World Scientific News

Issues and Challenges in the College of Architecture, Qassim University towards Accelerated Learning Techniques

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ABSTRACT

Selection of incompetence teachers and a non-accredited college might affect student learning outcome. Among these outcomes are students' cognitive skills of comprehension, English proficiency, passing the government examinations, job hunting and the entrance examinations required for the master's program in the top universities of US and UK. This study aims to adopt the principles of Accelerated Learning techniques as a tool to improve the teacher and student performance in the College of Architecture at Qassim University. 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 the final examinations and ability to apply what they had learned in the environmental control system. As this study is based on classroom instruction of Environmental Control System Course, the change in behavior expected is the increased ability of the architecture students to perform the core plus the additional requirements of the course

Keywords: Accelerated learning, multiple intelligences, learner-centered classroom, Qassim University, teaching performance, traditional learning, traditional classroom

1. INTRODUCTION

In the Kingdom of Saudi Arabia, Saudis use different words in defining learning within the university, but in general, educators are talking about a step-by-step process in which

individual experiences permanent, lasting changes in knowledge, behaviors, or ways of processing the world. 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 (Ganiron Jr, 2013). 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.

The College of Architecture in Qassim University (2016) first and most important condition affecting the teaching of design studio, art history, and building and materials construction courses is poor in the English language. Throughout the early history in this college, there was a general reluctance to use English language as a medium of instruction.

In the 201 files of 2011-2014, there were Egyptian, Yemeni and Tunisian teachers who were hired in this college that lack essential English and research skills, especially the inability to speak the language and incapable to publish a manuscript in an ISI journal.

The researcher points out, putting untrained teachers into classrooms to meet increased demand or to expand access to schooling is often at the expense of the quality of teacher preparation and, hence, the quality of learning. This, researcher says, negatively affects the character of education as well as the Qassim University education budget. Most Egyptian teachers residing in Saudi Arabia choose to teach as a way of earning living and most commonly to kill their boredom at homes. Due to this, large numbers of posts of teachers in this college is being occupied by such teachers who have no idea and knowledge about teaching methods, course designing and hence results in compromising the education of the architecture students which lead to bad and poor results and also the level of motivation of the students fall down.

The Qassim University Faculty and Staff Handbook (2012) and signing of the contracts in the home country, stated that English is the medium of instruction to be used in teaching. But few teachers used the English language as a medium of instruction especially in the College of Architecture. This is the main reason why most architecture students had a very low in cognitive skills in terms of comprehension based on the test of Saudi Council for Architecture.

As perceived by the architecture graduates of SY 2013-2014 in this college, the architecture graduates had a hard time to seek & pass architecture employments especially in the multinational companies in Riyadh, Dammam and Al Khobar because of poor performance in the English language and weak in the comprehension knowledge of professional courses acquired in the this college. Most of the architecture graduates landed jobs in the supermarket, airport, restaurant, or family business such as renting an apartment or selling dates & dried fruits. Some architecture students who wanted to take up master's degree program in the top universities of the US or UK failed to pass the entrance examination and interview due to incompetence in the English language.

The teacher evaluation as revealed by the students of SY 2013-2014, there were some teachers that are not qualified to undertake tasks for teaching in design studio, art history, and materials construction courses because they lack course knowledge, language proficiency, and competence in language teaching methodology. The teachers who graduated Ph.D. from the online and research based are mostly the graduates who know very little or nothing about

teaching methodologies but only know terms used in the architecture through memorization. In 2012, it was observed that in this college due to an inadequate number of teachers qualified in teaching architecture, they hired teachers who have no knowledge about teaching methods. Based on the records of National Commission for Academic Accreditation and Assessment (NCAAA) team of SY 2015-2016, few teachers in this college are attending professional training related to architecture education due to the English language.

The vast majority of architecture teachers in Qassim University are sent into the classroom with absolutely no training in managing student behavior. Others have been told by professors that if they implement well-planned course syllabus based on a strong curriculum, the architecture students will sit with their hands folded and say "Teacher, please tell me more." While that practice certainly helps, architecture teachers need more in their behavior management bag of tricks. Because the typical teacher has received little or no practical guidance in this area that is so vital to teaching success and satisfaction, many eventually begin to listen to tired and misguided educational folklore like: "Don't smile until you received your monthly salary."–"Keep those brats under your thumb, and let `they know who's the boss."

Architecture students in this college are often exasperated by teachers who waste their time with boring, rambling and irrelevant lectures. The problem is that faculty members often just don't care any longer. As revealed by the architecture graduates of SY 2015-2016 in Qassim University, there were some students complaining that they were asked to make building plans in a design studio course and when they submitted the plans to the teacher concern, the student gave them a grade of C+. The student asked the teacher about the weaknesses of the plans and the teacher avoided answering the question and suddenly the teacher gets angry. The architecture graduates of SY 2015-2016 also stressed that there were some cases that they are wasting their time in a design studio class like doing drawings and constructing a miniatures that are more than 30 hours in a week that can't improve their artistic and cognitive skills and sometimes they get bored and affect their grades in other courses especially when they came late in the next class.

The complaints of the architecture graduates of SY 2014-2015 in this college reveals that incompetent teachers include incompetent college dean that has either been unable to motivate their team or has lacked the bottle to dismiss really useless teachers. Of course, the system of teacher appraisals is badly flawed and desperately needs to be reformed and properly implemented over a set period during which time there is recourse to impartial and confidential adjudication. It should never be forgotten that personality clashes have a significant bearing on teacher performance and mental welfare (Ganiron, et al., 2017).

In the interview with the architecture graduates of SY 2016-2017 in this college, there were some instances that an architecture teacher gave a grade of A+ or A to all students in a particular course to cover up his deficiency in attending the class and mastery of the course. Moreover, there was some architecture students perceive that some teachers have favorites who receive preferential treatment, making the class unfair.

In 2015, the College of Architecture in Qassim University obtained a copy of most recent accreditation examination conducted by the National Commission for Academic Accreditation and Assessment (NCAAA) team, which occurred in late November. Examiners found that the College of Architecture did not meet the national standards in five areas. The first, entitled "Assessment System and Unit Evaluation" which requires an evidence of the assessment system that collects and analyzes data on applicant qualifications, candidate and

graduate performance and unit operations to evaluate and improve the performance of candidates, the unit, and its programs. The second, entitled "Unit Governance and Resources", which requires leadership, authority, budget, personnel, facilities, and resources, including information technology resources, for the preparation of candidates to meet professional, state, and institutional standards. The third, entitled, "Learning and Teaching", which requires evidence of institutional oversight of the quality of learning and teaching, student learning outcomes, program development processes, program evaluation and review processes, student assessment, quality of teaching, and qualifications and experience of the teaching staff. The fourth entitled, "Employment Process", which requires evidence in policy and administration, recruitment, personal and career development, discipline, and complaints and dispute resolution. Lastly, the fifth entitled, "Research", which requires an evidence of institutional research policies, teaching staff and student involvement in research, and research facilities and equipment. This situation might jeopardize the ability of the architecture students to enroll the masters' degree program in top universities of US or UK. Some employers will not acknowledge degrees from unaccredited schools. For instance, graduates from non-accredited architecture schools.

