

**A Training Program for Developing Saudi English Language
Prospective Teachers' Successful Intelligence and Higher Order
Thinking Reading Skills in the Light of the Successful
Intelligence Theory**

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Abstract

The present study aimed at investigating the effect of a training program based on the successful intelligence theory in developing Saudi English prospective teachers' successful intelligence and higher order thinking reading skills. Reviewing literature and related studies have indicated that teaching successful intelligence skills is essential for Saudi English language prospective teachers; because it is the kind of intelligence that will be the most valuable in the real world after school. Besides, engaging in higher-order thinking reading skills that go beyond the basic levels of comprehension is also very important to them; to process text at deep levels, make judgments, and detect shades of meaning. Sixteen –level seven, Saudi English language prospective teachers at Imam Mohammed Ibn Saud University, in Riyadh, in Kingdom of Saudi Arabia attended a training program based on the successful intelligence theory, for six weeks to develop their successful intelligence and higher order thinking reading skills. A higher order thinking reading skills test and a successful intelligence assessment scale were applied to the study participants before and after the treatment. All the hypotheses of the study were supported. Prospective teachers achieved great progress in their successful intelligence and higher order thinking reading skills after the implementation of the training program as compared to their performance before the training program. Hence, the positive findings of the study assured the great effect of the training program that was based on the successful intelligence theory on developing Saudi English prospective teachers' successful intelligence and higher order thinking reading skills.

Keywords: successful intelligence; higher order thinking reading skills.

Introduction

Intelligence is well known and is commonly thought of as “mental capacity.” However, intelligence is a difficult concept. Most psychologists now agree that intelligence is a highly complex mixture of a wide range of different sets of knowledge, skills, and abilities which are at best extremely hard to measure and define. Though IQ tests are designed to measure reasoning power, they are not totally indicative of true intelligence. Many feel that IQ tests measure how well someone can adapt to the form of assessment and that is in itself indicative of true intelligence. Since a high IQ does not always correlate with success in life, it does not seem appropriate that all of the measures to enter any field

requiring advanced degrees need to be IQ based. Nor does it seem appropriate that most of our teaching methods favor those that can remember and pass a multiple-choice test over those that are good at the tasks required by a given profession. Academicians need to be more concerned with successful intelligence than traditional IQ for even the most respected of IQ test “fail to do justice to their creators’ conceptions of the nature of intelligence (Sternberg, 1985 p. 336).”

In Sternberg’s book (1996) *Successful Intelligence: How Practical and Creative Intelligence Determine Success in Life*, he discards the importance of traditional IQ and replaces it with successful intelligence which, he says, is the kind of intelligence that matters in reaching life’s important goals. He assures the fact that what really matters most in the world is not inert intelligence but successful intelligence: that balanced combination of analytical, creative, and practical thinking skills. Inert intelligence means what you show when you take an IQ. The intelligence measured is inert – it does not lead to goal directed movement or action. As a result, people's most impressive accomplishments may well be their test scores, or their grades in school.

Some of the definitions of successful intelligence include :1) The capacity to learn from experience and adapt to your environment; 2) metacognition—that is understanding and control of your own thinking processes; 3) knowing when to use abilities; 4) beyond adaptation including an understanding of when to get out versus adapt; 5) beyond following trends to setting trends. But Sternberg (1996) simply says: “Successfully intelligent people buy low and sell high. They defy the crowd and, eventually, come to lead it (p. 189).” “Thus, the true measure of your intelligence is not in a test score; it is in your willingness to develop your own talents (p. 150).” The ongoing crusade of any teaching professional should be to improve the life and success of their students; if that is not the case, they should get out of teaching now.

Successful intelligence, Sternberg (1996) maintains, differs from IQ (which involves academic achievement) or emotional intelligence (which involves the sort of thinking most relevant to personal relationships). It requires ability with three kinds of thinking: creative, practical, and analytical. People who possess successful intelligence are “smart at

achieving; they know how to make the most of what they do well and how to find ways to work around their limitations. Motivated, controlled, persevering, and independent, these are the people who know how to get ahead. And most heartening of all, Sternberg reveals successful intelligence is measurable and can be developed. People have enormous capacity to develop and manifest successful intelligence; how strange that so often we do not let them (p. 45). . . . By thinking to learn, they learn to think (p.151). However, Sternberg simply said that our measuring methods and especially our teaching methods are simply wrong headed. Sternberg states that one thing only should be taught which is thinking regardless of the course title. Whether it is in, leadership, strategy, innovation or management, it should be only thinking! never remembering. He emphasizes the point that in teaching you simply must not feel the need to explain every single point. Yes, “leave em hanging if you want em to learn p.220”.

