Development of Creative Thinking Skills in the English Language Teaching Profession[1]

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ABSTRACT

The capability to think creatively is essential for human source competencies so that to boost universal competitiveness. Creative thinking is one of the utmost assets in the capability to solve problems. This term paper addresses creativity as an educational style, reviews the associated theories and patterns of creative learning, and compacts with teaching creativity to teachers generally and Iraqi teachers specially. This notion was proposed by the researcher and examined. The pattern of creative growth is the major topic of this study, which covers five essential components of teacher performance: contextual-social, affective-cognitive, mental, educational, and physical aspects. A portion of this research looks at how the program and the pattern of creative development affect instructors' abilities. Teachers' feedback on their shift in classroom results, despite the passage of many years, showed they have used the pattern positively. All of the instructors taking the course indicated that the training helped to make their pupils more excited, moving from teacher-centering towards learner-centered schools.

INTRODUCTION

The improvement of students' thinking skills is a major goal of contemporary education, and the concepts of critical thinking and creative thinking serve as focal points for this effort. We want our pupils to be more critical thinkers as instructors. This entails improved thinking skills in dealing with real-life problems, such as assessing information and arguments in social contexts and making life decisions, as well as improved thinking skills in dealing with curricular subject areas, such as understanding the reasoning employed, assessing independently and appropriately, and solving problems effectively. We also want pupils

to be more creative—not just copying old patterns, but inventing new ones.

To respond to changing events in a productive manner, discover new and better answers to issues, and create creative works. The goals of encouraging critical thinking and encouraging creativity are generally thought to be unique and distinct.

Analytical thinking is associated with critical thinking. It is a method for making decisions inside a specific framework or setting. On the other side, creative University of Manitoba thinking is seen as inventive, constructive, and generating. It's what makes it possible to break free from or transcend the framework

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itself. The link between the two modes of thinking, however, is a point of contention among theorists.

Some people see them as opposing but complementing. For instance, according to Glaser, "Critical thinking is aided by creativity. It may or may not be a necessary component of critical thinking." [1] Other theorists, like as De Bono, argue that there is a contradiction between critical and creative thinking, and that breaking free from a prevalent framework necessitates abandoning the framework's logic and critical assessment criteria. Both parties, on the other hand, agree that critical and creative thinking are fundamentally distinct and, as a result, require different pedagogies.

The complementarity perspective usually comprises efforts to teach critical thinking abilities on their own, as well as approaches to enhance flexibility, spontaneity, and divergent thinking, among other things. Some components of critical thinking and disciplinary skills are frequently abandoned in favor of such creativity approaches in the alternative view, because the former are inhibiting to the latter.

"Too much knowledge inside a profession may impede creativity because you know so well how things should be done that you are unable to leave to come up with fresh ideas," De Bono says of the second issue.

The global environment is becoming more chaotic and competitive by the day. It is crucial to prepare kids to live, work, and succeed in this environment (Ford & Gioia,2000). The capacity to spot and capitalize on chances has become a necessary talent (Florida, 2002). When it comes to teaching current students and future citizens to deal with uncertainty and adapt to constant change on a personal and professional level, creativity becomes the focal point. Over the course of several decades, definitions of creativity have expanded to include: (a) conceptions of the creative process or mental processes that are used to generate ideas.

WHAT IS THE DEFINITION OF CREATIVITY?

Creative thinking is a skill that allows you to look at things from multiple viewpoints and perspectives. Surprising insights and novel approaches emerge from a creative thought process. A way of doing things Brainstorming or lateral thinking can help you come up with new ideas, which can help you be more creative.

►**The following are some examples of creative thinking:**

- making and communicating connections to consider a variety of options
- Considering and experiencing iniquitous approaches, as well as utilizing various points of view.
- conceptualizing fresh and unique possibilities
- assisting in the generation and selection of options

Creative thinking is a skill that allows you to look at things from multiple viewpoints and perspectives. It's a creative thinking process that leads to unexpected findings and fresh ways of doing things. Brainstorming or lateral thinking can help you come up with new ideas, which can help you be more creative.

Students learn to produce and apply new ideas in specific circumstances, understand current situations in new ways, uncover alternative explanations, and see or make new relationships that lead to a beneficial end through creative thinking.