Motivation is one of the basic conditions which achieve the goal of the learning process, the learning ways of thinking, the formation of attitudes and values, the collection of information and the problem solving (Lacsamana et al., 2015). The gap between the content of teacher education programs and the needs of the classroom widens.

The teachers are unaware of the need of the learners and the curriculum designed by the school or the teachers are just irrelevant to the needs of the learners. Teachers don't have any knowledge about the needs analysis which should be conducted in order to meet the learner needs for effective results. The needs analysis is the first step in course design and it provides validity and relevancy for all subsequent course design activities. Program content might focus on irrelevant knowledge instead of needed skills and attitude changes, especially for participants confronting unsupportive family members or colleagues and peers.

Research reveals that Accelerated Learning (AL) techniques can enhance retention and lead to improved performance. Many educationalists have been working on the most effective approaches to classroom teaching. In America, the Accelerated Schools program was established, aimed particularly at improving education for at-risk students

Therefore, the use of accelerated learning in other professional courses might improve the performance of the architecture students in terms of their cognitive skills, and numerical and English communication skills in the College of Architecture at Qassim University.

2. ACCELERATED LEARNING (AL) TECHNIQUES

Accelerated learning (AL) is a formal or non-formal education program of study incorporating a variety of educational methodologies relevant to the needs of an individual or group to enhance and accelerate their learning. Specifically, accelerated learning is an umbrella term for a series of practical, student-centered approaches to learning. These approaches and theories have developed from a range of disciplines including the study of brain function, theories of human attention and motivation, the psychology of optimal performance, and intelligence theory.

Accelerated learning has the expectation that, when motivated and appropriately taught, all learners can reach a level of achievement that may currently appear beyond them (VanZant, 2011). It provides a breadth of proven life-long learning skills based on an understanding of how students learn – i.e., learning styles. It also encompasses teaching styles.

The concept of accelerated learning first came to prominence in 1966 through the work of Dr. Georgi Lozanov who provided practical knowledge on enhancing learning through music (Smith, 1996). The relaxation induced by specific music left the mind alert and able to concentrate at a greater capacity than in a non-relaxed state. Other methods of relaxation and enhanced learning were studied and comparisons were documented. Research into the effectiveness of accelerated learning, conducted by Dr. Schuster, Professor of Psychology, and Dr. Peterson at Iowa State University, indicated that it improved the speed of learning by 200-300 percent (Peterson, 1977).

Researchers and educators have been developing accelerated, or speed learning practices over the past 25 years that help students to achieve their full potential and learning capacity (Nicolls, 2004). Table 1 shows the teacher effectiveness scale

Table 1. Teacher Effectiveness Scale

Teaching Technique	Student retention After One Week
Lecture	5% of what we hear
Reading	10% of what we read
Audio-visual	20% of what we hear and see
Demonstration	30% of what we see
Discussion Group	50% of what we see, hear and say
Practice by doing	75% of what we do
Teach others or immediate use	90% of what we say and do

Source: Vernon A. Magnesen, 1983

These included the use of learning styles, teaching styles, multiple intelligences, student-centered learning, student-based learning, multigrade teaching, cooperative learning, active engagement in relevant problem-based learning (action learning), and de-stressing schooling. Techniques such as group work, peer learning, motivational groups, interest based groups, interactive learning, multi-media, adult education, and distance learning were also studied and developed with a focus on the student, rather than on the teacher. The terminology was globally accepted as the "student-centered approach" to learning. The student-centered approach engages the student as a whole person in their learning capacities as expressed by Magnesen's teaching effectiveness scale.

2. 1. Traditional versus Accelerated Learning

The term "accelerated learning" is used, sometimes fairly loosely, to indicate modern research-based approaches to learning, drawn from a wide range of fields such as neuroscience, psychology, and learning theory. The technique is grounded in an understanding of how learning takes place, rather than what is to be learned. The principle is that with the correct teaching and motivation, and a positive learning environment, learners are able to achieve beyond expectations (Ganiron Jr, 2013).

The term "traditional learner" describes a student suited to learn within the boundaries of a physical classroom using a pre-defined curriculum. The Rochester Institute of Technology describes this as an instructor-centered environment, where the instructor controls materials and the learning pace for students to acquire and memorize knowledge.

The traditional teaching approaches are generally teacher-directed and follow cookbook steps of activities and demonstrations. This approach may not provide students with valuable skills or even with a body of knowledge that lasts much beyond the end of the term (Adams et al., 2009). To enhance the quality of teaching and learning in the classroom accelerated learning such as active, cooperative, collaborative and problem-based learning can be utilized. However, Accelerated Learning is a spin-off from Gardner's Theory of Multiple Intelligences and Neuro-Linguistic Programming (Berman, 2002).

Russell differentiated the traditional learning from accelerated learning. These are indicated in Table 2 (Burgess & Russel, 2002).

Table 2. 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

When it began in the 1970s, accelerated learning was revolutionary. Its starting point was so completely different from anything on offer at that time (Lucas, 2017). Educationalists still thought about curriculum, terms, courses, and examinations. Trainers dealt in lectures, demonstrations, classes, and workshops.

It suggested that: a) learners and active learning were more important than teachers and courses; b) the way people teach was out of step with the way the brain works, and; c) it was possible for learners to become much more engaged and motivated in their learning and therefore learn faster.

Early advocates of accelerated learning talked about the brain, about emotions, about learning styles and much more. It's worth remembering that the 1970s and 1980s were exciting times for learning and education (Lucas, 2017). Not only were amazing things happening in terms of scientific discoveries, but we were also beginning to get tantalizing glimpses of the way that the human brain works (Brookfield, 2003).

Throughout the 1990s, as alternative therapies and developments in neuroscience arrived thick and fast, so accelerated learning has embraced many of these too (Lucas, 2017). In schools first, Colin Rose and then Alistair Smith have been at the forefront of helping teachers to develop imaginative approaches that involve accelerated learning.

Accelerated learning combines aspects of established learning theory with brain-based approaches, in order to engage learners and speed up the process of learning. Accelerated Learning is a spin-off from Gardner's Theory of Multiple Intelligences and Neuro-Linguistic Programming (Lucas, 2017).