Hansen (2003) assures that successful intelligence is not an accident; it can be nurtured and developed in our schools by providing students, even at a very early age, with curricula that will challenge their creative and practical intelligence, not only their analytical skills. It is of vital importance that successful intelligence should be taught, because it is the kind of intelligence that will be the most valuable and rewarding in the real world after school—both in our work and in our personal lives. In order to understand what do Sternberg (1996) and Hansen (2003) written, Sternberg's successful intelligence will be displayed.

Sternberg’s Intelligence Theory

Sternberg theorizes that the three keys to successful intelligence are analytical, creative, and practical intelligences. Each exemplifies different strengths that are helpful in both a learning environment and a career. All three are necessary for a balanced successful intelligence, which is, in itself, a type of intelligence. Sternberg’s intelligence theory helps to explain the different aspects of the human mind and how it reasons in unique ways.

The first aspect of Sternberg’s theory (1996) is analytical intelligence. Analytical intelligence is required to “solve problems and to judge the

quality of ideas” (127). It emphasizes memorization and the ability to answer according to a teacher’s expectations. It is the ability to define the problem, formulate problem solving strategies, allocate appropriate resources to solve the problem, monitor problem solving strategies and evaluate solutions. This intelligence is strongly enforced in education as most testing requires analytical ability as opposed to creative or practical abilities. Grades from school and standardized tests, such as the SOL, SAT, or ACT, measure only analytical intelligence. Many students, however, may not have strong analytical intelligence.

Those who are stronger in creative and practical intelligences often do not receive credit or praise because they do not test as well. Their grades do not effectively reflect their intelligence; students have different strengths and weaknesses. While analytical intelligence is very useful in the school setting, it does not play such an important role in the business setting (130). After students complete their education, job markets are looking for creative thinkers that can execute a task successfully. If a person’s only strength is his\ her analytical intelligence, he\she most likely would not be able to perform as well as those with strong creative and practical intelligence. However, analytical intelligence is vital to pinpointing a problem’s source, a skill any job requires.

Creative intelligence is necessary to “generate novel ideas, redefine problems and sell ideas” (p.127). Those with strong creative intelligence are able to conceive original ideas easily. As previously stated, this intelligence is very helpful in the business setting when new plans need to be formed or innovative changes need to happen. Unfortunately, report cards do not rate creativity, only analytical intelligence (p.139). As a whole, education does not aid in the development of creative intelligence. Very rarely it is seen a classroom of college students creating pictures from torn paper. This could have been an exercise for elementary students, but generally people would consider this activity immature for college level education. However, as students grow in age, creativity does not stop aiding the learning process. While art classes are offered as creative outlets, other classes could also incorporate creativity, but normally rely on analytical intelligence.

Practical intelligence is needed to "find the best fit between yourself and the demands of your environment, use acquired knowledge and put problems in real – world context" (p.127). What analytical intelligence is able to retrieve from memory, practical intelligence actually applies to a current situation. Those with strong practical intelligence are able to enter a new environment, figure out what is necessary to thrive in that environment, and execute what they have deduced is necessary. This is perhaps one of the most valuable intelligences, because without it, all education would be purposeless. If people were unable to apply their knowledge, progress could not be made. One example of this is described by Sternberg with his narrative of the two boys in the woods. When a grizzly bear starts running toward them, one boy is able to calculate when the bear will overtake them and deduces that they would not be able to outrun a bear. However, the second boy is able to practically apply common sense. In the time the first boy analyzed the situation's hopelessness, the second boy had concluded that he only needs to outrun his peer, not the bear, to survive (p.127). As this story illustrates, it is more important to put information learned into practice, then to merely know it. Our ultimate goal in understanding and increasing our intelligence should be the full realization in our lives of the intellectual potential we all have (p. 269). . . . Those who can recall facts, who may even be able to reason with those facts, don't necessarily know how to use them to make a difference, either to themselves or to anyone else (p.11)