For college students, creative thinking (which goes hand in hand with critical thinking) is a vital skill. It's crucial because it allows you to see problems and situations in a new light…. You look at issues as exciting opportunities to learn, and you question assumptions while suspending judgment. Creative thinkers are able to see things in new, unconventional ways and come up with answers that no one else has considered. Innovation and growth are propelled by creativity.

Creative Thinkers' Characteristics

• A keen interest in learning and new discoveries • an open mind • a willingness to accept risks

   • Adaptability and flexibility

   • Excellent written and oral communication skills

Techniques to Help You Think More Creatively

• Nurture your creative courage. Many people lack the guts to take a risk in the workplace and try something new.

• Be a leader for the rest of your life…

• Strive for a work-life balance.

• Pay attention to what others have to say…

• Steal concepts.

► **The following are some of the elements of creative thinking:**

• Curiosity: The insatiable desire to learn new things and develop oneself.

• Think independently: Applying what you have learned.

• Sharpen Your Senses: Sharpening the senses is a good thing to do.

• Embrace Uncertainty: Managing Change and Ambiguity

• Logic and Imagination in Balance: Whole-brain thinking

• Body-Mind Fitness: Maintaining a healthy body and mind.

• Make New Connections: Think in Systems.

WHAT DOES IT MEAN TO HAVE CREATIVE THINKING SKILLS?

There are numerous associations that come to mind when the word "creativity" is mentioned. It appears nearly beyond the reach of mere mortals in some circumstances—few of us can conceive walking in the footsteps of Einstein or Curie, Picasso or O'Keeffe, Mozart or Charlie Parker. Their achievements are proof of their ability to strike in terms of originality and strength, not just contributing to but also altering their fields. Many of us, on the other hand, have made a recent casserole out of refrigerator materials, jury-rigged a Perkins (1988) definition of creativity:

(a) A creative work provides both original and acceptable results, (b) A creative person—a person with creativity—is a person who delivers creative products equitably and frequently" (p. 311).

As a result, we might assume that the term "creativity" or "creative thinking" refers to a particular type of thinking.

New ways of thinking, new techniques, new viewpoints, and entirely new ways of perceiving and conceiving of things Music, poetry, dance, dramatic literature, inventions, and technological advances are all examples of creative thinking's output. However, there are other less obvious examples, such as phrasing a question in a way that broadens the range of possibilities. Solutions or new ways of thinking about relationships, that challenge preconceptions and lead to new and inventive ways of seeing the world.

THE IMPORTANCE OF INNOVATIVE THINKING ABILITIES

In both teaching and learning, teaching creative thinking abilities is essential. As well as the creation of a better society, The next paragraphs will shed light on the importance of creative thinking abilities.

1. When we educate in a way that promotes creativity, it is precisely such pattern stretching that we hope to achieve. Students consider knowledge from a variety of perspectives, applying it in novel ways or associating it with novel or intriguing ideas. These

connections strengthen the content's connections. As well as the intellectual practices associated with more flexible thinking

2. Individuals created works of art or literature in each case because they needed to communicate something. Communication was not always straightforward. The formats were often difficult to manage or the ideas were difficult to come up with. The creators persevered in the face of adversity. They wanted to provide the audience new methods to construct meaning or to share a vision of the world. Visual artists, storytellers, musicians, dancers, mythmakers, playwrights, and other creators have all attempted to create meaning and a shared vision throughout history.

3. The concept of creativity, as a vehicle for renewing and sustaining communities, imposes a new layer of responsibility on teachers, one that seems particularly appropriate in the early years of the new millennium.

4. In many so-called creative school activities, the most basic process of creativity, the effort to communicate, is missing. Individuals used their imagination to communicate and solve difficulties.

5. Problem solving underpins all forms of creativity in its broadest sense. They had a hard time coming up with concepts for their paintings because they were manipulating materials. Finding a communication topic or theme, as well as a society problem or need, can be termed problem solving.

6. While researchers attempt to outline the most effective teaching strategies for supporting student learning, such lists frequently include activities for locating and solving problems. For example, William Bennett (1986), a staunch conservative, included the use of experiments in his list of "What Works," among more traditional tactics like direct instruction and assignments.

