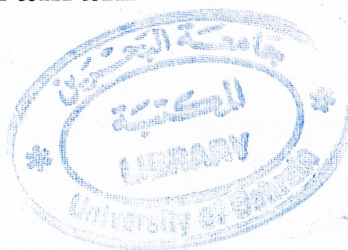


University of Bahrain



**The Effects of Using Creative Thinking Activities in
Learning English on Third Secondary Commercial
School Students' Creative Skills**

By:

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**A dissertation presented to the Faculty of Education in
Partial fulfillment of the requirements for the degree of**

**Master's of Education
(Curricula Development)**

April, 2003

DECLARATION

I declare that this work is the result of my own investigation and that it has not already been accepted in substance for any degree, nor is it being currently submitted for any degree.

Hasan Mohsin AlWadi (Candidate)

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Date: 22/4/2003

The Thesis defence committee considers the Thesis title:

EFFECTIVENESS OF CREATIVE THINKING ACTIVITIES ON THIRD SECONDARY COMMERCIAL SCHOOL STUDENTS IN THE KINGDOM OF BAHRAIN

Submitted by Hasan Mohsin Hasan AlWadi to the Department of Curricula and Instructions satisfactory and acceptable for the Master's of Education degree in Curricula Development.

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To the pure spirit of my grandfather AbulWahab,

who always supported me ...

Helped me ...

And wanted me become successful

ACKNOWLEDGMENT

This thesis would not have been accomplished without those who have always been there with me at good times and bad times, at laughter and tears at joy and sorrow. I would like to thank Almighty God for his loving care, inspiration, and assistance.

I would especially like to acknowledge my debt to my advisor Dr. Fatima Al-Ahmed of the College of Education, University of Bahrain for her continuous valuable advice.

I am grateful To Dr. Ali Loury, from the Arabian Gulf University, who contributed into the accomplishment of this work.

Appreciation is expressed to Dr. Hasan Marhama, from the University of Bahrain, for his valuable advice and revision.

Sincere thanks are sent to Dr. Sameer Ellia and Dr. Abbass Addebi for their support and assistance during the editing period.

Last but not least, I am thankful to my wife Amal for her patience and tolerance during my study, to my mother whose prayers and encouragement have been inestimable. I extend a warm thank you to my father Mohsin for his support and influence and all my brothers and sisters who were very supportive in this endeavor.

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Abstract:

The purpose of this study was to investigate the effects of applying creative thinking techniques: perception, divergent thinking and convergent thinking in developing students' ability to learn English as a foreign language.

The study focused on:

1. The normal performance of the students when doing exercises in English.
2. A suggested unit based on the three approaches: perception, divergent and convergent thinking to be taught to the students, after the pre-test.
3. The students expected performance that after being exposed to a training session on a unit based on the three approaches to develop their thinking abilities.

Quantitative research methods were utilized in data collection and analysis. Two types of data were collected. These were: the Pre- Post Tests and the suggested unit. The participants of the study were 279 students learning English as a foreign language and they were distributed among four commercial school: two for the boys and two for girls. These participants were chosen randomly and they had been formed as one independent group for the purposes of the experiment following the pre-test.

The experiment was conducted in October 2001 and lasted for two weeks. The researcher was one of the teachers who taught and trained students on the exercises mentioned in the unit with the help of other teachers with whom each component

of the unit and the tests had been discussed. These teachers were the senior teachers of the English in their schools.

The experiment started when the students were given a pre-test including 12 items based on the approaches mentioned before. The items were related to the students' specialization, which was commerce. After doing the pre- test, the researcher started teaching the students the unit and practising exercises, which were designed according these three approaches. After a period of two hours, the researcher exposed the students to a post-test as a post-test to find out the improvement in the students performance.

The data analysis revealed the following results:

1. The post-test scores were an improvement on the pre-test.
2. The spread of marks was reduced and there was a substantial increase in the generation of ideas.

In general, the results of this study supported the claim that creative thinking approaches develop students' performance in learning English as a foreign language.

To sum up, the data indicated an improvement in performance and development in generating ideas.

Chapter (1)

The study problem

Introduction:

Educators, researchers, and professionals in the business community have long lamented that students are not acquiring the high level of thinking and problem solving skills needed to confront our rapidly changing world and the problems facing society as a whole (Nickerson, 1994).

This is despite the attempts at all levels of education to deal with the sometimes elusive concepts of ‘creative thinking’.

It is believed that much of the thinking done in formal education should emphasize the skills of analysis, teaching students how to understand claims, follow or create a logical argument, figure out the answer, eliminate the incorrect paths, and focus on the correct one (Patrick, 1986).

As a result, creative thinking has been a long-standing major goal in education in recent decades. Research studies prove that applying creative thinking approaches to content allows students to deeply engage with the knowledge (Giggs & Moore, 1993).

Many educators who claim that creative thinking approaches such as perception, convergent thinking and divergent thinking have become pre-requisite to deal with the issues and problems facing the world today (Al-Ahmed, 1994).

Furthermore, it has been proved that utilizing some of the creative thinking activities in the learning process inside the class will enhance students' performance to gain the skills needed such as writing and speaking when teaching a language or deductive skills when doing a project for a subject. Therefore including units which contain creative activities will be very beneficial. This act is not to replace the content material, but rather as a vehicle for increasing students' depth of knowledge (Harris, 1998).

A number of study's findings provided a strong support for the previous assumption. Carroll (1991) made her study upon forty-eight seventh-grade students on her way to recognizing the effect of creative thinking talents program on students' performance in the classroom. She divided the sample class into four groups based on creative thinking scores and intelligence scores. The results showed that on some measures of problem solving, imagery and mathematics, the highest scores were achieved by the high-intelligence/high-creativity group. For other achievement assessment, creativity did not add to performance and even appeared to depress results.

Snyman (1991) attempted to examine the effect of problem-solving and creative thinking training program on structured second language teaching. He presented an educational method of role taking as a means of teaching communicative competence in a second language acquisition. The class called for encouragement of student "creative work" and "coping with" the learning materials. A sample lesson used

in South Africa with students aged between 11 and 13 learning English as a foreign language showed the obvious improvement in those students' learning of the language.

Overton (1993) investigated the effects of thinking skills' instruction on academic achievement and on the development of critical and creative thinking skills of second, fourth, and sixth grade students. The sample of the study consisted of 82 students with 41 in each of the control and experimental group. A quasi-experimental design was used to conduct the study. The students in both groups were presented with Criterion Reference Tests of Talents (CRT), Form A. The Stanford Achievement Test (SAT), Form K, was the source for presenting academic data for the fourth grade experimental and control group. The experimental group received a full academic year (26 weeks) of formal thinking skills instruction based on the Talent Unlimited (TU) model. The results indicated no significant differences at the second grade level, while significant differences in the fourth grade groups were obtained in the talent areas of productive thinking, communication and forecasting. Significant differences also occurred in the academic areas of mathematics and language. In the sixth grade, significant t values were obtained in the talent areas of productive thinking, decision-making and planning. The researcher concluded that thinking skills' instruction has such influence in developing creative and critical thinking skills for learners. He also concluded that thinking skills' instruction had a significant impact on the academic achievement of students.

Zeilinski (1994) designed lessons based on critical and creative thinking approaches and presented them to 20 biology students in a rural high school. The researcher found a significant improvement in students' attitudes toward creative thinking activities after exercises involved experimentation, student questioning and divergent thinking.

Hamza (1997) studied the relations between creating and fostering a learning environment and developing creative thinking and problem solving skills. The study explored the teaching methods and classroom climates created by teachers and it concluded that teachers should foster a classroom-learning climate toward the promotion of creative thinking.

Callison (1998) examined creative thinking in relation to modern instructional programs and information literacy and compared creative and critical thinking. The study discussed teaching for thinking, techniques for sparking creativity, and activities for creating a mental museum.

Joan (1989) made her study upon 64 high school students to investigate the possibility of adopting the creative activity as an equivalence to the traditional school work and activity. With focusing on the language arts and social studies, the study findings showed that the students in the creative arts are no less scholarly, but their scholarly efforts are less quantifiable. The study recommended a rationale framework for accepting creative works as scholarly equivalents is developed by examining creativity, the creative process, and the creative product through a designed module.

Vaughan (1982) discussed the relationship between creative activities and other processes within the individual. The researcher designed a programme to 50 students in the local schools in order to observe the social and personal perspectives of them. The researcher attempted to determine the type of the relationship as are being adaptive, elaborative, or developmental facets. One of the study implications was that the teaching process should include the need for understanding the importance or reconciling the emotional forces of creative thinking within discipline.

From all the above, it can be concluded that applying creative thinking activities have their obvious influence on enhancing students' achievement and performance. However, this is not being reflected in the formal school curriculum (AlAbdulla, 1992).

Statement of problem:

This study attempted to answer the following research questions:

1. How effective is the teaching of creative activities on students thinking abilities in the classroom?
2. To what extent do the proposed activities affect the developing of each of perception, convergent thinking, and divergent thinking within the study sample?

Hypothesis of the research:

The hypotheses to be tested for the above questions would be:

1. The activities perception, convergent thinking, and divergent thinking affect the students' creative abilities.
2. The proposed activities (perception, convergent thinking, and divergent thinking) develop the learning process.
3. Each of the variables of perception, convergent thinking and divergent thinking contributes significantly to a certain proportion of creative thinking.

The Study objectives:

The objectives of the study were:

1. To examine the effect of the developed activities, which are based on the perception, convergent thinking, and divergent thinking skills, on the third secondary students' learning of English.
2. To what extent does the treatment programme effective in developing students' thinking skills while learning English.

The Study significance:

The importance of the study can be presented in the following points:

1. Study the effectiveness of suggested exercises to form a unit based on creative thinking approaches in learning English language for the third level business secondary school students.

2. Emphasize the importance of creative thinking approaches in developing the thinking and linguistic abilities of the students in the third level of a secondary school.
3. Adopting new and modern attitudes in education that emphasize the importance of developing teaching and learning methodologies in the English language.
4. Showing the importance of implementing creative thinking approaches when teaching and learning English for the third level students in secondary school.

Limitations of the study:

The study was limited to:

1. The study samples was chosen from the third level students from four commercial secondary schools in the Kingdom of Bahrain; two for boys and two for girls.
2. Implementation of a treatment programme, which includes activities based on three skills. These skills are: Perception, convergent thinking, and divergent thinking.

Definitions of related terms:

Creative thinking:

The study implemented the creative thinking definition formed by Torrance in 1969, which states that “creative thinking is the process of generating ideas that are fluent, flexible, original, and elaborative.”

In addition, the researcher applied in his study the definitions stated by Lopman (1991: 225), who states that:

1. Perception:

“The ability to perceive many ideas as possible in a limited time for a definite situation or problem.”

2. Divergent Thinking:

“The ability to produce a large variety of ideas, opinions and points of views.”

3. Convergent thinking:

“The ability to produce ideas that are unusual, statistically infrequent, not banal or obvious.”