Based on what Hansen mentioned above, if analytical, creative and practical intelligences are important and essential for anyone, they are extremely important and essential for EFL prospective teachers academically and professionally. Academically, mastering these intelligences helps them to "analyze, understand and prepare to respond to everyday problems, decisions and conflicts"(Elis & Clabby, 1988, p. 53). Professionally, EFL prospective teachers will eventually teach the way they were taught. Therefore, it is important early in their careers or directly before them to be introduced to a wide array of intelligences. The role of teacher education then, becomes one of developing intelligences related to success in life. The aim then is transferring these intelligences into classroom practices (Lim, 2006).

Higher order thinking reading skills

Readers who engage in higher-order thinking go beyond the basic levels of comprehension. They can analyze, synthesize, evaluate, and interpret the text they are reading at complex levels. They can process text at deep levels, make judgments, and detect shades of meaning. They can make critical interpretations and demonstrate high levels of insight and sophistication in their thinking. They are able to make inferences, draw relevant and insightful conclusions, use their knowledge in new situations, and relate their thinking to other situations and to their own background knowledge. These readers as students will indeed be prepared to function as outstanding workers and contributors in a fast-paced workplace where the emphasis is on using information rather than just knowing facts. These higher order thinking reading skills are also essential for the EFL prospective teachers both academically and professionally to be improved by turn to their students in the future. The present study will be confined to the following higher order thinking reading skills as they are compatible with the mentioned above successful intelligence theory (analytical- practical and creative skills):

1. Analytical skills:

- Identify the parts/ units /characteristics of.....
- Define the data given and the objectives of....
- Find both ... the similarities and differences betweenand....
- Compare and contrast.....
- Provide logical arguments to support the following statement.
- Provide more than one view about the following...
- Based on this/these ...what do you conclude?
- What does...mean? What do we mean by...?

2. Practical skills:

- What would be your answer if you were in the position of...?
- What have you learned about...?
- Apply what you have learned in new situations.
- Put into practice what you have learned about.

3. Creative skills:

- If you do....then what will happen?

- Compose another conclusion of the story
- Create the relation between....and ...
- Distinguish possible relationships among the incidents (data).
- Identifying the writer's conclusions.
- Predict what will happen if.....

Context of the problem

Due to the researcher's experience in teaching the prospective teachers of English language, she felt that there was a problem in the Saudi English prospective teachers' successful intelligence and higher order thinking reading skills as they had shortage in these skills. To be sure of the real existence of this problem, she reviewed their reading exam papers and found that their marks were very low in questions that measured high order thinking reading skills. She attended several times in the reading lessons. Unstructurally, interviewed some of teachers teaching reading and they complained of prospective teachers' weakness in higher order thinking reading skills.

Statement of the problem

From what has been mentioned above successful intelligence and higher order thinking reading skills are essential for prospective teachers. In spite of this Saudi English prospective teachers suffered from shortage in these very important skills. So, the researcher suggested a training program for those prospective teachers to develop these skills in a trial of solving this problem in the light of the successful intelligence theory displayed above.

The present study attempts to address the following question:
What is the effect of using a training program in the light of the successful intelligence theory on developing Saudi English language Prospective Teachers' successful intelligence and higher order thinking reading skills?

From this main question, the following sub- questions emerge:

1. What are the theoretical bases for using the successful intelligence theory in developing Saudi English language Prospective Teachers' higher order thinking reading skills?
2. What are the features of the suggested training program?
3. How far will training prospective teachers help fostering their successful intelligence and higher order thinking reading skills?

4. Would the effect of the training program vary from one sub - skill to another (creative -analytical- and practical skills)?