7. Simply put, if we want to teach effectively, we need to use strategies that encourage creativity. Allowing pupils to be creative necessitates allowing them to identify and solve problems as well as communicate ideas in new and relevant ways.

8. We have been taught that creativity can be used for both good and evil, in both big and small ways. We honor beautiful art and discoveries that enable us to live healthier, more creative lives. It is, however, possible to use creative thinking to come up with fresh and unique ways to do awful things.

9. According to Bowers (1995), we risk undermining students' sense of responsible self-questioning and community care by assisting them in articulating their individual thoughts and planning individual actions.

10. Creativity aims for a good balance of searching (for old ideas) and imagining (for new ones) so that we can combine the two.

11. During the non-working period of incubation, creativity can emerge from a combination of conscious and unconscious thinking.

12. This is very comprehensive, worth looking into, and useful for getting a broad overview of the field.

THE BEST CREATIVE THINKING TECHNIQUES

A) Solving Problems
Taking on unanticipated difficulties necessitates a great deal of ingenuity. Employers seek to hire creative thinkers not for their originality per se, but for their ability to apply it to solve issues in novel ways.

B) Imaginative Writing
One of the most common and sought-after creative abilities. It will help you a lot in marketing, sales, and, of course, journalism if you can write in a captivating, creative style. It will, however, be useful in any other job that requires writing, even if it is merely producing emails, reports, and presentations.

C) Open-Mindedness is a quality that many people possess.
When you are open-minded, you challenge stereotypes and seek out new ideas and methods of doing things

rather than sticking to tried and true techniques that may or may not be the best.

D) Observation

It is fantastic if you can obtain data and information, but you will not be able to examine it without creative thinking skills. Analytical thinking creativity aids in the extraction of meaning from sets of raw data.

E) Communication is essential.

You will never be able to put your ideas into action if you are unable to explain them in an entertaining and innovative manner. Furthermore, there are various types of communication abilities.

F) Active listening is a skill that may be learned.

What does it mean to be "creative" when you listen? Well, active listening allows you to process ideas more quickly, allowing you to challenge and develop them later during a brainstorming session.

G) Marketing and Sales

Persuasion is a key component in selling and marketing. To begin, create a creative message that will complement your sales pitch.

H) Designing Graphics

Where art and innovative ideas collide. Graphic design requires artistic crafts man ship, but without new, unique ideas, even the most stunning concepts and projects will become bland and lifeless.

I) taking the initiative

It is all about inspiring others when it comes to leadership. Nonetheless, outstanding leadership abilities based on bold and imaginative ideas and visions enable you to connect teams and urge people to collaborate toward a common goal. One thing to bear in mind before we move on to examples of how to employ creative thinking talents in the workplace and how to demonstrate them in the job search. Creative and critical thinking skills are two phrases that are sometimes confused. These, however, are not the same.

TECHNIQUES FOR IMPROVING YOUR CREATIVE THINKING

1) **Create a list of ideas**
Because structured methods and norms frequently limit a group's ability to freely express their thoughts, brainstorming is becoming more popular among groups. Brainstorming creates an environment in which people can open up and freely share their thoughts and ideas without fear of being judged. In general, there are two forms of brainstorming: Individual

And brainstorming in groups:

• **Individual brainstorming** — without the worry of being blocked or constrained in a group, you can brainstorm on your own. This kind of brainstorming is best for basic problems that may be solved without involving a larger group.
• **Group brainstorming** — you toss ideas around in a group so that others may assist you develop an idea further. When you have the correct amount of people participating in the activity, this sort of brainstorming works best for difficult problems.

When brainstorming with a group, these are some typical approaches to use:

• Role storming – individuals of the group take on different roles while brainstorming.
• Round-Robin brainstorming – each group member shares an idea first, then the whole group discusses it.
• Star bursting — creates questions to help you think more creatively.
You must remind all group members to explore all ideas and options, collaborate, and acquire outside perspectives in order to have a successful brainstorming session. These will assist you in gathering as many thoughts as possible without becoming exhausted.