4. Effects:

Gronlund (1988) defines the term *effect* as “the difference between the scores students get in both pre and post tests.”

5. Third commercial Secondary Students:

Students who are studying in the third class of the secondary stage (semester no. 5) in the commercial government schools in the Kingdom of Bahrain.

6. Student Achievement:

The achievement will be defined procedurally and that is the difference between the marks students score in the pre and the post-tests.”

7. Learning:

Hudgins (1977) defines the learning process that “ It is the ability to produce experiences different from those which have been presented before.”

Summary:

In this chapter, the researcher attempted to highlight the problem of this study through presenting some of the related studies that contribute to the problem of his research. A pre and post tests to assess the study sample's performance before and after the study are suggested and a special treatment programme , though which the study samples can be trained on the required skills to develop their creative thinking abilities. The objectives and significance of this study were emphasised. The study questions, definition of related terms and limitations were presented.

The next chapter will deal with the Theoretical Framework and the Review of related Literature.

Chapter (2)

Theoretical framework and review of literature

This chapter consists of three parts. The first includes the theoretical background concerning creativity as a scientific terminology and the possibility of implementing it in the classroom. The second part represents the process of thinking and its relationship with creativity. The third part shows the function of the learning process and the link between it and creativity.

Creativity:

While early scholars focused on creation, the product of creative efforts, researchers since then have studied creativity from other perspectives. Libby (1984) states that there three major perspectives for creativity. These are:

1. The creative process with fairly discrete behaviour stages.
2. The particular constellation of personality characteristics in the creator.
3. Environment conditions that promote creative activity.

However, Poole (1980) claims that although questions concerning creativity and the creative process are abound, there is generally little agreement as to what creativity is or how it is manifested. This is clearly shown when defining the term creativity:

1. Barron (1969) states that creativity is ‘the disposition towards originality is a highly organized mode of

responding to experience, including other persons, society and self.’

2. Jackson and Messick (1965) say that ‘there are several personal qualities that are predisposing to originality, that increase the likelihood of unusual responses but do not guarantee them .. intelligence abilities, cognitive styles, motives and values.’
3. Guilford (1967), on the other hand, looks to ‘Creativity as it is like love, is a many splendored thing.’

From all the above, it can be seen that the first definition opens up the notion of a propensity or general way of responding to experience – not just cognitive experience but social and interpersonal experience, assessment of one’s own experience, and response to society generally. On the other hand, the second definition points to the personal qualities that are a prerequisite for creativity. That is to say, if these characteristics are to be found, creativity might occur but there is no guarantee. Indeed, such a definition highlights the potential of the teacher’s role in assisting the emergence of originality. That is, it is elusive, complex, intangible, and a defying definition.

It has been the very complexity and elusiveness of creativity that has often led to the notion being held in dispute. On the other side, people usually want answers, while answers in the field of creativity are usually complex and enormous when trying to define the term creativity and other terms associated with it:

“what may come as a surprise to readers familiar with both connectionism and theories of creativity is that the connectionist theory of creativity is grouped with other associative theories.”
(Danley, 1979:10-14)

As the wideness of the definitions above indicates, creativity is almost an intangible thing because of the wide variety of situations within which new (creative) combinations can be achieved or new insights made. At various times the question has been evaded by the use of other terminology, even though this has usually been a thinly alternative for ‘creativity’. However, most of the psychologists state the followings as the main aspects of creativity: (Smith and Carlsson, 1990) state that the followings are the main aspects of the creative talent:

- **Fluency**, which is the ability to produce as many ideas as possible in a limited time.
- **Flexibility**, where to give value to the creative potential of divergent thinkers.
- **Originality**, where ideas are unusual and statistically infrequent and valued.

At its simplest level, the term creativity is related to creating, that is a process that begins with the inception of an idea new to the individual and culminates in a product, which may be something tangible such as a picture or a story or something intangible, such as new ways of handling social relationships or negative feelings. It is our assumption that creativity is an extremely complex process. However, experts on

creativity generally agree on the phases a person goes through in the creative process. Pierce (1990:13-20) lists the major phases the creative ability has:

1. **Preparation:** Where the learners become capable of defining a problem depending on a background of information.
2. **Concentration:** The ability to produce other demands from the problem.
3. **Incubation:** Withdrawing from the problem; sorting, integrating, clarifying at an unconscious level; often includes reverie, relaxation, solitude.
4. **Illumination:** The stage where the person is able to recognise the solution or is about to reach it.
5. **Verification:** The process where a person assists his solutions and evaluates his methodologies so as to convince others of the worth of the ideas.

These stages are not necessarily distinct and usually involve a complex recycling of the process (Smith & Carlsson, 1990).

Such a product can be verbal, kinaesthetic, graphic, phonic, object-related and so on. That is to say, the avenues through which creativity can emerge are many and diverse. In a classroom context, any curricular area can be the catalyst for its emergence (Lytton, 1990).

All these ideas still do not really come to grips 'what creativity is' but they do throw some light on some aspects of it. The answer could be:

'any activity in which relative to the learner the outcome is distinctly new and different in some significant way from the materials, ideas or experiences from which the activity developed' (Young, 1992:9).

In this view, creativity is not an absolute but rather a very specific person-related phenomenon. Many other definitions of creativity are possible, of course, but these often tend to be exclusive of the types of activities that can be organised in classrooms, or undertaken by ordinary people.

Recognising and Assessing Creativity:

Many educators and psychologists such as (John, Donald, and Arther, 1977) developed a passion for identifying creative talent, the earlier the better. The type of the most measurement was done via pencil-and-paper tests based on the crudest notions:

"These tests were often very difficult to score consistently and were rarely shown to link directly with creative acts or products in the real world." (P: 9)

Some aspects of measures such as fluency, flexibility, and originality can be seen in the learner's behaviour in language activities and its skills and also in other fields such as maths, music, movements, science, and others. The learner here can practice the skill of speaking and produce sentences after generating a series of ideas and so he or she would become more capable of being fluent in forming the ideas and implement them in situations where it becomes useful.

The questions as to whether creativity is associated with personal and environmental correlates, and whether those who work with the learners can identify traits or general behaviour associated with creativity, is problematic. Nonetheless, it seems important – in individual and societal terms, which will be spelled out below – to try to assess creativity, however inadequately, and to foster its growth across the curriculum.

It becomes important to stress that creativity can occur in any curriculum area and in any product type- for example, a set of solutions to a science problem. Creativity can occur in expected and unexpected places, and that is its majesty and mystery.

Possibility of creativity in the classroom:

Classrooms have come in for a great deal of criticism in recent years (actually history records many such criticisms over time), as indeed has the concept of creativity. Within de-schooling philosophies, classrooms have been viewed as institutions, which close minds rather than educate them (Lytton, 1990).

While any move to open up education must be welcome, it is a pity if in a quest for openness we remove structure rather than reshape it. Indeed the move for open classrooms is a good example of reform within the system rather than reform through de-institutionalising schooling. Creativity can and does occur in open classrooms. Indeed the philosophical underpinning for many of the activities in open classrooms rests on a theory of

creative personalized construction of knowledge across the curriculum. This is not to say, however, that creativity is not possible in traditional classrooms. It is. But the teacher's role in acting as a catalyst for creative development needs to be spelled out:

"Knowledge is normally structured in certain ways. At times, however, traditional boundary areas need to be collapsed if we are to solve a problem or perceive a question afresh. Certainly, freshness of thinking is possible in traditional classrooms, but the teacher needs to be receptive to novelty, to value it, and to reward it."(Lytton, 1990:13)

In addition, teaching is based on the premise that it is possible to modify human behaviour. Depending on the degree of determinism one holds, in one's own cognitive constructions, one can argue for or against the notion of innate traits, habitability, person-environment interactions and so on. The philosophy espoused here is that organisms (persons) interact with their environments (social, cognitive, physical etc.) and develop and grow. Through this process of interaction, which is creatively conceived and executed.

Teachers can certainly structure experience so that children have more opportunity to develop flexibility, fluency, lateral thinking and so on. Whether the elements add up to a creative learner can be debated. However, unless cognisance is given to the elements, it may be that for certain learners' creativity will seldom, if ever, develop (Benjamin, 1984).

If, as the literature on child development suggests:

“Learners are innately curious and imaginative, then it seems the predispositions for leading children to creative behaviour already exist and the teacher’s role becomes one of setting up interactions which will stimulate these predispositions.” (Lytton, 1990:9)

Teacher’s Role in fostering Creativity:

There are at least four important roles the teacher can play in fostering creativity in the learners. The first relates to teacher attitudes. The teacher needs to value creativity and to communicate this to students. If conforming behaviour is more highly valued, students will feel that their attempts at novelty are futile and will learn to play the game of ‘doing what the teacher wants’. An open, receptive and accepting attitude by the teacher is indeed very important if creativity is to thrive and flourish in classrooms.

The second role the teacher can play relates to classroom organisation. There is some evidence to suggest that some students are more original in a setting that is open and free, in which the student has the opportunity to produce what has meaning and significance for him/her. There is other evidence to suggest that some students tend to be boundary –breakers and produce more creative responses when they are forced to break through old concepts and ideas in order to find originality. The astute teacher therefore looks across the curriculum boundaries to patterns of organisation that are sufficiently diverse to enable

students' creativity to be given organisational support, as in learning experiences, materials, setting within groups, and so on.

This organisational role is closely related to the third role of the teacher as the constructor of curriculum experiences. Openness, flexibility and diversity become manifest in different patterns of organisation (sometimes as a total class, in small groups, as an individual or in a dyad with the teacher).

These patterns emerge from the realisation of the interconnectedness of experience for students, across curriculum boundaries that may seem artificial. The thirty-minute creative writing segment or the twenty-minute creative graphic segment may unduly fracture the integrity of students' learning. Students process information, store and record what they see, feel, hear, do and think. Their internal system works within a framework of assimilation and accommodation of new experience, and a destruction of their own experienced reality. It seems logical therefore to structure curriculum experiences so that there is congruence between the goals of schooling and the development processes operating within the student. Certainly if traits such as imagination, curiosity, a quest for novelty, and inventiveness are to be developed, the construction of appropriate curricular experiences by the teacher is of vital importance.

Fourthly, the teacher has to be able to recognise originality and reward it. Children can become hostile if all their 'creations' are highly evaluated by the teacher. For example, a student who has misspelled a word knows the teacher is removing the criteria

of evaluation when she/he is told the word is 'good' by the teacher.

Students have their own internal standards of evaluation that can be matched alongside the teacher's. Often they know when their own work is good. Therefore, while self-monitoring is to be encouraged, the teacher must nonetheless select the creative products of a students' output, which can be objectively as well as subjectively evaluated.

The concept of Creative Thinking:

It has long been debated how teachers can best teach students to think. Is it necessary for us as teachers to have learning experiences in which students learn to think in our own style, or should procedures and facts merely be memorized for future references? More than just memorizing facts is needed if we are to be really creative and innovative.