Hypotheses of the study

1. There is statistically significant difference between the mean scores of the EFL prospective teachers on the pre-application and post application of the successful intelligence assessment scale (as a whole) in favor of the post application of the assessment.
2. There are statistically significant differences between the mean scores of the EFL prospective teachers on the pre-application and post application of the successful intelligence assessment scale in each sub- skill (creative- analytical- practical skills) in favor of the post application of the assessment scale.
3. There is statistically significant difference between the mean scores of the EFL prospective teachers on the pre-application and post application of the higher order thinking reading skills test (as a whole) in favor of the post application.
4. There are statistically significant differences between the mean scores of the EFL prospective teachers on the pre-application and post application of the higher order thinking reading skills test in each sub- skill (creative- analytical- and practical skills) in favor of the post application.

Aim of the study

This study aims at:

1. Designing a training program in the light of the successful intelligence theory for developing Saudi English language prospective teachers ' successful intelligence and the higher order thinking reading skills.
2. Measuring the effect of this program on developing Saudi English language prospective teachers ' successful intelligence and higher orderthinking reading skills.

Delimitations of the study

This study is delimited to:

1. Sixteen –level seven, Saudi English language prospective teachers, Imam Mohammed Ibn Saud University.

2. It was confined to the following higher order thinking reading skills as they are compatible with the successful intelligence theory (analytical- practical and creative skills):

1. Analytical skills:

- Identify the parts/ units /characteristics of.....
- Define the data given and the objectives of....
- Find both the similarities and differences betweenand....
- Compare and contrast.....
- Provide logical arguments to support the following statement.
- Provide more than one view about the following...
- Based on this/these ...what do you conclude?
- What ...does it mean? What do we mean by...?

2. Practical skills:

- What would be your answer if you were in the position of...?
- What have you learned about...?
- Apply what you have learned in new situations.
- Put into practice what you have learned about.

3. Creative skills:

- If you do....then what will happen?
- Compose another conclusion of the story
- Create the relation between....and ...
- Distinguish possible relationships among the incidents (data).
- Identifying the writer's conclusions.
- Predict what will happen if.....

3. Experimenting the training program in the second semester of the academic year 2014-2015, 120 minutes, once a week for eight weeks.

Significance of the study

It is hoped that the present study would:

1. Help develop prospective teachers' higher order thinking reading skills.

2. Emphasize the importance of teaching successful intelligence skills because it is the kind of intelligence that will be the most valuable and rewarding in the real world after school—both in our work and in our personal lives
3. Present to EFL prospective teachers a training program based on the successful intelligence theory for teaching the higher order thinking reading skills, and indicate how to implement it.
4. Be a springboard to a number of studies for using the successful intelligence theory in teaching different language skills.

Variables of the study

- **Independent variable:** refers to the training program in the light of the successful intelligence theory used in the present study.
- **Dependent variables:** refer to the prospective teachers' performance on the successful intelligent assessment scale and on the higher order thinking reading test.

Definition of terms

- **Successful intelligence**

Sternberg (1996) theorizes that the three keys to successful intelligence are analytical, creative, and practical intelligences. Each exemplifies different strengths that are helpful in both a learning environment and a career. All three are necessary for a balanced successful intelligence, which is, in itself, a type of intelligence.

The first aspect of successful intelligence is analytical intelligence. Analytical intelligence is required to “solve problems and to judge the quality of ideas” (p.127).

Creative intelligence is necessary to “formulate good problems and ideas in the first place” (p.127).

Practical intelligence is needed to “use the ideas and their analysis in an effective way in one’s everyday life” (p.127). This is perhaps one of the most valuable intelligences, because without it all education would be

purposeless. If people were unable to apply their knowledge, progress could not be made.

Successful intelligence in the present study is defined as a culmination of the three following intelligences: analytical, creative, and practical. It is most effective when it balances all three of its analytical, creative, and practical aspects. To be successfully intelligent is to be able to absorb information, apply it, and also use it toward original ideas. Successfully intelligence makes people flexible in adapting to the roles they need to fulfill.

Higher order thinking reading skills

It should be mentioned here that the present study was concerned with the following skills as they are compatible with successful intelligence theory's analytical- practical and creative skills (as previously mentioned in p. 5).

Theoretical background

Reviewing the literature and related studies of the present study is divided into two main sections:

- I. Successful intelligence theory and classroom application.
- II. Higher order thinking reading skills.