2) Use of Mind Maps

Using mind maps to unlock creativity is another excellent method. A mind map is a visual

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representation of information organized around a key theme. You can use visuals and colors instead of text, which is unlike conventional note-taking systems. This is a visual tool. It is a great way to improve your creativity because it allows you to delve deeper into a notion or issue, honing it down to the most specific details in an organized manner.

Because thoughts are split down along the way, Mind Mapping speeds up problem resolution. The following are some commercial operations where mind maps might be beneficial:

- **putting together a presentation**
- **establishing aims and goals**
- **making choices about opportunities**
- **developing a marketing strategy**
  - **developing a content strategy**

3) Your Thought Process

If you want something you have never had before, you'll have to try something new. Changing your mindset is essentially the same as reframing your ideas.

• be curious and eager to ask questions
• be deliberate in your pursuit for new information
• Schedule time for creativity
• Take a break from the loudness every now and then.

4) Role-playing is a fun way to learn new things.

Roleplaying is a technique for generating ideas based on the outcomes of hypothetical interactions and situations. This is a good method for coming up with product ideas and predicting how they will perform in the market. If you role-play with your coworkers or other team members, you'll be shocked at how many solutions you overlooked when you were just taking notes.

5) Rethink your problems

When you are trying to solve a problem through creativity, you can meet a brick wall. It will be difficult to continue unless you re-conceptualize the situation by taking a step back. What is the best way to rethink a problem? The following steps are involved in re-conceptualizing a problem:

• looking at a problem from a different perspective
• determining what elicits the highest emotional responses

• adopting a new perspective
• pondering alternative viewpoints
• taking into account the needs of your target audience

6) Investigate the Various Theories of Creativity

There are many theories on creativity, but here are five of the more intriguing:

• Psychoanalytical Idea of Creativity – This theory states that you become creative in response to adversity or suppressed emotions.
• The Mental Illness Theory of Creativity – Some people are only creative when they are mentally sick.
• The Creative Theory of Psychoticism – All creative persons have psychotic tendencies similar to those experienced by people with schizophrenia or bipolar disorder.
• The Addiction Idea of Creativity – According to proponents of this theory, substances like alcohol and drugs lead to creativity.
• The Humanistic Theory of Creativity – Unless humans have addressed their basic wants, they will not be creative.

They are unable to be creative. There are also other theories of creativity that pertain to business innovation. The following are some examples of such theories:

• Tribrachic Idea of Human Intelligence – According to this theory, creativity is a balance of many types of thinking, such as analytical and practical thinking.
• Investment Philosophy – According to this theory, marketing a creative concept requires perseverance.
• Multiple Intelligences View — According to this popular theory, creative abilities are domain-specific. The strength of one's creativity is strongly dependent on which of the eight intelligence areas a person possesses.

You may learn more about what drives your creativity and how to improve it by looking into the various theories of creativity. You won't be able to maximize your strengths unless you educate yourself.

7) Take a daydream

Have you ever been chastised at work for daydreaming in the middle of a hectic day? Daydreaming is frequently related with indolence and a lack of concentration. Did you realize, though, that

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daydreaming could be one of the reasons you're so creative at work? According to a study published in the journal Psychological Science, allowing your mind to think and wander can help you be more creative. High degrees of daydreaming are most beneficial in tasks that do not limit the mind's ability to come up with new ideas.

8) **Don't be afraid to ask a lot of questions.**
In order to reach maximal creativity, you need be able to master the skill of asking the appropriate questions. What questions can you ask to help you become a more creative problem solver? These are the kinds of questions that delve into possibilities and turn obstacles into opportunities. These are frequently the types of inquiries that stimulate higher-order critical thinking skills, such as those that begin with the words "how" or "why." Market research projects that focus on fixing problems are the most successful. Focus your queries on the following issues:
- **the nature of the problem**
- **characteristics of the product**
- **a lack of time**
- **competition that already exists**
- **client feedback.**

9) **Decide on the best mood to create in.**
To determine your ideal mood for creative activities, you must first gain a better understanding of yourself. Positive emotions are known to increase creativity. Happy moods, according to University of Western Ontario researchers, enable cognitive flexibility, which leads to a positive mood that embraces ideas freely. According to a study conducted by Professor Joseph Forgas of the University of New South Wales, negative moods can now be beneficial. Negative emotions clear the mind of cognitive biases and promote memory and motivation, which boost creativity.