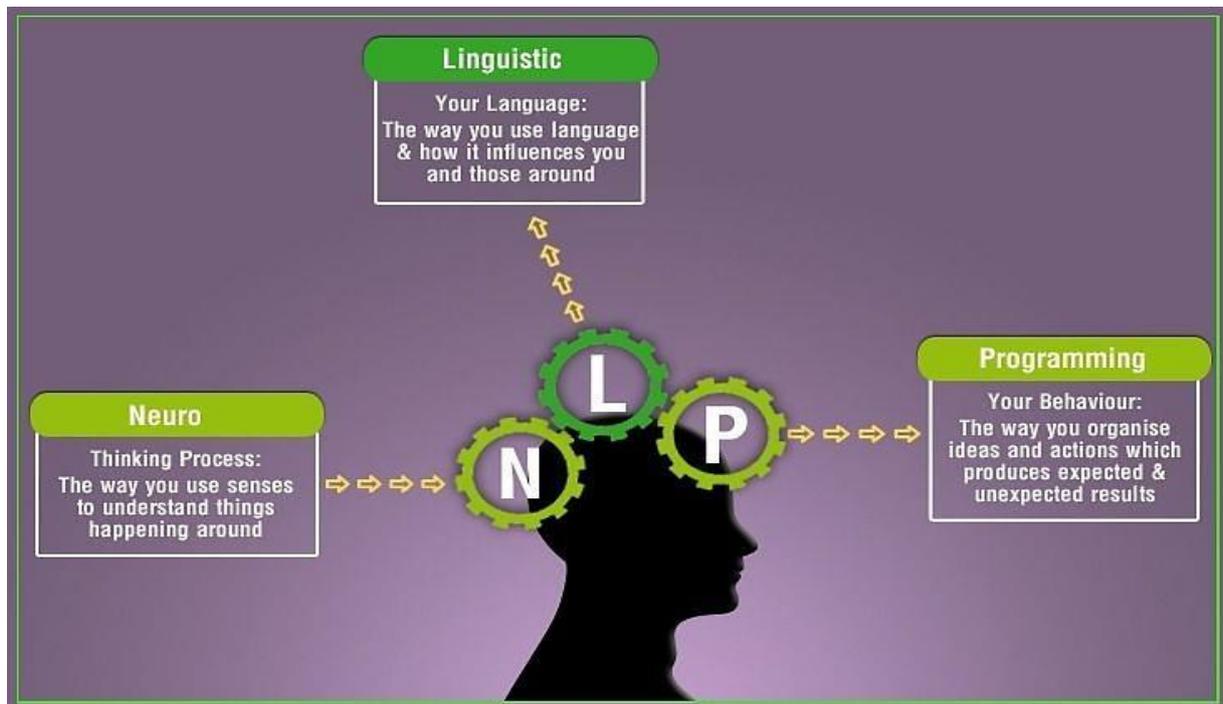## 2. 2. Neuro-linguistic Programming (NLP)

Figure 1. Neuro-linguistic Programming (NLP)

Neuro-linguistic programming (NLP) is an approach to communication, personal development, and psychotherapy created by Richard Bandler and John Grinder in California, the USA in the 1970s. Its creators claim a connection between the neurological processes ("neuro"), language ("linguistic") and behavioral patterns learned through experience ("programming") and that these can be changed to achieve specific goals in life (Dilts et al., 1980). Bandler and Grinder claim that the skills of exceptional people can be "modeled" using NLP methodology then those skills can be acquired by anyone (Bandler et al., 1976). Figure 1 shows the Neuro-linguistic Programming (NLP).

Bandler and Grinder also claim that NLP can treat problems such as phobias, depression, habit disorder, psychosomatic illnesses, myopia, allergy, common cold and learning disorders, often in a single session (Bandler, 2008). NLP has been adopted by some hypnotherapists and in seminars marketed to business and government (Einspruch et al., 1985).

While the original goals of Neuro linguistic programming were therapeutic, the patterns have also been adapted for use outside psychotherapy for interpersonal communications and persuasion including business communication, management training, sales, sports, and interpersonal influence, used for coaching, team building, public speaking, negotiation, and communication (Craft, 2001).

2. 3. Gardner's Theory of Multiple Intelligences

In the 1970s, Howard Gardner, a professor of education at Harvard University, started questioning the traditional definition of intelligence on which such tests were based. Gardner worked with talented children and adults who had brain damage (.Manichander, 2016). He found that people had many other gifts and talents that weren't necessarily reflected in the traditional ideals of intelligence. He used a variety of sources – including neurophysiological research and studies with autistic people, geniuses, and protégés – to support his model that various parts of the brain provide different types of intelligence.

The multiple intelligences theory claims that all humans have eight intelligences, to a lesser or greater extent, and that each has a different intelligence profile (Haley, 2004). This profile is based on genetics and experiences, and it makes us unique from others. Among these are shown in table 3.

Although the intelligence is anatomically separated from each other, Gardner claims that the intelligence very rarely operates independently. Rather, the intelligence is 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 (Manichander, 2016).

As the theory states that all intelligence is needed to productively function in society and teachers (Kezar, 2001). Therefore, it should think of all intelligence 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 intelligence. It also implies

that teachers should structure the presentation of material in a style that engages most or all of the intelligence. Figure 2 shows the multiple intelligences

All students will come into the classroom with different sets of developed intelligence. 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 visual, auditory and kinesthetic intake styles. Many learning styles can be found in one classroom. As children do not learn in the same way, they cannot be assessed in a uniform fashion (Manichander, 2016). 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 intelligence (Manichander, 2016). Preferred assessment methods include student portfolios, independent projects, student journals, and assigning creative tasks.

Table 3. Human eight intelligence

Human Intelligence	Description
Linguistic Intelligence	This is the ability to use spoken and written language effectively to express oneself. Lawyers, writers, and speakers tend to have high linguistic intelligence.
Logical-mathematical Intelligence	This is the ability to analyze problems logically, work effectively with mathematical operations, and investigate issues using the scientific method. Finding patterns and deductive reasoning are other capabilities associated with this intelligence. People working in the scientific and mathematical communities tend to be high in this type of intelligence
Musical Intelligence	Increase the resistance of concrete to frost action by introducing numerous tiny air bubbles into the hardened cement paste.
Bodily-kinesthetic Intelligence	This is the ability to use the body for expression. People high in this intelligence use their physical coordination to master problems. Professional dancers and athletes are good examples of this
Spatial Intelligence	This is the ability to recognize, use, and interpret images and patterns and to reproduce objects in three dimensions. Successful architects, sculptors, and designers are likely to have high spatial intelligence.
Interpersonal Intelligence	This is the ability to understand people's intentions, motivations, and desires. This intelligence allows individuals to work well with others. Professions like therapy, teaching, and sales attract individuals with high interpersonal intelligence.