I. Successful intelligence theory and classroom application

Since a high IQ does not always correlate with success in life, it does not seem appropriate that all of the measures to enter any field requiring advanced degrees need to be IQ based. Nor does it seem appropriate that most of our teaching methods favor those that can remember and pass a multiple-choice test over those that are good at the tasks required by a given profession. Academicians need to be more concerned with successful intelligence than traditional IQ for even the most respected of IQ test “fail to do justice to their creators’ conceptions of the nature of intelligence (Sternberg, 2009 p. 336).”He then discusses how measures were developed and what they really mean. Sternberg then discards the importance of traditional IQ and replaces it with successful intelligence which he says is the kind of intelligence that matters in reaching life’s important goals.

Sternberg (1996) emphasizes the fact that what really matters most in the world is not inert intelligence but successful intelligence: that balanced combination of analytical, creative, and practical thinking skills. Successful intelligence is not an accident; it can be nurtured and developed in our schools by providing students, even at a very early age, with curricula that will challenge their creative and practical intelligence, not only their analytical skills. He assures that successful intelligence should be taught, because it is the kind of intelligence that will be the most valuable and rewarding in the real world after school—both in work and in personal lives. Sternberg argues that the best predictors of success in the real world are creative and practical intelligence.

Creative intelligence is necessary to “formulate good problems and ideas in the first place” (p.127). Practical intelligence is needed to “use the ideas and their analysis in an effective way in one’s everyday life” (p.127).

Many students could learn more effectively than they do now if they were taught in a way that better matched their patterns of abilities. Teaching for successful intelligence provides a way to create such a match. It involves helping all students capitalize on their strengths and compensate for or correct their weaknesses. It does so by teaching in a way that balances learning for memory, analytical, creative, and practical thinking.

According to the theory of successful intelligence, successful intelligence is the use of an integrated set of abilities needed to attain success in life; however an individual defines it, within his or her socio cultural context. Thus, there is no one definition of intelligence. People are successfully intelligent by virtue of recognizing their strengths and making the most of them at the same time they recognize their weaknesses and find ways to correct or compensate for them. Both are important. On one hand, students need to learn to correct aspects of their performance in which they are underperforming. On the other hand, they have to recognize that they probably will never be superb at all kinds of performance. It helps to find ways around weaknesses, such as seeking help from others and giving it in return. In other words, people find their own unique path to being intelligent.

Successfully intelligent people adapt to, shape, and select environments. In adaptation, they change themselves to fit the environment. For example, a teacher may adapt to the expectations of her principal by teaching in a way she believes the principal will endorse. In shaping, people change the environment to fit them. The teacher may try to persuade the principal to support a new way of teaching different from what the principal has been accustomed to in the past. And in selection, they find a new environment. For example, the teacher may decide to seek a placement in another school if she is unable to convince the principal that her way of teaching is valid and will result in benefits for the students. They accomplish these ends by finding a balance in their use of analytical, creative, and practical abilities (Sternberg & Kaufman, 2009).

This detailed information about successful intelligence contains within it several implications for teaching.

Classroom Applications

Teaching for successful intelligence attempts to help teachers reach a larger cross-section of students than more conventional teaching methods that emphasize memory and analytical instruction. In teaching for successful intelligence, a teacher follows a number of fundamental ideas. There is no one right way of teaching and learning. Moreover, there is no one right way of assessing students' achievement. Teaching and assessment should balance use of analytical, creative, and practical thinking. Fundamentally, teachers need to help students capitalize on individual patterns of strengths and, at the same time, help them correct or compensate for weaknesses. Students, like teachers, need to develop flexibility, giving students multiple and diverse options in assessment. Because students have different life goals, student success needs to be defined in terms that are meaningful to them as well as to the institution. Students are more likely to see meaning if teachers provide numerous examples of concepts that cover a wide range of applications, grade student work in a way that preserves the integrity of the course as well as the integrity of the students' varied life goals.

Teachers should be encouraged to teach and assess achievement in ways that enable students to analyze, create with, and apply their knowledge. When students think to learn, they also learn to think. And there is an added benefit: students who are taught analytically, creatively, and practically perform better on assessments, apparently without regard to the form the assessments take. That is, they outperform students instructed in conventional ways, even if the assessments are for straight factual memory (Sternberg, Torff, & Grigorenko, 1998a, 1998b). Moreover, Sternberg and Davidson,(2009) research shows what, exactly, are the techniques used to teach analytically, creatively, and practically and that these techniques succeed, regardless of subject-matter area.