10) **Remove Yourself from the Surrounding Noise**
According to several studies, coffee shops are the ideal place to work. Because most coffee shops have a moderate level of noise, being creative is easier. Too much noise can be distracting, but not enough "acceptable" noise can be overwhelming, even demotivating. If you absolutely cannot function in a noisy atmosphere but must be at the office where there are many interruptions to deal with, you can:
- **use headphones**
- **find a quiet spot**
- **get permission to visit a nearby café**
- **confront a coworker in a courteous manner**

11) **Just Begin**
You will be able to exercise your creative thinking talents the more you create, especially if you:
- **participate in hands-on learning**
- **look for sources of inspiration around you;**
- **identify your learning style and passion; a**
- **participate in activities that promote creativity.**

► **here's a fast rundown of all you need to know about creative problem-solving abilities:**

• Problem solving, writing, visual art, communication skills, and open-mindedness are all examples of creative thinking skills.
• Web and mobile development, web production, user interface and interaction design, creative development, and visual design will be the top sectors for creative hiring in 2019.
• Don't merely describe your creative thinking skills on a CV or during a job interview; show how you applied them in real-life situations.
• Leaving your comfort zone, brainstorming, forcing yourself to overcome a creative barrier, mentally unplugging once you've started working on a project, and thinking about romantic love are the finest ways to promote creativity.

► **How can you cultivate your ability to think creatively?**

1) Using innovative ideas can help you advance in your career. If you don't have this gift naturally, there are a few strategies you may use to teach yourself and others how to incorporate creativity into their work processes: -
- **Come up with a list of suggestions. Brainstorming sessions might help you come up with new ideas.**
- **Role-playing scenarios**
- **Reframe the problem…**

- **Take use of your creative flow.**
- **Maintain an open mind and be adaptable.**
- **Don't let your ego get in the way.**

2) Create a list of ideas.

Brainstorming sessions might help you come up with new ideas. They're especially useful if you have a large crew because they allow you to generate more ideas. Include everyone in the group or team, even if they aren't directly involved in the project or have occupations that don't often require problem-solving. Because they come from diverse viewpoints and may have alternative approaches to the problem than your regular procedures, these members may offer unique insights.

3) Scenarios for role-playing.

In the military and emergency response units, role-playing is a frequent training tool. Some companies are also adopting the strategy to train new personnel. However, role-playing does not have to be limited to new hires. You may discover new ways of looking at an issue and potential solutions by acting out various circumstances and scenarios. Because they'll need to respond fast and think on their feet, you'll also be able to assist team members in developing confidence and becoming more comfortable when dealing with unknown situations.

Two or more members of a group act out a situation in role-playing. It could be dealing with a new client, delivering a presentation, conducting interviews, or settling problems. Essentially, you can role-play any challenging circumstance and get better at it with practice. People will have some practice finding resolutions rapidly on their feet if they can role-play a scenario before experiencing the dilemma in real life. You might also take a different perspective on the situation and come up with new solutions to solve challenges.

4) Reframe the situation.

You can reinterpret an issue or scenario by reframing it. When you offer the problem in a new light, you will be able to see it from a different perspective. Options for how people react, feel, and analyze the circumstance, leading to fresh solutions Consider many interpretations, contexts, and perspectives for the current circumstance. Consider what you can learn

from the challenge. After you've looked at these diverse perspectives, you might be able to see the problem in a new light and come up with a fresh approach. You could also ask others to help you reframe the problem. This can expand the variety of perspectives from which you can consider the problem and its solutions.

5) Take advantage of the creative flow.

When you become thoroughly absorbed in a project to the point where you lose track of time. You are in a state of creative flow, with no external interruptions. This mood is linked to high levels of creative activity, so you might come up with some of your best ideas while in it.

While you cannot generate flow because your brain's chemistry and activity change when you are in this state, you can seek out circumstances that will help you produce your best work. If you are deeply involved in an activity that engages you and brings you pleasure, you are more likely to find yourself in this state. If you are passionate about a project, you are more likely to find yourself in this state. While in a state of flow, creative people make the most of the insights and ideas that come to them. As a result, it might be a crucial aspect of your creative process. Some of your best work may come from your thoughts while you are in this mindset.