Todd and Santoshi (1999) found that providing the learners with high level thinking exercises would develop and facilitate their thinking abilities towards a better use. This was conducted after an application of an autonomous – learner unit model presented to Japanese students. The researchers found that the high level thinking questions increased students' learning abilities and creativity throughout their lives.

On the other hand, it has been proved that developing students' thinking abilities has its effects on their academic achievement. In her study, Overton(1993) attempts to investigate the effects of thinking skills instruction on academic

achievement and on the development of critical and creative thinking skills for the grades 2, 4, & 6 grades. A t-test is utilized to determine significant differences in the mean scores of the pre-test and post-test of the controlled and experimental groups at each grade level. The results indicated no significant differences at the second grade level. Significant differences in the fourth grade groups were obtained in the talent areas of producing thinking, communication and forecasting. Significant differences also occurred in the academic areas of mathematics. In the sixth grade, significant values were obtained in the talent areas of productive thinking, decision-making and planning. Based on these results, the researcher concludes that thinking skills instruction in the fourth and sixth grades made significant differences in the development of creative thinking. The results also indicate that thinking skills instruction has a significant impact on the academic achievement of students in the area of mathematics (Davis, 1989).

To conclude, it is found very important to go through the thinking process before discussing the concept of creative thinking since creative thinking has more to do with the thinking process than any other.

The thinking process:

Although we still do not know just how the thinking process works, much attention has been given for many years to learning about some of the things that help, and other things that tend to impair our thinking.

Branden (1969) has characterized the learner's ability to think and reason not only as a major factor differentiating the humans from animals, but also as the humans' basic means of survival. He points out that thinking and reasoning are volitional:

"We can choose to initiate and sustain a sharp mental focus and try to understand at a high level of precision and clarity. Or, we can choose to remain in a state of passive, indiscriminating, goalless mental drifting. We can usually differentiate between knowledge and feelings and choose whether to let our judgment be guided by intellect or by emotions."
(Brandon, 1969:111-112)

On the other hand, most dictionaries define thinking with several action verbs such as to form in the mind, conceive, imagine, reason, cogitate, meditate, contemplate, or muse (VanDemark, 1991).

In his research article, VanDemark (1991:39) says:

"To think is to connect things up, to search for and discover hidden relationships, to judge, to evaluate, to generate hypotheses and follow them up."

An educated person thinks in terms of cause and effect, and reads not chiefly to remember but to reflect and thinks to develop forms for formless experiences, to establish connections for unorganised or disorganized experiences. He tries to connect up his life experiences to find out where he has to connect them

up to find out where he has been, where he is now, and where he is going.

Therefore, thinking enhances the students' ability to analyse problems, see opportunities, make decisions, propose solutions, and determine what actions to take.

Styles of thinking:

Most of the time no two of us think exactly alike. The human's perception of things, his/her past experiences and the concepts the student has formed are bound to come into play affecting his/her thinking process and likely his/her thinking style.

General thinking styles:

Bryce (1988) suggests that we follow one, or a combination of two (seldom more) general thinking styles. They offer five major categories:

1. Synthesis-persons who like to combine different things or ideas, be speculative, look for the best fit, link seemingly contradictory views, like change, become bored with status quo and routine, often disagree. Their favourite question is, "what if ...?"
2. Idealist – persons who like to take a broad view of things, pay attention to people's needs, are interested in social and ethical values, are future oriented, agree on goals, welcome a diversity of views. Their common question is, "Where are we going and why?"
3. Pragmatist – persons who like freedom from consistency, good at making do, approach problems piecemeal, do one

thing at a time, look for shortcuts and quick payoffs, their approach may appear superficial, erratic and lacking in standards, want to be liked and accepted, are adaptive. Their motto is, “Whatever works.”

4. Analyst – persons who approach problems carefully, logically, methodically, collect information and plan carefully, analyse and judge things, have theories about nearly everything. Their motto is essentially, “Find the best way.”
5. Realist – persons who are almost complete opposites of the synthesers, are empiricists, believe in what is real can be felt, smelled, touched. Their motto is, “Facts are facts.”

The above illustrates well that individuals differ in the amount of attention that is given to a situation. Some focus on specific features, others tend to look at the whole problem. Thus, for some the thinking processes are rather loose, in others they are quite precise.

Critical versus creative thinking:

Many researchers refer to creative thinking as “critical or reasoning thinking”. Anderson (1980) points out that critical thinking focuses on judging what is probable and what is improbable. He indicates that the central ingredient in close or critical thinking is doubt and a reluctance to believe. He (Anderson, 1980:45) says:

“Doubt should express itself in at least two ways: a reluctance to believe that you have taken all the importance elements of the problem into account

and a reluctant to believe that you have understood correctly the way in which the elements are related to one another.”

Often, especially in the midst of a problem, it may mean constant and thorough questioning. However, care should be taken that this does not develop into worrying and holding back in the fear that one might make a mistake.

Creative thinking is more loose and associative than critical thinking. It is more concerned with generated ideas that are original or unusual. It may involve conceiving what may be possible, which Anderson (1980) describes as “getting our minds to work forward”. It should include developing several possible approaches to seizing the opportunity or solving the problem. Then critical thinking should be used to describe which approach is considered the best. It is obvious that students use both critical and creative thinking in many of their endeavours.

Definition of creative thinking:

Some researchers define creative thinking as a mental process (Sandra, 1999). That is; the human mind has the ability to think creatively conceive ideas, concepts, and images that have never been imagined before. Creative thinking is only one of the processes of the mind. This means that creative thinking is an ability that is inherent in most people, however it differs from one to another. Others would say that creative thinking is different from logical thinking in the way that it means the

thinking that combines what is known into new relationships, producing new ideas and images (Harris, 1998).

Nevertheless, some researchers look to creative thinking as specific thought processes that improve the ability to be creative, being in an optimal state of mind for generating new ideas.

Vardi (1999) claims that creative thinking is the ability to think deliberately in ways that improve the likelihood of new thoughts occurring and to maximize the ability of the brain to think of new ideas.

From all of the above, one concludes that creative thinking is a careful, clear, logical and independent mental process. In addition, it includes the ability to recognise implications and inconsistencies.

Relation between creativity and creative thinking:

One confusion that appears in the literature may plague us here and that is the interchangeable use of the terms “creative thinking” and “creativity”. As mentioned previously, seldom is there a distinction between them. Yet, more elaboration can be made upon the term creativity. That is, creativity is seen to be the broadest term since it refers to musical and artistic abilities that produce tangible products in addition to ideas and concepts, i.e., both behaviours and concepts (French, 1992).

Definitions and descriptions of creative thinking often include references to all of the three main questions:

- Is creative thinking a set of specific abilities or not?

- Is creative thinking characterized by divergent or convergent thinking?
- How is the product of creative thinking characterised?

Perkins (1997:12) says in differentiating between the two concepts that creativity is not a specific set of abilities but more a point on a continuum of thinking:

“Creativity is not an ability, it is a way of developing one’s abilities such as creative thinking.”

So, it is not a single, specific ability or talent. Rather it is more a matter of degree. It can be modest as well as grand. Therefore, creative thinking is patterned in a way that tends to lead to creative results.

Neckerson (1999:12), however, sees creativity as a specific set of abilities and focus as on its product as well:

“Creativity is that collection of abilities and dispositions that lead to a person frequently producing creative products.”

In the end, it is clear enough to say that creativity includes a sense of originality, uniqueness, or the unusual; creative thinking, on the other hand, derives its characteristics such as novelty and innovative solutions to problems from it.

The process of learning:

For many years attempts have been made to learn how the learning process functions of the brain actually work. This is still not well understood.

In this part, we are going to highlight the main functions, which the process of learning includes. These are: memory functions and remembering and forgetting.

Memory functions:

There appears to be no evidence that there is a limit neither to the long-term memory capabilities or to the number of distinguishable term symbols that our brain can store. The information processing system involved in memory consists of long-term memory, short-term memory, and external memory (Newell and Simon, 1972).

As a human learns, certain stimuli from various input channels cause the development of particular symbols, which are recognisable. These recognisable stimulus patterns are called “chunks”. It appears that the first step in the informational processing system is one of short-term memory (STM), which has a very small capacity. The short-term memory capacity in symbols or equivalent chunks seems to be limited to about five or seven symbols (think of the difficulty in remembering more than the ordinary seven digit telephone number). This restriction seems to be fairly consistent over a wide range of tasks. (A few notable exceptions indicate that perhaps as many as 70 items of recall, apparently associated with short-term memory, have been reported (Fincher, 1981).

Information in our short-term memory decays rapidly or is over ridden by inference among symbols. It thus must move fairly quickly from short-term memory into long-term memory or be lost. Some experiments suggest that it takes five to ten seconds of processing time for us to store a symbolised stimulus in our long-term memory. Our recognition and retrieval processes in long-term memory apparently take from 0.5 second to a second or a little more (Bryce,1988).

Much of the difficulty in doing such mental problems such as in maths or language mentally results from the slow write times of the internal long-term memory and the small storage capacity of the short-term memory. Supplying an external memory (EM) can greatly enhance the creative thinking capabilities (VanDenmark, 1991).

External memory items consist of such things as papers, charts, chessboards, books, etc. It is not known precisely how the(EM) augments the (STM), but the two seem to become a single functional unit in a problem-solving situation where much of the creative thinking abilities can be applied.

Remembering and forgetting:

The preceding brief account in short and long term memory suggests some possible mechanism as to how the brain accumulates information. However, specifically how this occurs is still obscure. In some way the brain must retrieve messages via the several sensory perception routes, or through the intuitive route. These are then processed and stored by the brain (Fincher, 1981).

Although there is no known limit to the capacity of the human brain, despite many studies on the subject over the last century, it is still a puzzle how our recall of stored information is brought about. It is believed that the memory storage in some way involves chemical change, for an increase of RNA, ribonucleic acid, occurred in the brain cells of laboratory animals after learning had taken place.

This suggests that protein formation may be involved in some way.

Memory is the record of experiences. From this record a human can recall, correct, add to, and realign and restore facts and concepts, thus learning the essentials needed for survival and growth. It is believed that many of the retrieval cues work unconsciously, following some triggering factor, such as occurs intuitively when the human is asleep or not even concentrating on a particularly related thought during the day. Of course, a person can trigger a deliberate stimulus as the mind pursues thoughts or seeks to recall something.

Learning meaningful materials:

Returning now to the basic points outlined at the beginning of this part and attending to them in greater depth. The first observation is that, with some exceptions, the learning tasks students encounter in school are meaningful. Two fundamental questions here should be considered:

1. What are meaningful materials, and with what other kinds of learning materials can they be?

2. What difference does it make, for purposes of learning – and retention, whether the material the student is to learn is meaningful?

One prominent characteristic of meaningful material is that it does not ordinarily require the learner to memorise it and to reproduce it verbatim. Indeed if the learner reproduces, word for word, material that is meaningful, the teacher begins to wonder whether he has learned it in a meaningful way; that is, whether he has comprehended the material.

It is believed that the comprehension can be inferred only when the learner is able to paraphrase the ideas he has studied (Hudgins, 1989).

It is obvious that when the student learns only the linguistic labels or symbols, even when they represent meaningful and comprehensible ideas, his ability to apply his learning beyond its narrow context is tremendously abridged.

Thus a new concept begins to emerge about the nature of meaningful material: It represents something or some idea. There is a referent that underlies the language or symbols, diagrams, or other media of expression.

To conclude, much of what the student is to learn, especially in the years of secondary or higher education, depends upon comprehending abstract relationships among concepts. But there is no requirement that concrete representations underlie the concepts to be related; they may, in turn, be expressed by means of other abstract relationships.

Relation between learning process and creative thinking:

Researches have proved that the more effective the process is, the more production of creative thoughts on the part of the learners. According to Waeytens (1997), teachers should not teach students but help them to develop their study skills and that students are encouraged to use higher order strategies. To prove this, she chose fifty-four teachers of Dutch and mathematics in five secondary schools in Flemish-Belgium where they were interviewed regarding their subjective interpretations of “learning to learn” and how they implemented it in their classrooms. Data from interviews with 51 teachers were used. Data analysis showed that 22 teachers used “learning to learn” in a supportive mode as a means to obtain better student results, and they tended to limit their instruction to tips and advice in advance of exams or tests. Fourteen teachers used methods to help students to think when learning, regardless of the syllabus, in a remedial mode, as a means to solve problems as they occurred. The study concludes that teachers view the process of learning in the same way their schools view it. Therefore, a review to the learning process on the part of the educational institution should be made.

On the other hand, designing an instructional model combining learning and thinking processes provide students at all educational levels with learning experiences which are beyond the limitations of the content. Sparapani & Edward, (1994) made their study by designing a system of frameworks. The system was developed around four specific thinking skills

(information gathering, critical thinking, decision making, and creative thinking) that are essential elements of effective thinking.

To sum up, it is obvious that developing higher order thinking skills such as creative thinking requires the teachers and students to develop and change their traditional methodology of learning and studying. Encouraging students to think is the most useful way to better learning. David (1994) managed to help his students to have better scores by applying a thinking strategy programme that teaches critical and creative thinking within the context of the regular curriculum. The main focus of the study is helping students think to learn. Other results of this programme are to develop positive attitudes, the ability to think activity through to its conclusion, and to understand the importance of thinking.

Conclusion:

In general, all the literature reviewed proved that developing thinking ability in general and creative thinking in particular is an essential for both: better achievement and learning for the students.

Furthermore, methods of teaching will be enhanced if critical and creative thinking approaches have been involved.

This goes side by side with the new ministry's policy for supporting and encouraging talented and gifted students, which is clearly shown in the "Talent Project" (Ministry of Education, 2002:16), which the ministry is intending to establish in order to encourage the gifted students and develop their special abilities and provide them with all the equipment they need. This has already been associated with a committee established by the ministerial decision (Ministry of Education, 2002:8) to be the one that is responsible to push the project of (Talented Students) and develop them in the different fields of their interests.

Summary:

In summary, chapter 2 presented a review of literature consisting of three parts: (1) Creativity and its relation with the educational process, (2) the concept of creative thinking , its types and relation with creativity, and (3) the learning process and how it functions regarding the mental processes.

Chapter(3)

Research methodology

Study design:

Since the study follows the experimental approach, (One-Way Independent Group Method) the PRE-POST Test Design for one independent group was implemented and the experimental treatment design followed was O X O (The O refers to the process of observation before the treatment, X refers to the experimental treatment, and O refers to the next observation after the treatment (Al-Khalili, 2000).

The same study design was applied in other studies, for instance Rowatte (1997) carried her study on 109 students in the high school in order to assess the relative importance of quality (That is to produce original ideas and suggestions for suggested problematic situations), and quantity (as the number of the ideas and suggestions the students could produce) as goals of brainstorming participants. To achieve this, the researcher administered the samples to pre and post tests and conducted a special programme, through which 65 of the participants registered better production of the creative and high-quality ideas in the post-test than the ones produced in the pre-test after the experimental treatment in the proposed programme. In the same context, (Bouchard, 1999) exposed a number of classroom activities to 20 high school students after observing their performance and achievement during the traditional method.

The study conducted significant findings that the students had become more sensitive, aware, and flexible. Moreover, the personality traits of the creative person was fostered also after the period of activities based on the creative thinking techniques.

Study population and sample:

The study sample 279 was chosen randomly from the population of the study that comprised 719 students in the third level of the Government Secondary Commercial Schools in the Kingdom of Bahrain. These students studied commercial subjects as their major in addition to compulsory subjects such as English, Arabic and social studies. The English courses are taken in five semesters out of the six academic semesters that each course equals four credits in the two semesters of the first and second years, while the final course in the third secondary year in the fifth semester equals two credits. That is the course 105, which is a special course in writing.

The following table gives a general background about the commercial secondary system:

Table (1) Study system in the government commercial school

Year	Term	Subjects	Credits[*]
1st Year	1	Commercial subjects Arabic & English languages Math	24
	2	Commercial subjects Arabic & English languages Islamic studies	24
2nd Year	1	Commercial subjects Arabic & English languages Math	24
	2	Commercial subjects Arabic & English languages Islamic studies	24
3rd Year	1	Commercial subjects English languages Math	22
	2	Commercial subjects Arabic language Social studies	22

The researcher chose to restrict his experiment to just four commercial secondary schools, two for boys and two for girls. This is shown in table (2):

^{*} English courses take four credits from the total credits a secondary student has to take per semester. The exceptional English course is Eng 105, which includes two credits and it is presented in the third year in one of the fifth or the sixth semester.

Table (2) Number of students in each school

School	n
Ahmed AlOmran Boys' Secondary	82
Estiqlal Girls' Commercial	77
Hoorah Girls' Commercial	69
Muharraq Boys' Commercial	51
TOTAL	279

These four schools were chosen for the following reasons:

1. Each of these schools caters for a large and diverse catchments area.
2. Commercial education has 80% of the Secondary education in the Kingdom of Bahrain nowadays.
3. These schools would facilitate the work of the researcher since he is close to these schools reality as being a teacher in one and has relations with the senior teachers of English in the others.

Study instruments:

The researcher applied two instruments to achieve the aims stated for the study. These instruments were:

- **Test of Career Orientation:**

The study considered the "Test of Career Orientation" as the pre and post tests and to be a major instrument to help the researcher in measuring the development which may have occurred to the participants' performance when learning English before and after the experimental period since other studies used

it such as Sadow (1983) when he decided to develop classroom creative problem-solving activities around clearly defined problems and have many possible solutions and entailing a situation where reality was slightly skewed. These items were presented in the form of the pre and post tests.

In this study, the test included twelve items focused on perception, divergent thinking, and convergent thinking. Four items for each variable had been included in the test and they varied in their techniques so that they reflect different methods to be used on the part of the students. The test items also were designed in a way that measure students' ability to respond to the skills they need when learning the language and so all the major skills such as writing, reading, listening, and speaking were included. Nevertheless, the test was built in a way to serve the students' needs by creating integration to the content of the students' specialization syllabus, which is commerce. This all was to ensure that students can utilize the information they gained from their specialization when learning the language and to implement the vocabulary and language skills they gained when learning other subjects, where English might play a major role to do such tasks and assignments.

More details about the pre and post tests are shown in table (3):

Table (3) Distribution of scores on the pre and post tests

Variables	Number of questions	Marks	Total
Perception	4	One mark for each question	4
Convergent thinking	4		4
Divergent thinking	4		4
Total	12 questions		12

Eventually, the test was introduced to a number of specialists from the Faculty of Education, University of Bahrain and the Ministry of Education in the Kingdom of Bahrain to obtain the test validity. As far as the reliability is concerned, the pre and post tests provided reliable results in Al-Ahmed's study (1994).

- **The Study Treatment Programme:**

The aim of designing this programme was to expose the study samples to the experimental treatment in order to be able to observe and measure its effects through the marks the students would score after in the post test. Moreover, it would represent an attempt in which creative activities and skills can be included in the curriculum syllabus and put it as a main part of the class lesson.

The programme was designed in three parts according to the activities mentioned, which are (perception, convergent thinking, and divergent thinking). All of the skills required to master learning English as a second language were included; for instance practising listening through dialogues and pair conversations, or reading a specialized article to comment on by

writing a comprehensive article. Therefore, there were exercises for listening, speaking, writing and reading. In addition, the exercises were meant to be in the students' specialization, which is 'commerce' in order to make both of the tasks and the language content relevant. This is supported by other studies like Weiner's (1988) as she introduced students to a modified instructional Model based on Torrance's approach to teach thinking skills and creative productivity along with the subject content.

The programme lasted for four weeks with six lessons in each week. The researcher was the one who took the responsibility of teaching the students with the help of other senior teachers of English after making a training workshop to train them on how to teach it.

Study limitations:

The study was limited only to those students in the third year of the secondary level in the government commercial schools in the Kingdom of Bahrain who were studying English (Eng 105) in their fifth semester. Furthermore, the study was limited to the activities presented in the programme and the content selected to match it, and the skills in the pre- and post-tests.

Data analysis:

The data which had been gathered from both, the pre and post tests were used to determine how much improvement if any, was achieved in students' performance when learning the language.

The researcher analyzed the data using the SPSS programme:

The following statistics methods were applied to examine the study hypothesis:

Table (4) Statistical methods applied in the study

No.	Statistical methods	Purpose
1.	Means and Standard Deviations	To find out the different levels of students achievement by using the descriptive statistic to get the Mean and Standard deviation.
2.	Independent Samples' T-Test	To find out the statistical differences that represent the differences of achievement between the Pre- and Post- tests.

The researcher applied the pre –test to have an indication of the participants' level and then started teaching the unit. The researcher attempted to stimulate new experiences and atmospheres where the learners can practise their abilities.

Finally, the students' scores in the pre-test were compared to those they scored in the post-test to show their progress.

Procedures:

The study started on the tenth of October 2001 and lasted for four weeks. The researcher started by arranging a meeting between the senior teachers of English in the chosen schools and a time/date for the pre-test was set after designing a pre/post test "*Test of Career Orientation*" to assess students' performance before and measure the development occurred after the experimental process.

After administrating the pre-test, the researcher trained the teachers on how to involve the students in creative activities by

designing a programme treatment adapted from the unit (OCOC) produced by Dr. Al-Ahmed, to teach the study samples and expose them to the creative thinking approaches (perception, convergent thinking and divergent thinking). This has to go with the Ministry's plan for the development of learning process in the governmental schools through "Talented Project"(2002), which the Ministry is intending to establish based on the recommendations made by the "Committee of Talented and Gifted Students"(2002-2003) who is assigned to run the project and follow up its work.

Model answers were given in case they were needed by some teachers.

The teaching of the programme lasted for four weeks and after that all students were given the post-test, which was identical to the one they did at the beginning of the experiment.

The researcher gave a pre- test so as to know the actual level of the students before the experiment. In addition, he wanted to make sure of his claim about developing their thinking abilities.

The researcher looked to assess the effectiveness of the unit designed in developing students' mental abilities and their skills when learning the language. This was obtained through the Correction of the pre/post tests and the outcomes of the programme which will be reflected in the post test.

This is followed by a statistical treatment to discover the differences between the performances before and after the experiment.

Therefore, a quantitative approach was applied for collecting data on students' improvement in learning English as a foreign language. The quantitative method was used in order to fulfil the researcher's desire to know and understand to what extent creative thinking is effective in enhancing students' learning of English as a foreign language in their specialization, which is 'business'.

Difficulties faced before and while implementing the research programme:

1. the research samples were distributed among four schools, two of them were out of Muharraaq area. Therefore, the researcher managed to organise a meeting session with the senior teachers of English at those schools, although their time-tables were almost full of arrangements.
2. The study samples were not in the same classes, therefore the researcher spent a period of time (one week before the experiment) organising the classes with the students' names whom were selected to be the study samples. This couldn't be achieved without the cooperation of the registration office and the schools' administrations in the four schools mentioned previously.
3. There was insufficient time to implement all the activities designed for the treatment programme because most of the teachers wanted to finish their courses. However, the teacher succeeded in utilizing the extra periods given for the remedial lessons into practising the programme activities with his students.

Summary:

Chapter 3 includes a description of the methodology and procedures followed in the study. It describes the sample, the study instruments, general design of the programme, procedures employed to implement the programme and the difficulties faced before and while the application of the programme at the schools.

Chapter (4)

Study findings

In this chapter the data, which was collected from the students' responses, was exhibited and statistically analysed. There are two research questions that need to be tested and these are as follows:

1. How effective is the teaching of creative activities on students thinking abilities in the classroom?
2. To what extent do the proposed activities affect the developing of each of perception, convergent thinking, and divergent thinking within the study sample?

The findings of the study will be presented in both narrative and tabular forms. The results of the study are summarised as follows:

1. Description of the study samples' performance on the Pre test.
2. Description of the study samples' performance on the Post-test.
3. Comparison between the study samples' performances on the pre and post tests.
4. Analysing the study hypothesis.

First: Description of students' performances on the pre-test:

As a part of the study, the students took a pre-test, which included creative activities relating to perception, convergent thinking, and divergent thinking (See Appendix 1). The results of the pre-test indicated low mean regarding the three types of

activities presented. Table (5) summarises the students results in the pre-test:

Table (5) Mean and standard deviation of students' scores on the pre-test (Total score = 12)

Mean	4.8
Standard Deviation	2.13
Maximum scores	7
Minimum score	0

With reference to table (5), it is noticed that the mean of the pre test 4.8 is below the fifty percent of the total score of the test. This means that these students do not have the skills measured in the pre-test.

In addition, the standard deviation resulted 2.13 shows that the marks were spread out far from each other and this means that students couldn't be able to produce equal responses to each skill through the activities presented in the test. This suggests that most of the students' performance was not oriented to respond to some creative skills like the ones presented in the test. This is clearly shown in the maximum score registered (7) and the minimum score (0) which indicates that there are big differences between students' performances in the pre-test.

On the other hand, there are differences between students' levels when checking their performances on the subcategories of the scale. Table (6) describes the frequency of students' correct answers on the pre-test:

Table (6) Frequency of students' correct answers on the pre-test

Variables	Item number	Frequency[*]
perception	1	2%
	2	12%
	3	65%
	4	200%
Convergent thinking	5	10%
	6	26%
	7	85%
	8	158%
Divergent thinking	9	6%
	10	27%
	11	130%
	12	116%

According to the above table (6), it can be stated that:

1. Regarding the first item of the pre-test which focuses on the students' views towards some essential terms of their study specialization, only two students got the correct answers. Many of the students could not be able to establish brief definition for a basic term related to their study through a thinking skill.
2. Regarding the second item that focuses on imagination and future view, only twelve of the total samples presented a clear

^{*} Note: The above numbers in each cell stands for the number of students who got the correct answers for each item in the pre-test.

and complete view towards their future and establishing a relationship between it and their study specialization.

3. The third item has to do with students' ability to perceive such ideas and respond to it within limited points. Responses on this item were more than the previous ones that 65 succeeded in perceiving the idea and giving responses within the points listed in the question.

4. However, the majority of the study samples provided the correct answer to item four, although it is formed in the same way item three is formed in.

5. Regarding the convergent thinking section, it is shown that the students succeeded in producing correct answers for the items related to the skill of convergent thinking, although they found difficulty in item five where the correct answers were only 10 . However, the correct answers increased in the sixth item of the test to 26% and 85% in the seventh then 158 in the eighth item.

6. Regarding the divergent thinking section, most of the students' correct answers were recorded in the eleventh and twelfth items which deal with the ability to produce diverse words relating to their field of study. However, the majority could not be able to give correct answers to the items nine and ten which require them to produce some words beginning with definite letter (C).

Furthermore, the students' performances were checked on the subcategories of the scale. This is shown in table(7):

Table(7) Means and standard deviations of students' scores on creative skills perception, convergent thinking and divergent thinking on the pre-test

Variables	Mean	S.D	Maximum score	Minimum score
Perception	1.64	1.23	-	1
Convergent Thinking	0.78	1.00	2	1
Divergent thinking	2.39	0.99	4	3

It can be seen from the above table that the mean obtained for the items based on the perception skill (1-4) in the pre-test is 1.64. This means that the mean is lower than the average required 5.00, which leads to the following justification that students did not have much training related to the perception skill. Therefore, students did not have the ability to understand the questions (1-4) on that part and be able to generate ideas that fulfil the question requirements in order to practise the language and use their imagination. What was found was a concentration on the part of the students to give a word or phrase that usually was behind the barriers of the question i.e. the study samples attempted to produce one word or a phrase which represent the idea they wanted to present, but they did not produce clear sentences. This has affected their answers reflected in producing short and simple answers on the part of the learners without any clarification or justification for them; the point that is highly required in the field of learning a foreign language nowadays. On the other hand, the S.D for the part on the perception in the pre-test is (1.23) This shows that the deviation of the marks

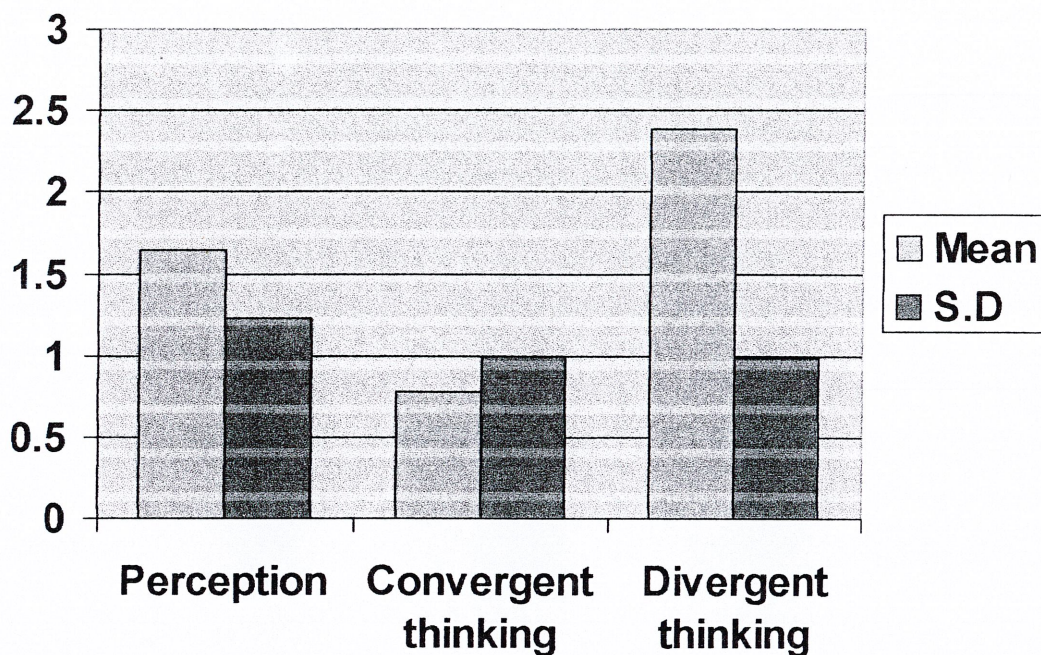
from the mean has been closer and so this supports the claim that because of the low mean resulting from the low scores, the standard deviation has matched both; the low scores and the mean.

Consequently, the score mean registered for the items (5-8) based on the convergent thinking skill is 0.78. This is lower than the scores' mean the students recorded in the first part. In addition, the standard deviation for the convergent thinking part is 1.00, which suggests a far performance from the one required. That is, a suitable matching can be found in these items (5-8) between the mean and the deviation of the marks resulting from a reasonable relationship; that low scores results low mean and so far deviation from the centre of the marks, which means that students didn't respond well to the pre-test.

Paradoxically to the above two results, students have scored better marks in the third part (9-12) which is divergent thinking as the scores' mean is 2.39 meaning that students may have benefited from the business subjects studied in English in their answering of the third part items, where they have made use of some of the professional terminologies learnt from other areas of study.

The following figure (1) shows the comparison between students' performances in the three skills:

Figure(1) Comparison between means and standard deviations of students' scores in the three parts of the pre-test



Second: Description of students' performance on the post-test:

Following an analysis of the post-test, the findings were significant and are tabulated in table (8):

Table (8) Mean and standard deviation of students' scores on the post-test (Total score = 12)

Mean	10.32
Standard Deviation	1.27
Maximum score	12
Minimum score	8

From the above table, it can be stated that the mean of the scores gained in the post test is 10.32, which means an increase from the mean of the pre test by 5.5 This is a great change because it means that the scores students obtained in this test

were higher than the ones in the pre test. Furthermore, the S.D in the post test is 1.27, which is lower than the one found in the pre test 2.13. This suggests narrowing in the students' performances because of the training programme on the skills mentioned previously. This is clearly shown in the maximum score registered which was the full mark (12) and the minimum score registered (8) with a difference in 4 points only.

Following is Table (9) describes the frequency of students' correct answers on the post-test:

Table (9) Frequency of students' correct answers on the pre-test

Variables	Item number	Frequency[*]
perception	1	46%
	2	95%
	3	75%
	4	63%
Convergent thinking	5	24%
	6	38%
	7	74%
	8	74%
Divergent thinking	9	46%
	10	95%
	11	90%
	12	48%

With reference to table (9), it can be stated that:

^{*} Note: The above numbers in each cell stands for the number of students who got the correct answers for each item in the pre-test.

1. It is obvious that there is a general improvement in the correct answers given by the students in the post-test. This improvement is clearly shown in the first and second items regarding the skill of perception, where the number of the correct answers increased from 2 in the first item in the pre-test (see Table 6) to 46 in the same item in the post test and from 12 in the second item in the pre-test (see Table 6) to 95 in the post test. In addition, the same improvement occurred in the part of the convergent thinking skill where the scores increased from 10 and 26 in the fifth and sixth items in the pre-test (see Table 6) to 24 and 38 (see Table 9) in the post test. This obvious improvement can be seen in the third part also which deals with divergent thinking skill where the correct answers produced by the study samples increased from 6 and 27 in the items ninth and tenth items (see Table 6) to 46 and 95 (see Table 9) as a great increase in the correct answers made by the students in the post test.

2. Paradoxically, there are some items in the pre-test, where the majority of the students got the correct answers for them in the pre-test, however, the number of the correct answers for these items has decreased in the post test. This could be shown in item four in the perception part, where the correct answers in the pre-test were 200, but it became 63 in the post test. The same situation could be recognised in item eight in the convergent thinking part, where it has changed from 158 correct answers in the pre-test to 46 in the post test and from 116

correct answers for item twelve in the pre-test to 48 correct answers in the post test.

3. Although the above mentioned results reflect an obvious change in students' performance; either by being improved in some items or not improved in the others, the results create a structure of balance in the responses (correct answers), which the students make towards the items in the post test. This is despite the fact in the pre-test, where unbalance was occurred in students' responses towards the test items, i.e. there were many correct answers for an item in a part with only few for another in the same part.

In addition, the detailed results in table (10) show enhancement in students' performances in the three skills:

Table (10) Means and standard deviations of students' scores on perception, convergent thinking and divergent thinking in the post-test

Variables	Mean	S D	Maximum score	Minimum score
Perception	3.66	0.60	3	1
Convergent thinking	3.39	0.83	4	2
Divergent thinking	3.26	0.75	4	-

Regarding the above table (10), it can be stated that high improvement occurred in the performance of students after the conducting of the treatment programme. This is reflected in the scores they gained in each part of the post test. By looking at the results, it can be seen that students have increased their marks in

each skill. This is clearly shown in the score means of the three skills, where the students' score mean has increased 1.27 in the first skill (perception) instead of 1.64 in the pre-test. The same occurred in the second part (convergent thinking), where their score mean has increased 2.61 in the post test instead of 0.78 in the pre-test. This is a good indication of the effectiveness of the programme that students have gained better skills and developed abilities which enabled them to do the post test more professional than the pre test. However, students' score mean has increased only 0.88 in the third part, which indicates less mean gain score than on the other parts of the test.

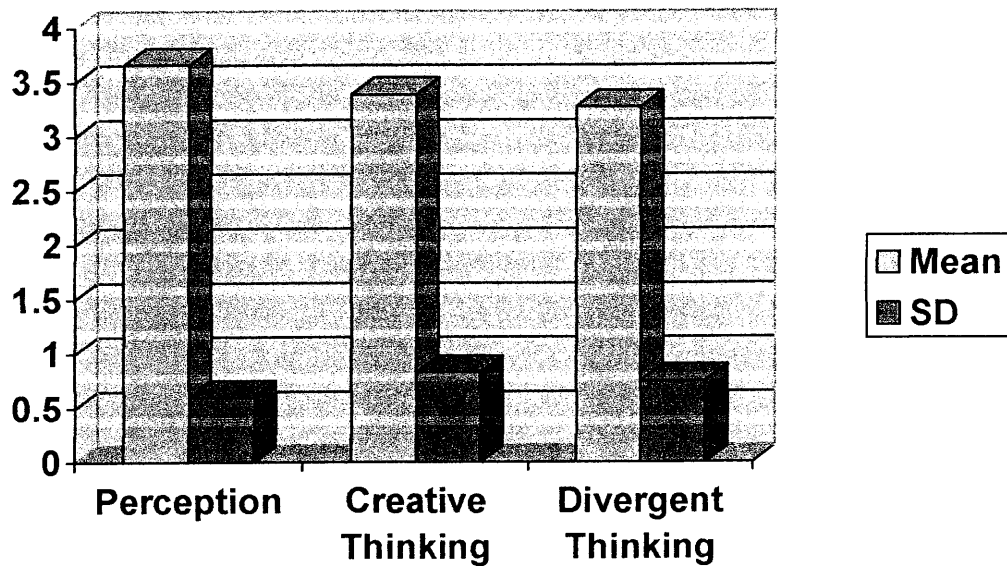
Another point noticed was the close results found between both, the convergent thinking and divergent thinking, which would indicate that both convergent and divergent thinking are more related more to each others than to perception. Therefore, the learners can use either one of them to develop themselves for the other skill. However, this does not contradict the statement mentioned previously that the three skills integrate together to develop creative thinking and is obvious from the results mentioned in table (10)

As a result, the standard deviation has become closer for the three skills in the post test. The closeness between the deviations occurred in the three skills indicates how the treatment programme helped the students in narrowing the spread of marks which obtained by the students in the pre test. This can be attributed that students had been exposed to new experiences

while learning in the programme and then tried to apply these experiences in the post-test.

The following figure (2) shows the means and standard deviations for each skill in the post test:

Figure(2) Comparison between means and standard deviations of students' scores on the three parts of the post-test

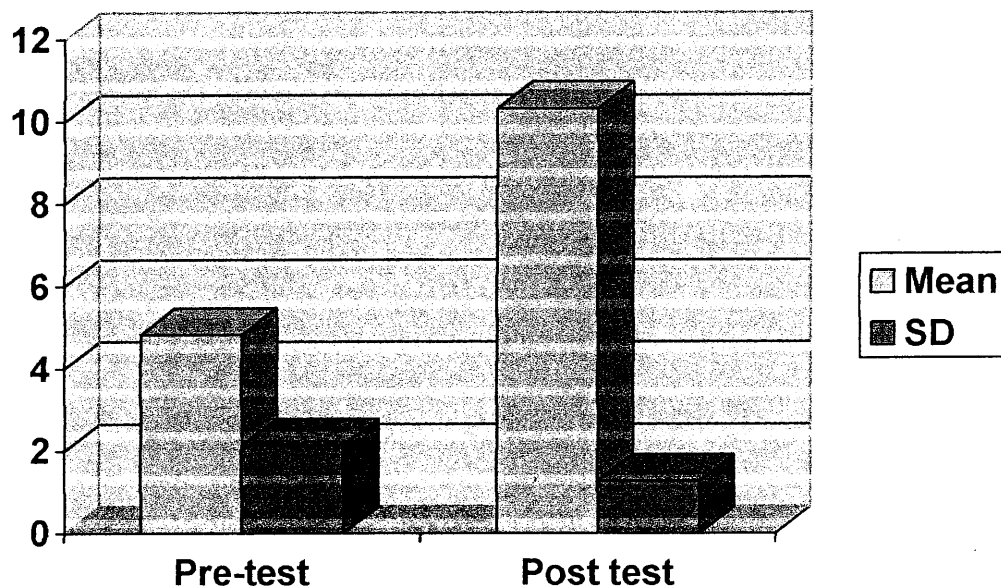


In contrast to the pre test, the second part (convergent thinking) in the post test had the highest mean scores 3.39 to the mean score 2.39 (see Table 10), while the first part, which is (perception), was the highest in scores 3.66 in the pre-test. This has an important point which indicates that students did not have a constructive view for the skills required prior to the pre-test. But, while taking the treatment programme, students have gained the skills, and this led them to get the highest marks in the third part. On the other hand, having the students exposed to the treatment programme, enabled them to build a constructive ability to be used from the first part of the test.

To conclude, from a comparison between the pre-test and post-test scores, a significant indication can be mentioned that because of the low mean in the pre-test, the standard deviation is big between the marks, while it is the complete opposite in the post-test where there is a big mean and so a small deviation of the spread of the marks. This means that students' performance in the pre-test was unorganised and no good performance was done because of the weak responses on the part of the students. This is in contrast to the post-test, where the students were exposed to a learning period on the three skills and this was reflected on their performance in the post-test.

The following figure (3) makes a clear comparison between the pre test and post test regarding their means and standard deviations:

Figure (3) Comparison between the means and standard deviations of Students' scores on the pre and post-test



Third: Examining the study hypothesis:

After describing and analysing the findings of the pre and post tests, the researcher addressed the questions of the problem of the study. Therefore, the researcher examined the following hypothesis:

1. The students of English have benefited from learning the creative thinking skills.

In order to test the above hypothesis, the researcher has used (t-dependent test) for the correlated means using the SPSS package. The following table (11) clarifies the value of the (t-obtained) for the differences between the Pre and Post-tests.

Table (11) T-test results for the pre and post tests

Pre test Mean	Post test Mean	Mean of Differences	Degrees of freedom	t-obtained	Significance
4.82	10.32	5.5	278	38.309-	0.001

It is clear from the above table that t-obtained is significant at level 0.001. Therefore, this would suggest that the first hypothesis has been accepted since the learners have benefited from the creative thinking approaches applied in the learning process. Significant differences occurred between the means of scores for the students in the pre and post tests and this can be referred to the post application of the test, since the means of scores which students have gained in the pre-test is 4.82 while the means of scores in the post test is 10.32.

To answer the second question, the researcher tested the following hypothesis:

2. The treatment programme is effective in developing students' ability in each of the following skills; perception, convergent thinking, and divergent thinking.

To test this hypothesis, the researcher used t-dependent test for the correlated means using the SPSS Package for each skill. The following table (12) clarifies the value of the t obtained for the differences between the scores in the pre and post-tests:

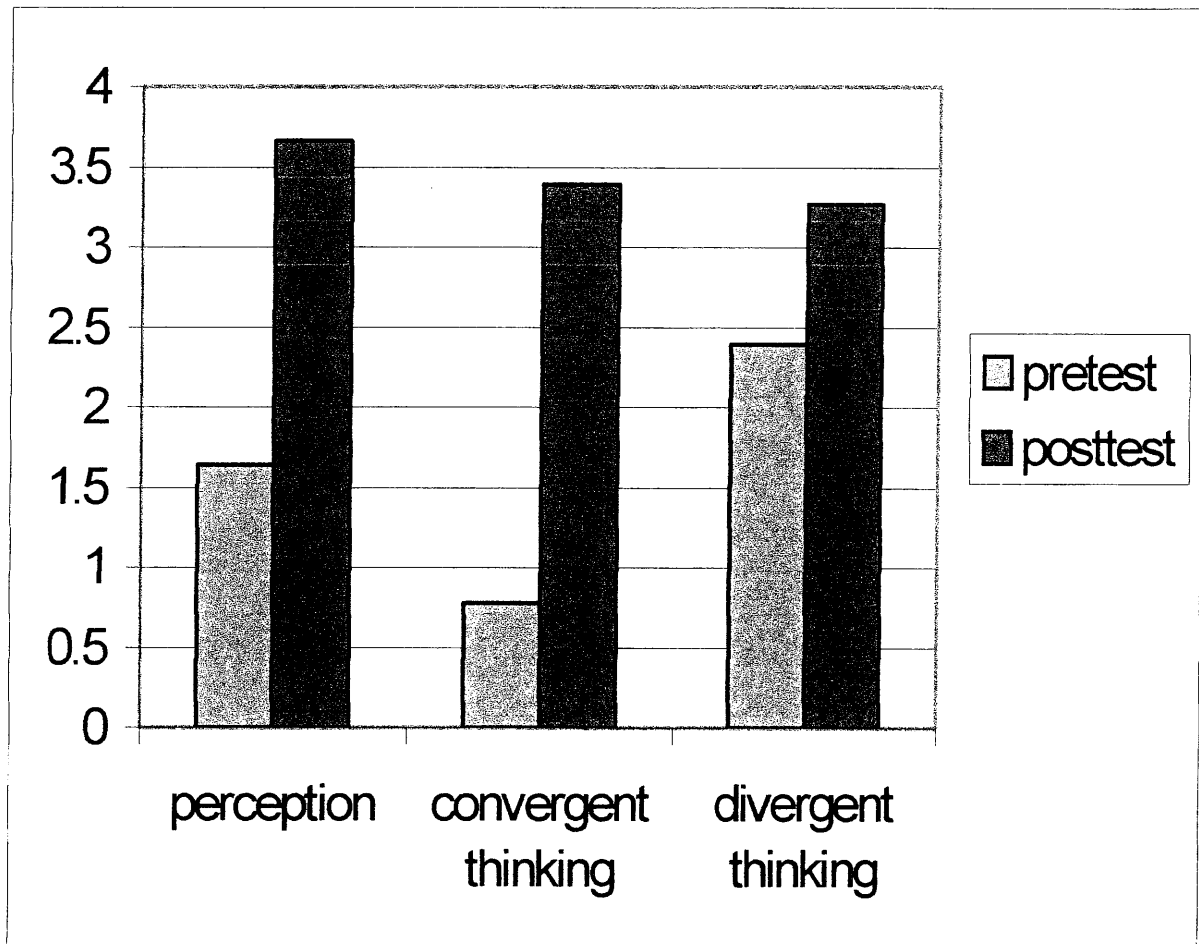
Table(12) T-test results for the pre and post tests for perception, convergent thinking & divergent thinking

Components	Pre test mean	Post test Mean	Mean of differences	Degrees of freedom	t-obtained	Level of significance
Perception	1.64	3.66	2.02	278	24.209-	0.001
Convergent	0.78	3.39	2.61	278	34.706-	
Divergent	2.39	3.27	0.87	278	12.355-	

From the above tables (11 & 12) , it could be recognised that the value of (t obtained) is significant at level (0.001) for the three components (perception, convergent thinking, and divergent thinking). These differences have resulted for the post-test, since the means have been more than the ones in the pre application of the test.

The following figure (4) clarifies the difference between the means of scores in the pre and post-tests for each component.

Figure(4) Comparison between the means of the Pre and Post-tests



Summary:

This chapter includes the results of the study. Firstly, it comprises descriptive statistics of both tests, the pre and post, and statistical implemented to measure the effect of the teaching of the three skills: Perception, Convergent thinking and Divergent thinking on developing the learning of English language.

Chapter (5)

Results' discussion

The discussion in this chapter is divided into three categories based on the findings of the study (1) Discussion of findings of the pre-test; (2) Discussion of findings of the post-test; (3) Recommendations of the research.

First: Pre-test analysis:

With reference to the pre-test findings, it can be stated that:

1. The study samples could not be able to produce acceptable answers regarding the questions based on perception, convergent thinking, and divergent thinking. This suggests that students did not utilise their study specialisation in order to answer the test questions, although they all were related to their specialisation which was 'commerce'. The reason behind this could be that these students did not have the ability to produce ideas and generate sentences which fulfil the questions requirements such as imaging a situation in a company, or future plans regarding their study specialisation and career. Rodd (1999) has proved in his study that developing creative and critical thinking skills have become a necessity in order to motivate students' towards learning and help them become more open minded. This is

clearly reflected in the scores mean recorder for the students' performance in the pre-test (see Table 5).

2. In addition, it is noticed that the majority of the students failed to produce equal and balanced responses to all test items. This could be justified in the way that they were not oriented to respond to questions creative skills like those they had in the test. Based on this, it could be said that most of the learning done in the school is a traditional formative learning which is usually based on receiving ideas and information instead of generating and sending these ideas from a purely self attempt. This is supported by Al-Shatti's study (1999) where he stated that many of the educational treatments in the formal schools do reflect simple mental processes such as memorising and receiving in spite of thinking and implementing a piece of information.
3. Students' answers in the pre-test revealed their weakness in producing terms that suit the situations required in the test. This means that students could not make use of the technical terms they have learnt throughout their school study because they had not been required to implement them in useful semi-realistic situations, the matter that affected their thinking abilities from producing a number of words or phrases to express the situation they were exposed to in the test. This is shown in their mean scores and standard deviations for the three skills (see Table 7).

Second: Post-test analysis:

According to the post-test, it is shown the influence of the treatment programme which had exposed to the experimental group of students during the experiment of the study which lasted four weeks. This influence was transformed into an enhancement in the students' performances in the three skills. This finding is discussed as follow:

1. The higher scores which the students got on the post-test (see Table 8) suggested that students have benefited from the exercises and activities given to them during the application of the programme. On the other hand, Ristow (1988) indicated that thinking processes help in the development of the creative thinking skills when they are implemented in the educational environment. This is shown in the way the study samples became more able to answer the test questions.
2. Nevertheless, it is shown that the training on these skills helped students to produce balanced responses which is shown in the standard deviation registered for the post-test (see Table 8 & 9). This statement goes along with what other studies such as Bear's (1996) and Milgram's (1993) which found that training students on creative activities have a significant impact on their creativity in using the language to produce poems.
3. Although there was an improvement in students' performances towards the three skills on the post-test, some items got lower marks than those which they got on in the

pre-test (see Table 9). This could be justified that the students had gained new experiences which affected their performance on their items. This is similar to what other studies such as Diakidoy and Spanoudis (2002) who claimed that acquiring creative talents may cause partial affects on the learner's general skills.

4. However, the general findings of this study showed the effectiveness of the treatment programme in helping the study samples to utilise more the language and make benefit from their study specialisation into developing their creative abilities.

Study recommendations:

Based on the results of this study, the following recommendations could be made concerning instruction and research :

1. It is important to teach creative thinking skills while teaching the foreign language, because they improve the students' ability to new vocabulary, generate new ideas and fulfil the Ministry of Education requirements, which are mentioned in the Yearbook (Ministry of Education, 2003:16):

“A (Talented project) should be designed to take care of those gifted students whose abilities are intellectually high and needed to be developed. The Ministry of Education in Bahrain will establish a committee to help those students to think freely and adopt their ideas to transform them into reality. This all is to create a generation of future who can be able to follow the rapid changes in science and information.”

2. To gain creative abilities when learning the foreign language, it is important for the students to apply the abilities when learning subjects of specialization. This can be seen in the way students in the study developed after being exposed to the treatment programme on commercial and business issues.
3. Teachers who are seeking methods to engage students in creative and critical situations should help students through a process whereby they can freely express their opinions, feelings and attitudes towards their future career and life. In addition, training students on perception, convergent and divergent thinking skills will enable students to go beyond what is obvious from the question and use all their ideas and knowledge to practise the language.
4. Re-design the school curriculum so that it is based on creative thinking skills, which have become a necessity in accordance with modern trends in education and curriculum design. This will support the Ministry of Education's needs, which are mentioned in the "Committee of Talented Students" that is assigned to take care of them:

"The Ministry of Education – Directorate of Public Relations has recorded 15 times the recommendations from the governmental schools and specialists of the necessity of applying creative thinking approaches in the educational system."
(Ministry of Education, 2003:10)

5. This will require the educators to develop or even change the traditional methodologies of teaching and learning upon which the contemporary school curricula are designed and planned. Having such curricula that challenge the learners and give them an opportunity to go outside the traditional way of thinking into what is critical and regulative will help them when it comes to the selection of profession and the planning of a future career.
6. More research work is required to be carried out in order to provide more suggestions and solutions for developing learners' thinking abilities and their implementation in real life situations.

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Appendices

Appendix (A)

**UNIVERSITY OF BAHRAIN
College of Education
Department of Curricula & Instructions**

Treatment Programme

**(Based on Perception, Convergent Thinking,
and Divergent Thinking)**

**Hassan M. AL Wadi
(M.Ed student – University Of Bahrain)**

ACTIVITY (1)

Discuss the following topic with your partner, and then write a short essay about: "The characteristic of my future career."

In this topic we are going to discuss how you make your choice of occupation. You have looked at many careers and chosen a few, so you have a list, which is manageable and not too long.

Maybe you can already decide on or establish what you really want to get, your definite aim for your working life. You still have more than one career open to you and you must choose between the alternatives that remain and are still on your list. If you are not happy with the choice you have made, you can explore more possibilities. Seek advice. Ask other people what they think. Make a plan to help you get what you want, to bring you the fulfillment of your aims.

ACTIVITY (2)

Read this dialogue and answer the questions below:

Social worker:

Good morning everyone. Part of my job is to help students choose their options for the university level, because specialization in different careers starts from the third secondary. It's important therefore, for students to choose their options very carefully because they will need special skills and requirements for different kinds of careers.

Ahmed:

What exactly do you mean?

Social worker:

Well, what I mean is that if students want to specialize in business subjects, for example, they must be good at mathematics and English language and they ought to get good marks in the final examination in those two subjects.

Ahmed:

Oh, I see. Thank you! I wonder if you'd mind telling me what you think I need in order to choose a career.

Social worker:

Well, I certainly think you need more information.

Nadia:

Excuse me interrupting but I would be grateful if my senior teacher could tell me how to choose an occupation of field from a list of careers.

Senior teacher:

Yes, certainly. Well I think you have to be able to establish a definite occupational goal yourself and then think carefully about the skills needed for that career so that you choose your specialized subjects very carefully.

1. Write one term from the passage above, which means nearly the same as in the table:

No.	Term	Meaning
1	Freedom to choose	
2	Decide	
3	Work / job	
4	Set up	
5	Must	

2. Write one word from the passage that means the opposite for the following words:

No.	Word	Opposite
1	Same	
2	Junior	
3	Ends	
4	Least	
5	Bad	

ACTIVITY (3)

Write as many different letter words - minimum is (6) - as you can, beginning with "C".

1.

2.

3.

4.

5.

ACTIVITY (4)

Part: A

Read the following text in no more than 20 minutes, then discuss the following questions with your teacher.

LOOKS : *Appearance Counts With Many Managers*

London – There is something downright undemocratic about judging managers' abilities on the colors of their eyes, the size of their lips, the shape of their noses or the amount of their body fat.

Yet looks matter a lot more in hiring and promotions than employers will admit to others, or even to themselves.

Airlines and police forces have long had height and / or weight requirements for their staff, arguing that being physically fit and strong – not too fat or public's safety. In some cases, unhappy employees are challenging the arbitrary rules, which have been used by the airlines to recruit only good – looking trying to be fairer to avoid lawsuits.

Scotland Yard requires its male (1.73 meters) tall and female employees to be at least 5 feet 4 inches. The Yard decided to accept shorter women a few years ago to conform with Britain's equal – opportunity rules.

Air France still requires its female cabin crew to be between 1.58 meters and 1.78, and men to be between 1.70 meters and 1.92 meters. They must also have a "harmonious silhouette." And British Airways grounds any members of its cabin crew – pilots excluded – if they are 20 per cent over the average weight for their height.

Being short or overweight may affect people's careers in other industries in more subtle ways.

"I used to do all my business on the phone when I was a manager in my twenties, because there I could command great authority," said Ilona Morgan of the Equal Opportunities Commission in Manchester, who is 5 feet tall.

Being too small and or overweight is only one way that looks can have an impact on someone's career. Academic research at Edinburgh University, New York University and Utah State University shows that the better-looking a person is, the more positive qualities they are thought to have and the more positive impact that has in a career.

Now discuss the following questions:

1) Do you think a certain type of appearance is necessary for some jobs? Explain why?

.....

.....

.....

2) In your opinion, is morphopsychology a useful recruitment technique?

.....

.....

.....

3) How are employment practices monitored in your country? Give examples.

.....

.....

.....

Part: B

Match the words from the text with their corresponding definitions in no more than 10 minutes.

No.	Word	Definition
1)	<i>To matter</i>	A person that you work for
2)	<i>To hire</i>	To need
3)	<i>Promotion</i>	Characteristics
4)	<i>Employer</i>	The long-term plan for your professional life.
5)	<i>To require</i>	To put in order of importance
6)	<i>Career</i>	To be important
7)	<i>Authority</i>	To give employment to someone
8)	<i>qualities</i>	A person who applies for a job.
		The power to give orders.
		A movement to a more important job, with more responsibility and money.

ACTIVITY (5)

Match the words from the text with their corresponding definitions.

No.	Word	Definition
1.	<i>Trade</i>	a work done in order to make new discoveries.
2.	<i>Innovate</i>	results obtained over a period of time.
3.	<i>Concern</i>	to do business; to buy and sell.
4.	<i>Patent</i>	amount of money used for a specific purpose.
5.	<i>Research</i>	to make changes and introduce new ideas.
6.	<i>Increase</i>	to go up; to rise.
7.	<i>Performance</i>	a company or business.
8.	<i>Budget</i>	a legal document which gives a person or company the exclusive right to make or sell an invention.

ACTIVITY (6)

Read the following description of how 3M developed its famous Post-it notes.

Spencer Silver was a 3M research chemist whose objective was to produce the strongest adhesive on the market. Although he did not succeed in his mission, he did develop another type of adhesive that had two interesting properties: it could be re-used and it left no residue on the material to which it was applied. However, no one at 3M could find a use for this product and it was put aside temporarily.

Ten years later, one of Silver's colleagues, Art Fry, discovered a new use for the abandoned adhesive. Fry sang in a choir and used strips of paper to mark the pages of his hymn book, which fell out every time he opened the book. He therefore decided to apply Silver's adhesive to the strips and found that they marked the pages and did not fall out when the book was opened. This was the first step in the discovery of the future Post-it note.

Discussion time:

1) Why do you think this product has become so popular?

2) The Post-it notes were invented thanks to the fact that 3M allows employees to spend 15% of their time working on personal projects. Do you think this idea could be extended to other types of companies?

ACTIVITY (7)

Complete the following passage using words related to your study:

Since the beginning of the century, 3M has known that it must continually In order to survive. Indeed, the company has been responsible for the of 60.000 products, each of which is protected by a

The successful of 3M over the years is due to several factors. Firstly, the company spends a large part of its annual on the creation, improvement and testing of products. The company also has a flexible structure which allows employees to change jobs frequently, from to manufacturing, or from manufacturing to marketing. The exchange of ideas and information is also a key aspect of 3M's of constant innovation. Top technical people attend an annual meeting at the products. Another interesting fact about 3M laboratories show their latest products. Another interesting fact about 3M is that it encourages to spend 15% of their time on personal projects. It was this annual policy which enabled 3M employee Arthur Fry to one of the most famous 3M inventions –the Post-it note.

ACTIVITY (8)

Work in pairs:

Read the following company profile and study the kind of information it contains.

Be prepared to answer questions about it.

The MoDo Group is an international company . Its headquarters are in Stockholm . The president and Chief Executive Officer is Bernt Lof . Its main areas of business are fine paper , newsprint and magazine paper and other wood products . Most of MoDo's production is carried out in Sweden but the company is present many European countries and in the United States . More than 80 % of the Groups total sales of 18.4 million Swedish kronor in 1990 came from countries outside Sweden primarily the European Community . the company has about 12,961 employees .

Now ask your partner questions to obtain similar information about the comp~ she has been working on, and complete the notes below.

Name of Company
Headquarters
Chairman.....
Business activities
Main markets
Sale in 1991
No. of employees

ACTIVITY (9)

Part: A

Put the verb into brackets into its correct form.

Interview

Interview assessment

Articulate and well presented, Paul Sutherland is an excellent candidate for the post of Director of Software Engineering .

He (want) to leave his present employer, a small computer company, because he (feel) that he (not use)his knowledge of software engineering to the full. He (look for) a more challenging position where his field of specialitsion can be exploited in a more stimulating environment . He(realise) that our company (grow) rapidly , and that he would be expected to contribute to that growth. He is familiar with our existing range of software and regularly (read) our publications.

Although at present he (live) in the south he (say) that he is willing to go wherever we (decide) to send him . He occasionally (travel) to various European countries for trade fairs and exhibitions and (enjoy) meeting people of different nationalities . At the moment he (attend) a training course at the Goethe Institute in order to perfect his German.

Mr. Sutherland (go away) tomorrow for two weeks. I (suggest) that we contact him on his return to offer him a
second interview

Part: B

Look at the job advertisement and answer the questions :

- a) Who placed the job advertisement in the newspaper ?
- b) What job is being offered ?
- c) In what sector of business?
- d) What is required for the job ?
- e) Where will be successfully candidate work ?
- f) Where are the company's headquarter ?

ACTIVITY (10)

PART: A

Work in pairs. The following examples illustrate different mistakes that have been business. In each case identify the mistake and then discuss what should have happened

Example:

After a famous European pen manufacturer had redesigned one of its luxury pens customers found that they leaked.

They shouldn't have changed the design. They should have tested the new design more carefully.

- 1 A company selling fridges in Saudi Arabia included in its brochure a picture of its models with the door open and with a smoked ham lying inside.
- 2 An American car manufacturer launched a new car on the Spanish market under name 'Nova'.
- 3 A British food retailer received complaints from its customers in France who had bought its bacon thinking it was country ham.
- 4 A food company was unsuccessful when trying to market a cake mix to Japanese housewives, by suggesting that it could be cooked in their electric rice cookers.
- 5 An international bank sent a young woman executive to run its Japanese operation.
- 6 An American tobacco company had problems when it targeted only black consumers a new brand of cigarettes.

ACTIVITY (11)

Part:A

Choose the word or phrase which best completes each sentence.

1..... is the general term used for all types of stocks and shares.

a Gilt-edged b Investment c Securities

2.A is an organization which defends the wages and rights of the workers who belong to it.

a pension scheme b life assurance c trade union

3.The part of the Stock Exchange where shares are bought and sold is call the

a floor b market place c screen

4.....advise their clients of what investments to make and buying and selling shares.

a Wholesalers b Counterparts c Blockers

5.To..... a price means to give the price at which one is pr sell a share.

A act b quote c undertake

6.A business deal done between two people is known as a(n)

.....

a instruction

b transaction

c membership

7.The total wealth of a company in terms of money and property is called.....

a funds

b capital

c charges

8.The information contained in the SEAQ system is constantly up with changes in the market.

a automated

b updated

c traded

Part: B

Complete each sentence with the correct form of the words on the left.

1 to save He invested most of his in the Stock Exchange .

2 to invest My stockbroker advised me to make several safe.....

3 to compete on the personal computer market has i considerably over the past few years.

4 partnership Both..... in the business agree that hard w
their success.

5 to quote The prices given for buying and selling shares on the Sto known as

6 member Trade unionhas declined in the United States.

ACTIVITY (12)

Speaking

Part: A

With a partner, look at the following list and choose a product which one of you has recently purchased. This person will assume the role of Student A.

- moped, motorcycle, bicycle
- computer, software, calculator
- photographic or video equipment
- watch, jewellery , accessories
- clothing
- hi-fi or audio equipment
- records, tapes, compact discs

Student A

Prepare notes on your reasons for buying the product and for choosing the shop in which you bought it. Did you intend to buy the product before shopping, or did you buy it on impulse? Had you bought this type of product before? Was it your first time in the shop? How would you describe the service, the prices and the overall atmosphere of the shop? Are you satisfied with your purchase?

When you have finished, answer Student B's questions.

Part: B

As a class, determine what made the majority of those playing the part of Student A buy thier product. Was it the result of a carefully planned process or a sudden decision to buy. most people satisfied with their purchase and the service they received? Were there serious complaints?

ACTIVITY (13)

Match the words from the text with their corresponding definitions.

- | | | |
|-----|-----------------------------|---|
| 1. | profile (<i>subtitle</i>) | a) a sum of money given in addition to a salary |
| 2. | Attitude | b) an assembly of people, discussion |
| 3. | Relationship | c) to tell an employee that his/her job |
| 4. | Meeting | d) to make something more efficient |
| 5. | Suite | e) to be right or convenient for |
| 6. | Bonus | f) reductions in the number of employees |
| 7. | Motivate | g) the connection between people |
| 8. | Redundancies | h) to stimulate someone to something |
| 9. | Rule | i) a statement which tells you what you
or must do |
| 10. | Sack | j) a description of a person's characteristics |
| 11. | Rationalize | k) a way of thinking or behaving |

Appendix (B)

**UNIVERSITY OF BAHRAIN
COLLEGE OF EDUCATION
DEPARTMENT OF CURRICULA & INSTRUCTIONS**

Test of Career Orientation

Pre-Post Test

**Hassan M. AL Wadi
(M.ED. Student - University Of Bahrain)**

Pre/Post Test
"Test of Career Orientation"

Read the questions below and answer all of them:

- 1) What do you think is the meaning of occupation?

- 2) What area of study would you like to follow at this unit 'Applying for a job'?

- 3) Where do you see yourself in five years time regarding your career?

- 4) Where do you see yourself in 10 years time regarding your career?

- 5) Do you need much information in order to choose which subjects to study at university?

6) Do you need help from your senior teacher to help you decide which subjects you choose?

7) Have you a clear career path worked out?

8) Why are you looking for help to choose your subjects?

9) Which of these careers would you like to follow? (Choose four (4) of them and say WHY)

- a. Clerk
- b. Chemist
- c. Computers
- d. Civil service
- e. Contractor
- f. Comedian

END OF TEST