Teaching analytically

Teaching analytically means encouraging students to (a) analyze, (b) critique, (c) judge, (d) compare and contrast, (e) evaluate, and (f) assess. When teachers refer to teaching for "critical thinking," they typically mean teaching for analytical thinking. How does such teaching translate into instructional and assessment activities? Consider various examples across the school curriculum:

- (a) Analyze the development of the character of Heathcliff in *Wuthering Heights*. (Literature)
- (b) Critique the design of the experiment (just gone over in class or in a reading) showing that certain plants grew better in dim light than in bright sunlight. (Biology)
- (c) Judge the artistic merits of Roy Lichtenstein's comic-book art, discussing its strengths as well as its weaknesses as fine art. (Art)
- (d) Compare and contrast the respective natures of the American Revolution and the French Revolution, pointing out ways they were similar and ways they were different. (History)
- (e) Evaluate the validity of the following solution to a mathematical problem, and discuss weaknesses in the solution, if there are any. (Mathematics)
- (f) Assess the strategy used by the winning player in the tennis match you just observed, stating what techniques she used in order to defeat her opponent. (Physical Education)

Teaching creatively

Teaching creatively means encouraging students to (a) create, (b) invent, (c) discover, (d) imagine if ..., (e) suppose that ..., and (f) predict. Teaching for creativity requires teachers not only to support and encourage creativity, but also to role-model it and reward it when it is displayed (Sternberg & Davidson, 2009). In other words, teachers need not only to talk the talk, but also walk the walk. The following examples of instructional or assessment activities encourage students to think creatively:

(a) Create an alternative ending to the short story you just read that represents a different way things might have gone for the main characters in the story. (Literature)

(b) Invent a dialogue between an American tourist in Paris and a French man he encounters on the street from whom he is asking directions on how to get to the Rue Pigalle. (French)

(c) Discover the fundamental physical principle that underlies all of the following problems, each of which differs from the others in the "surface structure" of the problem but not in its "deep structure." (Physics)

(d) Imagine if the government of China keeps evolving over the course of the next 20 years in much the same way it has been evolving. What do you believe the government of China will be like in 20 years? (Government/Political Science)

(e) Suppose that you were to design one additional instrument to be played in a symphony orchestra for future compositions. What might that instrument be like, and why? (Music)

(f) Predict changes that are likely to occur in the vocabulary or grammar of spoken Spanish in the border areas of the Rio Grande over the next 100 years as a result of continuous interactions between Spanish and English speakers. (Linguistics)

Teaching practically

Teaching practically means encouraging students to (a) apply, (b) use, (c) put into practice, (d) implement, (e) employ, and (f) render practical what

they know. Such teaching must relate to the real practical needs of the students, not just to what would be practical for other individuals (Sternberg & Kaufman, 2012). Consider some examples:

- (a) Apply the formula for computing compound interest to a problem people are likely to face when planning for retirement. (Economics, Math)
- (b) Use your knowledge of German to greet a new acquaintance in Berlin. (German)
- (c) Put into practice what you have learned from teamwork in football to make a classroom team project succeed. (Athletics)
- (d) Implement a business plan you have written in a simulated business environment. (Business)
- (e) Employ the formula for distance, rate, and time to compute a distance. (Math)
- (f) Render practical a proposed design for a new building that will not work in the aesthetic context of the surrounding buildings, all of which are at least 100 years old. (Architecture)

It might seem as though teaching for successful intelligence would require much more classroom time per topic than would teaching in more conventional ways. This is not the case, however. The idea is not to teach each topic three times in three ways. Rather, it is to alternate teaching styles so that some of the time one teaches in a way more geared toward analytical thinking, other times in a way more geared to creative thinking, and still other times in a way more geared to practical thinking. The total time spent in teaching given material is the same as in any other way of teaching the material.