6) Maintain an open mind and be adaptable.

One characteristic of creative people is that they do not see boundaries where others do; boundaries stifle invention. You will not be able to discover solutions that are off the beaten path if you are constantly observing the constraints of what you can achieve. After all, that is what it means to think outside of the box.

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People that are inventive thinkers do not regard solutions as confined to what can happen within the

constraints of regulations, rather than confining themselves to what the rules allow. Instead, they use creative problem-solving talents to envision nearly endless possibilities. If you wish to boost your performance,

Be open-minded to solutions that may expand outside the parameters with which you're comfortable with your creative process and skills. Also, be open to other people's ideas, which may include problem-solving techniques that are unexpected or unusual for you and your team.

8) **Do not let your ego get in the way.**

You will almost certainly face difficulties in your professional and personal life. Not every one of your ideas will work out. Your capacity to regard failures as transitory rather than permanent will set you apart. If you keep trying, you will eventually succeed—you may just need to take a different way to get there. Mary Hibestselling suspense author Mary Hibestselling suspense author Mary Hibestselling suspense author Mary Hibestselling suspense

Also, believe in yourself and your ideas enough to give credit where credit is due. Let other people know whether a team member or a report came up with a winning proposal. Recognizing the successes of others and enabling them to have their moment in the spotlight is an important part of being a great leader and thinker.

TECHNIQUES FOR ENHANCING STUDENTS' ABILITY TO THINK CREATIVELY

1. Ask where can I use this?

We see most things through the prism of habit and familiarity, including items, structures, locations, materials, technology, and systems. We take them for granted, ignoring a plethora of other options. Overcome the mind's predisposition to think that something can only work in a certain way. "What else can I do with this?" is a good question to ask yourself. It will lead to new discoveries and ideas.

2. Pay attention

Guy Claxton, a science professor, noted, "Creative people are expert notices." They've honed their visual foraging skills, which include recognizing, gathering, and utilizing items that most people overlook. Having an active rather than passive curiosity about the world around you can lead to the discovery of new ideas. Be nosy, be observant.

3. Make it easy on yourself

Overabundance of information frequently obscures issues. Spend time understanding and identifying the problem to help you clarify and isolate the situation you're dealing with. Is it possible to reduce it to 10 words, 5 words, or even 3 words?

4. Experiment with different systems

Taking a ready-made, successful, tried-and-true current system and applying it to a new field of practice can lead to significant innovation. Owen Maclaren, an inventor, invented the first collapsible baby buggy by adapting a folding technique.
Spitfire planes' undercarriages from World War II. James Dyson took sawdust-sucking cyclone mechanisms from sawmills and adapted them to the home vacuum. Both of these innovations transformed previously established designs. Try borrowing a system from another field if you find your existing system unsatisfying or inadequate.

5. Reschedule

Changing one's perspective on something can expose fresh possibilities and thoughts. This can be accomplished by using examining every available angle and rearranging context—by removing objects from their customary setting and placing them in a new one.
In a supermarket, you'll see boxes of wire scrubbing pads and soup cans. Dead cows and sheep may be discovered at the rear of every butcher's shop, and unmade beds can be seen in every teenager's bedroom. When they're at an art gallery, however, they're a big deal. Marcel Duchamp, who submitted a porcelain urinal laid flat on its back to an art exhibition nearly a

century ago, was the first artist to realize that such repositioning could have an impact when his submission to an art exhibition of a porcelain urinal laid flat on its back caused an enormous scandal.

6. Experiment with translation

The transformation process stimulates ideas in a big way. Converting things from one form or medium to another can lead to completely new and intriguing avenues of thought. One thought leads to another, and you are on your way to finding new ones.

7. Simply improvise

Improvisation is a form of creativity that defies the odds. It is a manner of thinking and doing that can lead to answers in extremely difficult situations like being imprisoned, cast out, stranded, besieged, trapped, and penned in, lost at sea, capsized, or shipwrecked.

8. Be aware of your process

It is critical to learn which conditions make you the most creatively productive in order to generate ideas rapidly and repeatedly. "If we wait for the mood without attempting to meet it halfway, we easily become lethargic and apathetic.

9. Personalize it

Use things from your own life and experience to generate ideas—facts about yourself or your family, as well as information from your past.

WHAT ARE THE ADVANTAGES OF THINKING CREATIVELY?

The problem-solving process necessitates creative thinking. Using creative thinking at work can help you become a more useful team member by generating ideas that the organization can exploit. Thinking creatively can also help you generate ideas that could lead to new products or services. Many famous thinkers and entrepreneurs are or were creative thinkers who went their own way and made some of history's most important discoveries and inventions: Marie Curie, Steve Jobs, Nikola Tesla, Ada Lovelace…the list goes on and on. While many of these brilliant innovators had unconventional ideas

and methods that seemed strange to their contemporaries, their contributions were significant.

DIFFICULTIES OR ROADBLOCKS TO CREATIVE THINKING

Lack of self- or other-directed guidance.
Being Fearful of Failure
Being Afraid of Being Rejected.
Changing or adapting to the situation is never an option….
Not planning ahead of time…
You rationalize, but you never get better.

CREATIVE THINKING SCALE AND MEASUREMENT

Creativity may be demonstrated and assessed in an unlimited number of ways since it is a "multi-faceted and complex thing" (Daniels, 1987, p. 163). Creativity evaluations are complicated and tough to compare. Divergent thinking tests (Cramond, Matthews-Morgan, Bandalos, & Zuo, 2005; Torrance & Goff, 1989), attitude and interest inventories (Clapham, 2004), personality inventories (Gough, 1979), biographical inventories (Amabile, 2001), and self-reported creative activities and achievements (Fleenor & Taylor, 1994) are among them (Kelly, 2004).

While tests of divergent thinking do not always equate to creative production or eminence, they were created to identify and promote abilities that help people express their creativity, specifically the Torrance Tests of Creative Thinking (Kim, 2006).
Divergent thinking generates several replies to a single topic or problem; as a result, this cognitive capacity is critical to master because the higher the number of ideas generated, the more likely an effective solution will emerge (Taylor, Berry, & Block, 1958). Over the years, evidence has accumulated.

Divergent thinking appears to be a separate capability that contributes to creativity and many sorts of creative performance in the last 50 years (Karnes et al., 1961; Runco, 1999; Vincent, Decker & Mumford, 2002). Fluency (the amount of ideas), originality (the degree

to which the produced ideas are unique), elaboration (the enrichment of ideas), and resistance to premature closure (the degree to which one has a "open mind") are all quantifiable components of divergent thinking (Wechsler, 2006).

Measurements of creative thinking ushered in the psychometric approach to the study of creativity in the late 1950s, implying that creativity could be researched in a variety of ways. Typical persons with scores distributed along a continuous scale (Rudowicz, 2004).

Individuals can demonstrate varying levels and degrees of creativity since creativity is a continuum rather than a binary metric. This shows that training and education can help to boost creativity (Torrance & Goff, 1989). Organizations and educational institutions have spent a lot of effort and money developing and implementing creativity training (Fasco, 2000-2001). Various trials and studies have backed and proved that training and exercising creative procedures improves 20 creative talents.

RESULTS AND DISCUSSION

A main factor analysis is used to examine the validity of the questionnaire. The factor of 18 Thinking Framework items was initially studied. These item level answers have been examined in factor analysis methods for underlying patterns (Note that all procedures reported here utilise SPSS). Several well-known criteria were utilized for the correlation factorability. First, at least 3 linked many items with at least one additional item, which indicated a reasonable factor. Secondly, the measurement of adequacy by Kaiser-Meyer-Olkin was 85°, beyond the suggested value of 6° (Kaiser, 1960), and sphericity was important to Bartlett (Too $2(153)=090.46$, p <-05). Inclusion of each item in the facteur analysis was supported by a diagonal of the anti-image correlation matrix exceeding 0.5. Finally, the collectivities were over .3(see Table 1), showing further that the difference between one item and other things was common. In view of these general indications, all 18 items have been analyzed.

The major objective was to discover and calculate composite thinking scores of elements underlying the

thought questionnaire The main component analysis was utilized (Tabachnick & Fidel, 1996). Initial proper values reveal that 27.2% of the variation was explained by the first component (Analytical Thinking Habits), 6.8% by the second factor, and 6.7% by the third (Metacognitive Thinking), 6.1% by the four thrust factor (Metacognitive Behavior) and 5.6% by the fifth (Practical Thinking). The five-factor solution which described the variation at 52.4 percent was selected due to the 'raising' of the value of the screen plot after five facts.

The five-factor solution, which explained 52.4 percent of the variance, was selected based on the 'degree of value' on the display plot after five factors; the Monte-carlo Parallel Analysis also validated that the 5-factor values were lower than those presented in the PLCA. Stevens (1996) used the factor load value of .40 and above as a cut-off value to accept an item under a dimension. All items were positively and had main loads above .4, and only one item had a cross-load over +3, although this item had a high primary load of .61..

CONCLUSION

Students must be prepared to think in various and more innovative ways in order to successfully adapt to fast changing work settings and effectively compete in the global economy (Florida, 2002). Creativity is becoming increasingly important to one's personal and professional development and success in the new millennium (Vance, 2007). This study sought to fill a gap in the literature by assisting students in developing their creative thinking abilities. To do this, the writers created four learning modules, each of which included a number of creativity exercises that could be used in a variety of courses. The exercises were given out in five classes by four professors.

The figural version of the Torrance Test of Creative Thinking (TTCT) was utilized to measure student creative thinking before and after the exercises to assess the effectiveness of the training. The results showed that following the instruction, the Creativity Index, a composite assessment of creative thinking, improved dramatically. Despite the fact that past research has shown that training can promote

creativity, the majority of the studies looked at the effectiveness of stand-alone creative courses or programs (e.g., Birdi, 2005; Clapham, 1997; Fontenot, 1992; Kabanoff & Bottger, 1991). The effectiveness of a series of short creativity exercises was established in this study.

In five distinct classes, four instructors administered activities. While the majority of students reported considerably higher creative thinking scores after completing the exercises, some students' scores did not increase and, in some cases, actually declined in the second assessment. There was no significant difference in student creative thinking measured before and after the execution of the creativity exercises in one of the five classes that participated in the experiment (class 2) (despite an increase in the post-test Creativity Index in comparison).

The difference between the pre-test Creativity Index and the post-test Creativity Index was not significant). It suggests that contextual and situational factors, such as the time of day when the exercises and assessments were given and/or the motivational disposition of those completing the creativity test, may have an impact on the results of creativity training and evaluation. Individual and contextual variables may have a role in low creativity performance, according to some data (Kabanoff & Bottger, 1992; Vosburg, 1998). More research is needed to determine the significance of contextual, situational, and personal factors in the effectiveness of creativity training.

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Appendix: Questionnaire

SA = *Strongly Agree*   A = *Agree*   NA = Neither Agree or Disagree   DA = *Disagree*   SD = *Strongly Disagree*

		SD	DA	NA	A	SA
1.	I learned how to focus on issues/problems by asking the right questions to my friends and teacher.					
2.	I improved my ability to use different strategies to problems.					
3	I do not give up easily and learn to persevere when answers to issues/problems are not evident.					
4.	I become less impulsive by taking my time to reflect on answers/arguments before giving them.					
5.	I learn to listen and respect alternate viewpoints.					
6.	I am able to evaluate the merits and demerits of new ideas.					
7.	I improve my ability to use different thinking					

	skills to generate new ideas/solutions.					
8.	I like the challenge of thinking of new ideas.					
9.	I enjoy problem-solving/decision-making.					
10.	I improve my ability to detect errors/bias.					
11.	I am more ready to describe/draw/write down my own thinking strategies.					
12.	In the competition, I learn about my own strength and weaknesses by reflecting on my actions.					
13.	I am more aware of things around me and ask more questions so as to understand something better.					
14.	I learn to probe by asking more specific questions.					
15.	The thinking skills that I learn have helped me in my academic learning.					
16.	I apply the thinking skills learned in class to real-life situations.					
17.	I am less afraid to express my thoughts/ideas.					
18.	I am less afraid to make mistakes.					

(Adapted from Tan, 2001)