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Intrapersonal Intelligence	This is the ability to understand oneself, and to interpret and appreciate your own feelings and motivations. Therapists, actors, caregivers, and writers are all people who can bring high levels of personal awareness to their work.
Naturalist Intelligence	This is the ability to recognize and appreciate our relationship with the natural world. Astronomers, biologists, and zoologists are examples of professions with a high level of naturalist intelligence. (This is the eighth intelligence that Gardner added, after the first publication of his model.
Emotional Intelligence	This is the ability to able to recognize an emotion as they are experiencing it and react to it in a way that is considered positive by the culture.
Existential Intelligence	This is the ability to know the reason for one's existence, or 'why you are here.
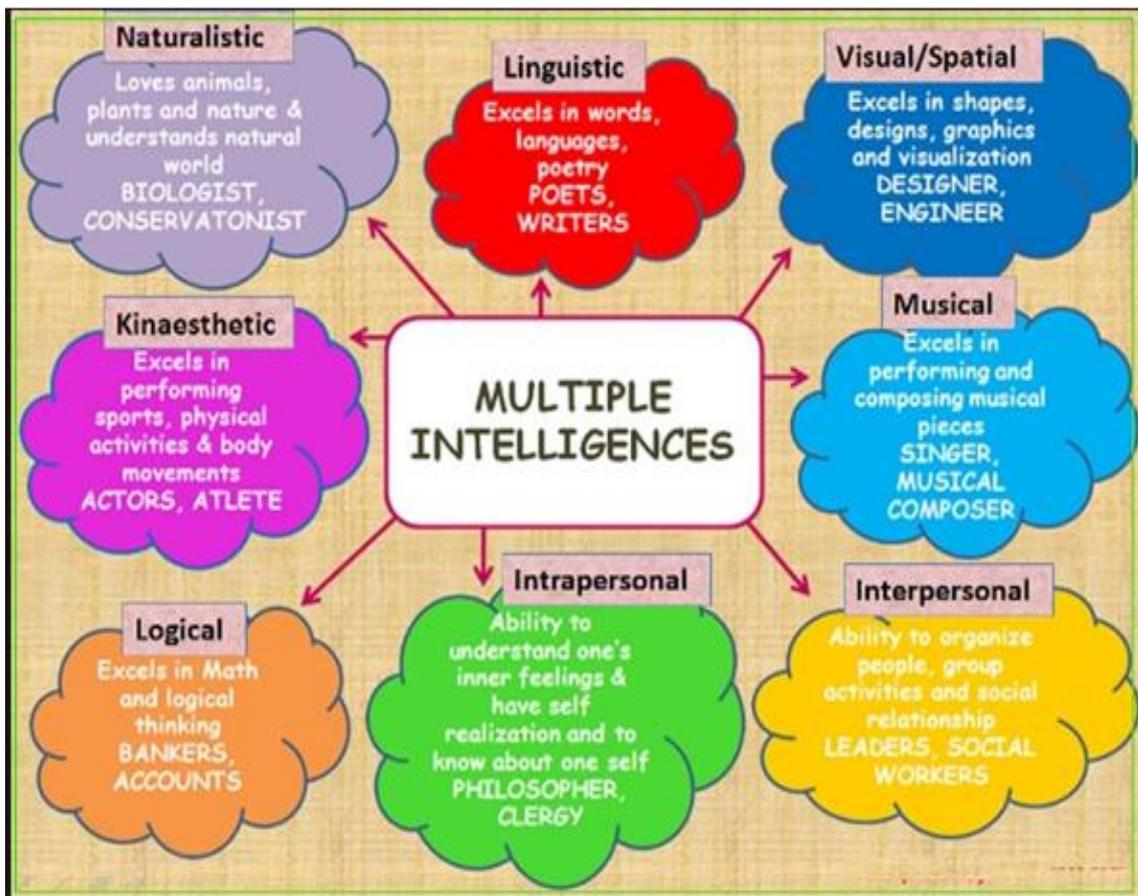
Figure 2. Multiple Intelligences

2. 4. Preparation of Accelerated Learning

All genius learning is active, not passive, and it uses both sides of the brain. Many creative techniques can be used in a variety of ways for presenting traditional course material (Lee et al., 2010). The following includes some ideas for accommodating students various styles of learning and interests to master, manipulate, and enjoy bodies of knowledge (Schornack, 1996). These are acrostics, brainstorming, buzz groups, case histories, whiteboards with color, charts, data show presentation, debate, demonstration, discussion-student lead, field trips, films/video flannelgraph, games/crossword puzzles, imagery interview in class or field, internet presentation, maps memorization, games mind-mapping, mnemonic, models, news articles, networking party, objects/objects lessons, LCD projectors in color (Ganiron Jr, 2017), panels of students or executives picture studies, problem solving, project teams (Ganiron Jr, 2015), quiz, question & answer session, reports, review in game format, multimedia (Tesoro-Martinez et al., 2014), role playing (Ganiron Jr, 2014), skits, song simulations, storytelling, symposiums & forums, tv presentation and visualizations.

Teachers must use a variety of teaching styles because students learn in a variety of ways. Many adult students have not discovered they have a personal style of learning that can be used to motivate and accelerate, their learning process (Ganiron Jr, 2016). Figure 3 shows teaching aids in teaching environmental control system course

Once students know their best learning style, they can take advantage of this strength in the learning process. In an ideal learning environment, the pace and teaching style should change every 20 minutes.
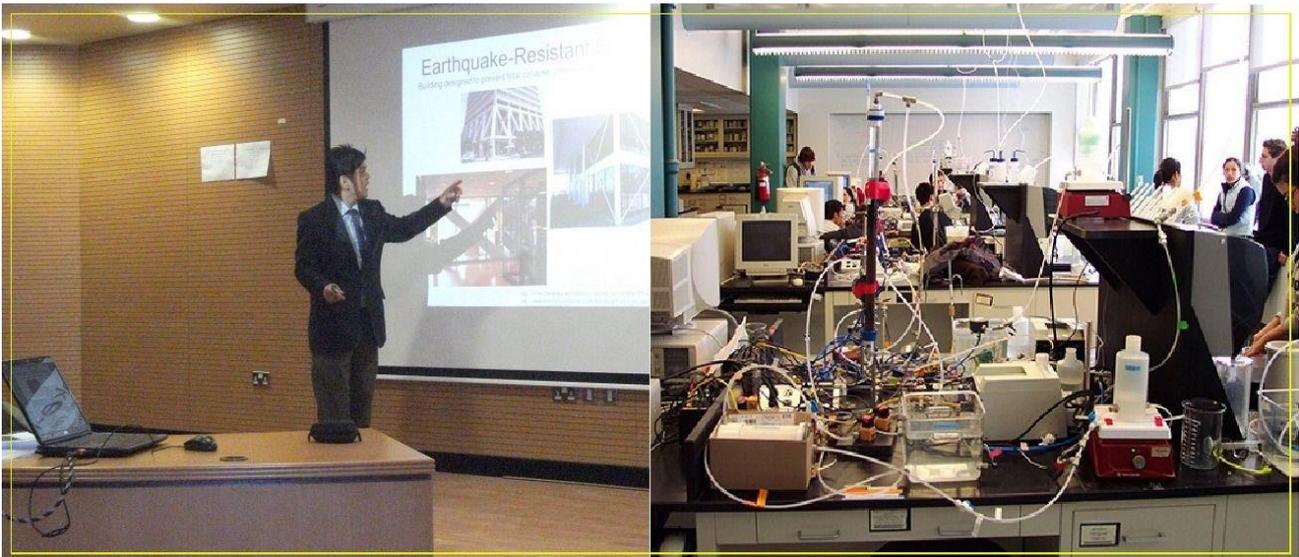
Figure 3. Teaching aids in teaching environmental control system course

Adults learn best when they are active, so they should have input and decisions about what, where, when, how, and why to learn. If everything a student really wants to do is forbidden or unavailable, boredom will permeate the classroom. Figure 4 shows the ways of presenting accelerated course material

Figure 4. Ways of presenting accelerated course material

3. APPROACHES TO TEACHING

As a teacher of the environmental control system, the researcher uses many different methods to deliver lessons in the classroom. The researcher is generally free to choose the kinds of methods he uses in his classrooms, so it's good to look at different teaching methods and their various benefits to the learners. To do this he'll first describe methods used traditionally in classrooms, and then compare them with the approach favored for ALP classrooms
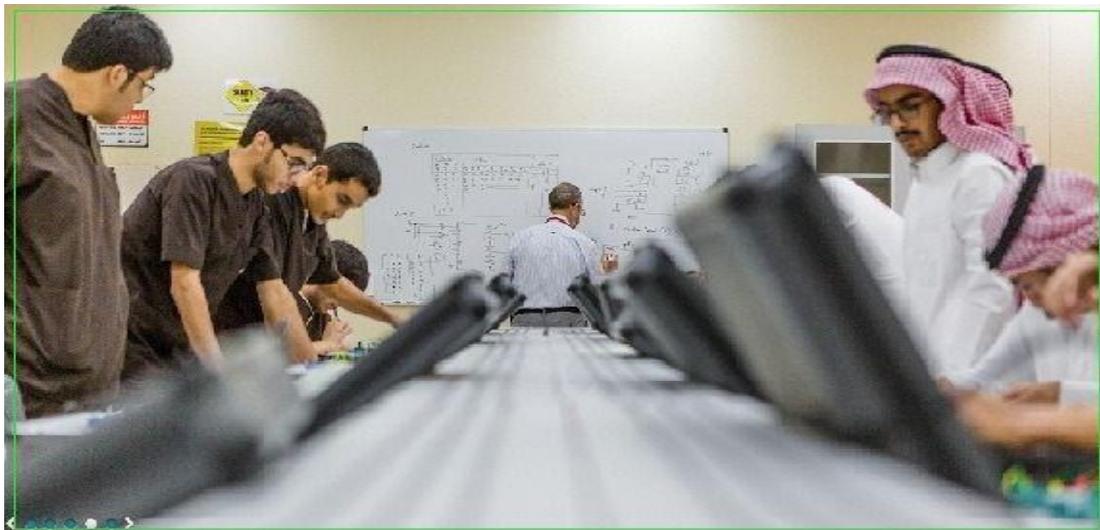
3. 1. The Traditional Classroom
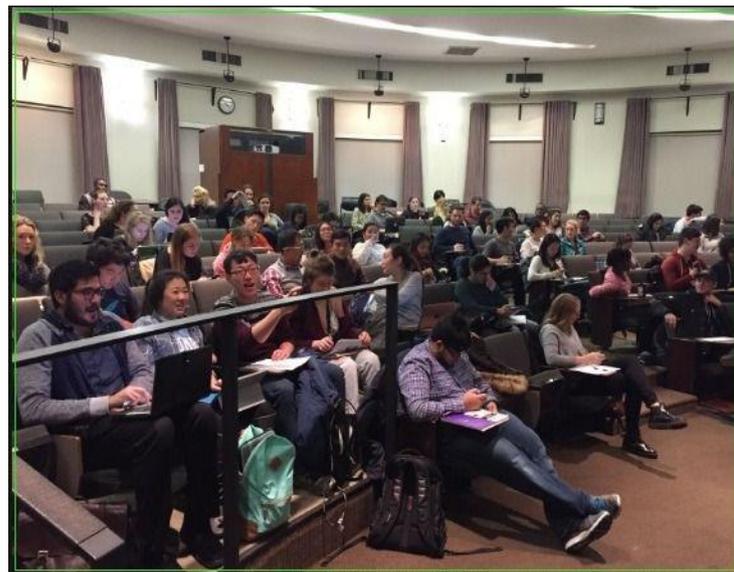
Figure 5. The Traditional Classroom

Traditionally the aim of education is to pass a certain body of knowledge to the learners (ALP Teacher's Handbook, 2017). Traditional methods involve mostly lectures by the teacher and rote written assignments by the learners (McCarthy et al., 2000).

There are little student participation and a low level of independent thinking. In general, traditional methods: focus on passing information to the learners, give the class a formal atmosphere, allow learners to speak only when called on, allow only the best learners to answer questions and allow little participation by slower learners in the class (Kember et al., 2002). Figure 5 shows the traditional classroom where students are sleeping and bored while the teacher is lecturing.

3. 2. The Learner-Centered Classroom

The philosophy behind the learner-centered approach is that students learn more effectively and develop important skills if they participate in their own learning (ALP Teacher's Handbook, 2017).

Figure 6. The Learner-Centered Classroom with General Classroom Activity

Table 4. Comparing Approaches with Classroom Activities

Traditional Approach	Learner-Centered Approach
1. Presentation of New Material • The teacher explains or presents the new topic while the learners listen. • Learners listen passively. • The teacher doesn't consider the learners' prior knowledge; the teacher may repeat information the learners already know.	**1. Presentation of New Material** • The teacher encourages the learners to give information they know about the new topic. • The teacher encourages discussion on the topic. • The teacher considers the learners' prior knowledge on the subject.

2. Questioning • The teacher asks all the questions. • The best learners in the class answer the questions. • Questions are about the facts of a lesson. Each question has only one correct answer. • The teacher does not encourage or allow learners to ask questions.	**2. Questioning** • The teacher uses activities where all the learners can ask and answer questions. • The teacher asks questions that probe for understanding and encourage critical thinking. Some questions have many possible answers. • The teacher asks questions to all members of the class, asking easier questions to slower learners. • Learners are encouraged to ask questions and feel free to ask questions anytime.
3. Reading Comprehension • The reading passage may be too difficult for the class and contain many new words. • One learner stands and reads while the others sit passively. • The topic of the reading may not be relevant or interesting to the learners. Vocabulary isn't revised or repeated in future lessons	**3. Reading Comprehension** • There aren't more than five or ten new words per page. • All the learners have a chance to read. • The topic of the reading is interesting to the learners and will encourage thinking. Vocabulary is repeatedly used in future lessons.
4. General Classroom Activities • The teacher leads all activities. • One learner is called to the blackboard to solve problems and do written activities. •The teacher stays in front of the classroom. • The teacher pays more attention to fast learners and less attention to slow learners. • The teacher may pay more attention to boys and not be gender-sensitive. • The teacher doesn't use visual aids. • The teacher sets strict time limits and expects all learners to finish a task at the same time.	**4. General Classroom Activities** • The teacher encourages group and pair work. • All learners do problems and written activities. • The teacher moves around the classroom checking learners' work and talking to individual learners. • The teacher is gender sensitive and gives extra encouragement to girls. • The teacher uses visual aids in class as often as possible. • The teacher allows learners to work at their own pace

In a learner-centered environment, the students don't sit passively and listen but are active at all times. Figure 6 shows the learner-centered classroom with general classroom activity (ALP Teacher's Handbook, 2017).

There's an emphasis on critical thinking skills and problem-solving to help learners adapt to the challenges of a modern world. In a learner-centered classroom, the learners have the opportunity to solve problems, express their opinions, and think and write creatively (Polly et al., 2010). Table 4 shows comparing traditional approach from learner centered approach with classroom activities

4. RESEARCH DESIGN AND INSTRUMENTATION

One of the architecture courses in Qassim University is Environmental Control System, a 2-unit subject offered in level 4 of every semester. Environmental Control System is the capstone course in architecture since it presents the basic principles of the selection and the design of the main environmental control systems in buildings, including plumbing, heating, ventilation, air conditioning, electric, protection systems. Until now, there has been no comparative study on learning in the accelerated learning and traditional learning in the environmental control system. Many researchers have studied the relationship between class time and content mastery in the academic setting. Karweit (1984) and Walberg (1988) have studied the relationship between class time and learning. From their findings, class time is essential but not a primary factor for learning.

Accelerated courses are often structured in condensed formats that use weekend and evening classes, workplace programs, and distance learning. These courses are designed for students to do more work (to learn the material) independently outside of class. The objectives of the courses are the same as those of the traditional learning. In order to understand how effective accelerated techniques in environmental control system as a learning format are, a two-year study was conducted involving years in the College of Architecture at Qassim University, SY 2014-2015 (traditional learning) and SY 2015-2016 (accelerated learning)

4. 1. Research Design

The researcher made use of the descriptive research method. Specifically, the use of the descriptive research method in the study involved the effectiveness of accelerated for student learning; the impact of this learning on students' grades; and students opinion & level of satisfaction on accelerated learning.

The College of Architecture has enrollees of 44 students in the environmental control system course for SY 2014-2015 and 46 students enrolled in the same course for SY 2015-2016. They are the respondents in the study.

In this study, the same instructor taught environmental control system in the traditional learning and the accelerated learning in the College of Architecture at Qassim University using the same text, the same syllabus (the same objectives), and the same exams (quizzes, midterm exams, and final exam).

The study compares the final grades of students as well as anonymous course evaluation surveys. In the traditional learning, the teacher has only one hour to lecture and interact with students three to four times a week. This sometimes leaves the teacher with little or no time for innovative teaching (pedagogy or teaching methods) or time for students to work effectively together in class.

The accelerated learning accommodates innovative teaching and learning opportunities due to three hour a day class time. As a result of this, students have more time to interact with peers and work effectively together and with the teacher.

The study focuses on course grades due to the fact that colleges and universities use grades as one of the major components for admission and evaluation of student performance in the course. The content mastery of students was measured based on their total quiz and exam points.

The accelerated learning, the passing grade in the course was 70% or higher, while in the traditional learning, the passing grade was 60% or higher. This study looks at the

percentage of students with grades of seventy 70% and above each year during the two-year period of the study.

4. 2. Instrumentation

The major tool for data gathering was the questionnaire. The questionnaire was divided into 3 parts. The first part, the architecture students of SY 2014-2015 were asked to answer the level of confidence of the multiple intelligences gained from the traditional format. The second part focused on the architecture students' level of confidence of the multiple intelligences by using the accelerated format of the architecture students of SY 2015-2016. The third part focused on the architecture students' level of satisfaction by using the traditional and accelerated formats.

The questionnaire on the level of confidence of the Architecture Students on the Multiple Intelligences gained from different formats of learning is designed to induce the independent perception of the respondents with the use of a four (4) Likert scale. As shown in table 5 the descriptive ratings of the mean values of the indices used are as follows:

Table 5. Level of Confidence of the Architecture Students on the Multiple Intelligences Gained from Different Formats of Learning

Mean	Weight	Interpretation	Abbreviation
3.51-4.00	4	Very high	VH
2.51-3.50	3	High	H
1.51-2.50	2	Little	L
1.00-1.50	1	Very Little	VL

A commonly used 5-point Likert scale format to measure the level of satisfaction is shown in table 6.

Table 6. Level of Satisfaction of the Architecture Students Gained from Different Formats of Learning

Mean	Weight	Interpretation	Abbreviation
4.51-5.00	5	Very Satisfied	VS
3.51-4.50	3	Satisfied	S
2.51-3.50	3	Ok	O
1.51-2.50	2	Dissatisfied	D
1.00-1.50	1	Very dissatisfied	VD

After the retrieval of the questionnaire, the data were encoded and entered into the master list. Data analysis was done using the percentage score and mean.

5. RESULTS AND DISCUSSION

5. 1. Learning outcome by traditional learning

Data in table 8 shows that majority of the architecture students received a grade, 18.18% obtained a grade of "D" (60-64), 15.91% received a grade of "C" (70-74), 13.64% had a grade of "C+" (75-79) and 11.36% earned grades of "B" (80-84), "D+" (65-69) and "F" (<60). Very few architecture students received a grade, 2.27% obtained a grade of "A+" (95-100), 6.82% received a grade of "A" (90-94) and 9.10% earned a grade of "B+".

The result of the % of students with 70% and above is 59.10 which means that there is a problem in the level of motivation of the students and teachers' knowledge about teaching methods.

Table 8. Frequency and Percentage Distribution of learning outcomes by Traditional learning for SY 2014-2015 (n = 44)

Letter Grade	Range	Frequency	Percentage
A+	95-100	1	2.27
A	90-94	3	6.82
B+	85-89	4	9.10
B	80-84	5	11.36
C+	75-79	6	13.64
C	70-74	7	15.91
D+	65-69	5	11.36
D	60-64	8	18.18
F	<60	5	11.36
% of students with 70% and above		26	59.10
Total		44	100

5. 2. Learning outcome by accelerated learning

Data in table 9 shows that majority of the architecture students received a grade, 23.91% obtained a grade of "C" (70-74), 19.51% received a grade of "B" (80-84), 15.22% earned grades of "B+" (85-89) and "C+" (75-79), and 13.04% had a grade of "A" (90-94). Very few architecture students received a grade, 2.17% obtained a grade of "D" (60-64), 4.35% received a grade of "D+" (96-69) and 6.52% earned a grade of "A+" (95-100).

Table 9. Frequency and Percentage Distribution of learning outcomes by Accelerated learning for SY 2015-2016 (n = 46)

Letter Grade	Range	Frequency	Percentage
A+	95-100	3	6.52
A	90-94	6	13.04
B+	85-89	7	15.22
B	80-84	9	19.57
C+	75-79	7	15.22
C	70-74	11	23.91
D+	65-69	2	4.35
D	60-64	1	2.17
F	<60	0	0.00
% of students with 70% and above		43	93.48
Total		46	100

The result of the % of students with 70% and above is 93.48 which is higher than the traditional learning. This provides some evidence that the accelerated technique is an effective method for learning, and time has little or no effect on academic achievement

5. 3. Mean Responses of the Architecture Students of SY 2014-2015 on the Level of Confidence of the Multiple Intelligences Gained from the Traditional Format Learning

Table 9 implies that the architecture students of SY 2014-2015 perception that the level of confidence to demonstrate multiple intelligences learned from the traditional learning

format has an overall mean of 2.02 which is little. The intelligence learned from the teacher has a mean between 1.50 and 2.59.

Table 9. Mean Responses of the Architecture Students of SY 2014-2015 on the Level of Confidence of the Multiple Intelligences Gained from the Traditional Format (n = 44)

Intelligence	Outcomes	Mean	Verbal Interpretation
Interpersonal	My ability to lead as a team as well as manage them to show no sign of abating and inspire others.	2.00	Little
Logical-mathematical	I am able to categorize HVAC information and discover their relationships	2.48	Little
Spatial	I am able to use Autocad to draw and use the flowchart to illustrate the air conditioning system.	2.59	High
Musical	I am able to create and use songs to illustrate concepts in the environmental control systems	1.52	Little
Linguistic	Listening to an oral presentation has given me knowledgeable about the environmental control topics.	2.00	Little
Intrapersonal	I am able to evaluate a case study in plumbing system and noise pollution by using SWOT analysis	1.73	Little
Kinesthetic	I am able to move my bodies to skip in a game to memorize the structural building codes.	1.57	Little
Emotional	My ability to communicate in a clear, concise, and courteous manner made me as good leader	2.29	Little
Naturalist	My ability to have real empathy with nature made me an environmentalist.	1.50	Very Little
Existential	I learn about the effects of hazards on personal well-being which allows me to think of mortality that may somehow be linked to thoughts of one's purpose in life.	2.50	Little
Overall Mean		2.02	Little

Most of the architecture students who used traditional learning have little intelligence in existential, logical mathematical, emotional, interpersonal, linguistic, intrapersonal, kinesthetic and musical.

The traditional learning of the architecture students affects their intelligence in interpersonal, kinesthetic, linguistic, existential and intrapersonal. During the classroom visits in other architecture courses, students were trained by the Egyptian architecture teachers to memorize their lessons without understanding by giving exercises and examinations such as true or false, fill in the blanks, matching type, enumeration, and multiple choices. This is because Egyptian architecture teachers have limited English proficiency in terms of reading, writing and speaking, and lack of professional development in architecture education. There were few architect teachers who use essay, argumentation & debate, class recitation and problem solving as a test for other architecture students intelligence. Moreover, architecture students were not given a chance to enhance in other intelligence because their Egyptian architecture teachers have little range of knowledge in terms of pedagogy.

With regards to have architecture students little intelligence in logical mathematical, the College of Architecture offered only one mathematics course in the 4 years curriculum compared to other universities in Saudi Arabia who have more than two mathematics in the curriculum of Architecture. This affects their intelligence in mathematics which is essential in the design of building structures, surveying, and environmental control system. As of SY 2016-17, the curriculum made by the Egyptian Department Head for the Bachelor of Architecture and Masters' degree in Architecture were not approved by the National Architectural Accrediting Board (NAAB) because some of the architecture courses are not substantial to the learners of the students and besides is it not accordance with the curriculum guidelines. However, architecture students are still enrolling these programs.

Architecture students have little intelligence in music because it is prohibited in the religion of Islam. They are very conservative in terms of religion and culture.

Moreover, architect students have a very little intelligence in naturalist. This is because architect students focus on the technologies that satisfy their needs. Most of them don't mine in preserving their natural resources and the effect of natural disasters that might destroy to their community.

However, architect students have a high spatial intelligence. Before they become an architect student, they were trained to use drawings, flowchart, and illustrations in their high school project.

5. 4. Mean Responses of the Architecture Students of SY 2015-2016 on the Level of Confidence of the Multiple Intelligences Gained from the Accelerated Format (n = 46)

As shown in table 10, respondents' perception that the level of confidence to demonstrate multiple intelligences have an overall mean of 3.10 which is high. Intelligence gained from the accelerated format learning has a mean between 1.60 and 3.65

An architecture student who developed their intelligence in the accelerated format learning has a very strong in spatial and linguistic. This accelerated learning was able to gain more knowledge in the latest versions of AutoCAD to draw and use flowchart in illustrating the air conditioning system in three dimensions (spatial). Moreover, listening to an oral presentation has given an architecture student knowledgeable about the environmental control topics (linguistic).

Table 10. Mean Responses of the Architecture Students of SY 2015-2016 on the Level of Confidence of the Multiple Intelligences Gained from the Accelerated Format (n = 46)

Intelligence	Outcomes	Mean	Verbal Interpretation
Interpersonal	My ability to lead as a team as well as manage them to show no sign of abating and inspire others.	3.33	High
Logical-mathematical	I am able to categorize HVAC information and discover their relationships	3.39	High
Spatial	I am able to use Autocad to draw and use a flowchart to illustrate the air conditioning system.	3.65	Very High
Musical	I am able to create and use songs to illustrate concepts in the environmental control systems	1.60	Little
Linguistic	Listening to an oral presentation has given me knowledgeable about the environmental control topics.	3.60	Very High
Intrapersonal	I am able to evaluate a case study in plumbing system and noise pollution by using SWOT analysis	3.35	High
Kinesthetic	I am able to move my bodies to skip in a game to memorize the structural building codes.	3.15	High
Emotional	My ability to communicate in a clear, concise, and courteous manner made me as good leader	3.45	High
Naturalist	My ability to have real empathy with nature made me an environmentalist.	2.61	High
Existential	I learn about the effects of hazards on personal well-being which allows me to think of mortality that may somehow be linked to thoughts of one's purpose in life.	2.76	High
Overall Mean		3.10	High

Moreover, the application of accelerated improve architect students intelligence such as interpersonal, logical mathematical, intrapersonal, kinesthetic, emotional, naturalist and existential. The improvement of architecture students' intelligence adopts a permanent mindset in which every situation offers some sort of valuable experience or takes away rather than memorizing scripted answers and reciting them through multiple-choice tests, these

architecture students develop new intelligence that can help them throughout the rest of their lives.

However, architecture students have little intelligence in music. In the teacher evaluation by the architecture students conducted during the SY 2015-2016, music disturbed other learners in adjacent classrooms. Likewise, musical expressions are different to the rules of grammar and this can be misleading, resulting in mistakes.

In figure 7, most of the multiple intelligences of architecture students of SY 2015-2016 on the level of confidence gained from the web-enhanced format learning are higher compared with the architecture students of SY 2014-2015 on the level of confidence of project management skills gained from the traditional format learning.

However, multiple intelligences such as music have almost exactly the same amount of level of confidence in terms of learning. This means whether it is the traditional or accelerated format in this intelligence, the level of confidence gained from the different formats of learning will always be little. This is because music is not allowed in Qassim University. Music is considered forbidden since school curricula must follow the rules of Islam (Halstead, 1994). Muslims believe that Music is sinful in Islam (Otterbeck, 2004).
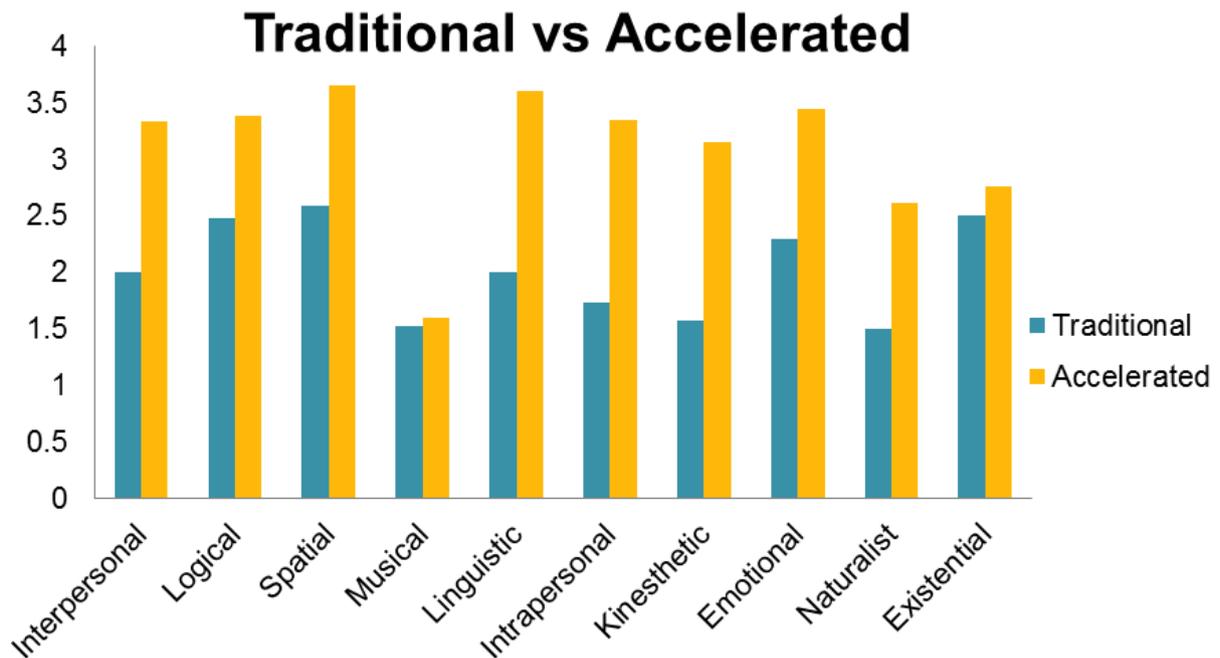

Figure 7. Traditional versus Accelerated learning formats

5. 5. Level of Satisfaction in Environmental Control System Course

Table 11 shows that 12 architecture students (27.27%) were very satisfied in the traditional learning. This result was followed that they are ok (11.36%) and 9.09% answered that they are satisfied. However, most of the architecture students (38.64%) were very dissatisfied in the traditional learning and 6 architecture students (13.64%) revealed that they are dissatisfied. Based on the observations with the architecture students of SY 2014-2015, architecture students are not satisfied with the traditional format because they are shy students

who allowed them to attend classes without providing alternative ways to communicate ideas. Forcing architecture students to learn by vocal exchange with a teacher may limit their ability to learn. Another is the classrooms environments tend to group architecture students together in a large number often making it difficult for teachers to isolate learning deficiencies and provide the necessary close attention that individuals may need to learn. Using the traditional format, architecture students become weak in such skills such as problem-solving, critical thinking and higher order learning skills. The classroom setting can also hinder one's ability to learn by allowing other more vocal students to dominate the bulk of the discussion environments. Quieter architecture students are limited in their communication options for exchanging ideas and information.

Table 11. Frequency and Percentage Distribution of Level of Satisfaction in Environmental Control System Course

Interval scale	Level of satisfaction	Traditional learning		Accelerated learning	
		Frequency	Percentage	Frequency	Percentage
5	Very Satisfied	12	27.27	33	71.74
4	Satisfied	4	9.09	7	15.22
3	Ok	5	11.36	3	6.52
2	Dissatisfied	6	13.64	2	4.35
1	Very dissatisfied	17	38.64	1	2.17
Total		44	100	46	100

On the other hand, a majority of architecture students (71.74%) were very satisfied in the accelerated learning. This result was followed that they are satisfied (15.22%) and 6.52% answered that they are ok. It would appear accelerated learning would have higher success rates due to short time needed to master new learning and apply it effectively to their field. The emphasis of accelerated format is on accelerating and deepening the learning, not speeding up the amount of teaching or material covered. However, few architecture students (4.35%) were dissatisfied in the accelerated learning and 1 architecture student (2.17%) revealed that they are dissatisfied.

Some architecture students revealed that one important aspect of accelerated learning is its sociality. They claimed that their accelerated learning class in environmental control system encourage them to work together in order to solve problems, which helps to boost the social skills of everyone involved. This also affords the architecture students to have an opportunity to continuously hone the multiple intelligences that they have developed throughout the class by using them in their interactions with each other.

6. CONCLUSIONS AND RECOMMENDATIONS

Incompetent teachers represent a large proportion of the teaching force since the number of students who are being taught by such teachers is worthless. The Administration of Qassim University has advanced numerous solutions: cleaning the architecture teaching profession by dismissing all incompetent teachers; restricting entry into the architecture teaching profession by means of competency tests; conducting a teaching demonstration in English; and upgrading the quality of preserve education by adopting accelerated learning techniques.

The lack of clear-cut standards, along with the extensive legal protections afforded tenured teachers and failure to pass the National Commission for Academic Accreditation and Assessment (NCAAA) examination, means that proving incompetence is a highly problematical, time-consuming, and costly undertaking for the College of Architecture in Qassim University. As a result, the researcher found, the college dean is inclined to tolerate the poor performer unless he is such a blatant failure in the classroom that no one doubts the appropriateness of the label 'incompetent'. Marginal teachers who are incompetent but are the target of few student complaints are apt to be endured, if not ignored.

Architecture student complaints play an extremely important role. Such complaints signal that something may be radically wrong in a teacher's classroom and may stimulate a closer look at what is happening. Architecture student complaints also exert pressure on the college dean to deal with the poor performer.

Most proposals for this college reform assume that teacher incompetence is due to a lack of cognitive skill or inability to speak English. But the roots of incompetence are much more complex, the researcher suggests that reformers have assumed. Rarely is a teacher's poor performance due to a single cause, such as English proficiency, insufficient skill, ability, or effort. More commonly, unsatisfactory performance stems from other sources as well, such as traditional teaching and inadequate supervision.

Under these conditions, improving the performance of an incompetent teacher is a formidable challenge. It is unlikely that something akin to a miracle drug will ever suffice as a cure for teacher incompetence (Ganiron Jr, 2014). The extent of an incompetent teacher's difficulties in the classroom and the causes that underlie these difficulties are simply too far-reaching.

The adoption of the principles of the accelerated learning benefited the architecture students in that they learned more, faster, and better, was able to apply what they learned in environmental control system class in working on their projects, and became better and more creative innovators.

Among the techniques used in this course, lectures using LCD projector and Environmental Control Simulation Software have been high in tapping the number of intelligence. 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 (Ganiron Jr, 2014). The use of the other techniques such as individual and group activities is more involving and fun to the architecture students. The learning facilitator noted that mapping out the intelligence for each instruction technique allows one to be more aware of the distinctions among the architecture students with respect to their learning styles (Ganiron Jr, 2014).

If an instruction technique addresses most of the students' intelligence, 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 architecture students 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.

It can also be concluded that student learning of environmental control system in the accelerated learning is more effective than the traditional learning. Possible explanations for this outcome might be due to the fact that the students in the accelerated learning have to focus only on one subject as compared to students in the traditional learning where they have to deal with other courses. Students in the accelerated learning strive for excellence because the learning allows them to focus deeply on one subject in an environment which stimulates learning plenty of class time; expert instructors, peer tutors, and the stakes are high. From the findings, there is no doubt that the cognitive skills and English proficiency of the students in the accelerated learning improve more than the students in the traditional learning.

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