Because teaching for successful intelligence reaches more students' patterns of abilities, the students are more likely to be intrinsically motivated to succeed in their work. Some teachers may be reluctant to do this kind of balanced teaching, because they see their own strengths as being primarily in one of the ways of thinking, such as analytical. But teaching only to one's own strengths deprives students with different patterns of abilities valuable opportunities to learn. Clearly, it is possible to implement teaching for successful intelligence in a wide variety of

academic contexts. But there are potential problems with any new methodology. How do these methods work in practice?

Supporting Research

Researchers have sought to test the theory of successful intelligence in the classroom. Their studies extend down to grade 4. In a first set of studies, they explored the question of whether conventional education in school systematically discriminates against children with creative and practical strengths (Sternberg, Ferrari, Clinkenbeard, & Grigorenko, 1996; Sternberg, Grigorenko, Ferrari, & Clinkenbeard, 2005; Sternberg, & Kaufman 2009; Sternberg & Kaufman 2012). Motivating this work was the belief that the systems in most schools strongly tend to favor children with strengths in memory and analytical abilities. However, schools can be unbalanced in other areas as well. One school they visited in Russia in 2000 placed a heavy emphasis on the development of creative abilities--much more so than on the development of analytical and practical abilities. Another school--catering to the children of Russian businessman--that strongly emphasized practical abilities was one of the schools they visited. The children who were not practically oriented were told that, eventually, they would be working for their classmates who were.

The Sternberg Triarchic Abilities Test, measuring analytical, creative, and practical abilities, in some of the instructional work was used. The test was administered to 326 children around the United States and in other countries who were identified by their schools as gifted by any standard whatsoever. Children were selected for a summer program in college-level psychology if they fell into one of five ability groupings: high analytical, high creative, high practical, high balanced (high in all three abilities), or low balanced (low in all three abilities). The students were gifted, but in a broader sense than the term is traditionally used. They were not necessarily in the top few percent, and their gifts were not necessarily analytical in nature. Students who came to Yale were divided into four instructional groups. All four instructional groups used the same introductory psychology textbook and listened to the same psychology lectures. What differed was the type of afternoon discussion section to which they were assigned. They were randomly assigned to an

instructional condition that emphasized either memory, analytical, creative, or practical instruction. For example: In the memory condition, they might be asked to describe the main tenets of a major theory of depression. In the analytical condition, they might be asked to compare and contrast two theories of depression. In the creative condition, they might be asked to formulate their own theory of depression. In the practical condition, they might be asked how they could use what they had learned about depression to help a friend who was depressed.

Students in all four instructional conditions were evaluated in terms of their performance on homework, a midterm exam, a final exam, and an independent project. Each type of work was evaluated for memory, analytical, creative, and practical quality. Thus, all students were evaluated in exactly the same way.

The results suggested the utility of the theory of successful intelligence. This utility showed itself in several ways:

First, it was observed that the students in the high creative and high practical groups were much more diverse in terms of racial, ethnic, socioeconomic, and educational backgrounds than were the students in the high analytical group. This suggests that correlations of measured intelligence with status variables such as these may be reduced by using a broader conception of intelligence. Thus, the kinds of students identified as strong differed in terms of populations from which they were drawn in comparison with students identified as strong solely by analytical measures. More importantly, just by expanding the range of abilities measured, it was discovered intellectual strengths that might not have been apparent through a conventional test.

Second, it was found that all three ability tests--analytical, creative, and practical--significantly predicted course performance. When multiple-regression analysis was used, at least two of these ability measures contributed significantly to the prediction of each of the measures of achievement. Perhaps as a reflection of the difficulty of de-emphasizing the analytical way of teaching, one of the significant predictors was always the analytical score. However, in a replication of the study with

low-income African-American students from New York, Deborah Coates of the City University of New York found a different pattern of results. Her data indicated that the practical tests were better predictors of course performance than were the analytical measures, suggesting that what ability test predicts what criterion depends on population as well as mode of teaching.

Third, and most importantly, there was an aptitude-treatment interaction where students placed in instructional conditions that better matched their pattern of abilities outperformed students who were mismatched. In other words, when students are taught in a way that fits how they think, they do better in school. Children with creative and practical abilities, who are almost never taught or assessed in a way that matches their pattern of abilities, may be at a disadvantage in course after course, year after year.

Sternberg, Torff, & Grigorenko (1998a, 1998b) examined learning of social studies and science by third graders and eighth graders. The 225 third graders were students in a low-income neighborhood in Raleigh, North Carolina. The 142 eighth graders were students who were largely middle- to upper middle-class in Baltimore, Maryland, and Fresno, California. In this study, students were assigned to one of three instructional conditions. In the first condition, they were taught the course that basically they would have learned had there been no intervention. The emphasis in the course was on memory. In a second condition, students were taught in a way that emphasized critical (analytical) thinking. In the third condition, they were taught in a way that emphasized analytical, creative, and practical thinking. All students' performance was assessed for memory learning (through multiple-choice assessments) as well as for analytical, creative, and practical learning (through performance assessments). As expected, students in the successful-intelligence (analytical, creative, practical) condition outperformed the other students in terms of the performance assessments. One could argue that this result merely reflected the way they were taught. Nevertheless, the result suggested that teaching for these kinds of thinking succeeded. More important, however, was the result that children in the successful-intelligence condition outperformed the other

children even on the multiple-choice memory tests. In other words, if the goal is just to maximize children's memory for information, teaching for successful intelligence is still superior. It enables children to capitalize on their strengths and to correct or to compensate for their weaknesses, and it allows children to encode material in a variety of interesting ways.

These results have extended to reading curricula at the middle school and the high school level. In a study of 871 middle school students and 432 high school students, reading was taught either triarchically (analytically, creatively, practically) or through the regular curriculum. At the middle school level, reading was taught explicitly. At the high school level, reading was infused into instruction in mathematics, physical sciences, social sciences, English, history, foreign languages, and the arts. In all settings, students who were taught triarchically substantially outperformed students who were taught in standard ways (Sternberg& Davidson2009; Sternberg& Kaufman, 2012).

Thus, the results of three sets of studies suggest that the theory of successful intelligence is valid as a whole. Further, the results suggest that the theory can make a difference not only in laboratory tests, but in school classrooms and even in the everyday life of adults as well.

The present study tries to practice teaching for successful intelligence through higher order thinking skills in reading texts.

Higher-Order Thinking skills

The ultimate goal of literacy instruction is for students to be able to process text at the level of evaluation, synthesis, analysis, and interpretation. This level is the final thread in the reading tapestry. Once students have learned to read, we spend most of our time on trying to help them develop their thinking skills and use them as tools to process their thoughts. As Anderson & Krathwohl (2011) tell us, “The curriculum must expand to include information and activities that explicitly support students in learning to think well. The emphasis is less on the mastery of information measured by a recall-based assessment and more on learning how to use one's mind well, to synthesize and analyze skillfully” (p.

69).Students will need these higher-order skills to succeed in their lives and careers.

Readers who engage in higher-order thinking go beyond the basic levels of comprehension. They can analyze, synthesize, evaluate, and interpret the text they are reading at complex levels. They can process text at deep levels, make judgments, and detect shades of meaning. They can make critical interpretations and demonstrate high levels of insight and sophistication in their thinking. They are able to make inferences, draw relevant and insightful conclusions, use their knowledge in new situations, and relate their thinking to other situations and to their own background knowledge. These students will indeed be prepared to function as outstanding workers and contributors in a fast-paced workplace where the emphasis is on using information rather than just knowing facts.

Bloom's Taxonomy and Beyond

Although most teachers learned about Bloom's Taxonomy (Bloom, 1956) during their preparation courses, many seldom challenge students beyond the first two levels of cognition: knowledge and comprehension. Because most jobs in the 21st century will require employees to use the four highest levels of thinking—application, analysis, synthesis, and evaluation—this is unacceptable in today's instructional programs. We must expect students to operate routinely at the higher levels of thinking. Bloom's original taxonomy has certainly withstood the test of time, but a newer version has been introduced to reflect more contemporary thinking. Recently a former student of Bloom, Lorin Anderson, and a group of cognitive psychologists published a revised version of Bloom's taxonomy (Anderson & Krathwohl, 2011). Bloom's original six categories were nouns: knowledge, comprehension, application, analysis, synthesis, and evaluation. In the new version, Anderson and colleagues changed the nouns to verbs to reflect thinking as an active process.

(a) