursework.

Intelligence	Step in Exercise
Interpersonal	Learners share with team and with the class
Logical	There is a defined process for each activity.
Spatial	Observing the different styles and strategies of arguments is visual and so with the scrutiny of the documents.
Musical	Weak
Linguistic	The written word is used.
Intrapersonal	The student is provided some time to remember the different styles in preparing arguments.
Kinesthetic	Weak
Emotional	Coming out with the output is fun.
Naturalist	Weak
Existential	Talking with others about life events creates thoughts about personal purpose.

Appendix 4:

Presentation of particular topics by the students within the grasp and understanding of the class. Each team is given a topic to present before the class. The use of role play, contests, video creation, and class involvement activity are all encouraged.

Intelligence	Step in Exercise
Interpersonal	There is high interaction between the presenters and the class.
Logical	The list of topics to be presented by each team provides a good structure.
Spatial	The presentation techniques as suggested are highly visual.
Musical	Video films are accompanied by background music.
Linguistic	The spoken word is used.
Intrapersonal	Each learner is given a chance to think through aspects of safety alone as presentation proceeds.
Kinesthetic	The class is involved with activities devised by presenters.
Emotional	Each presentation is fun.
Naturalist	Weak
Existential	Weak

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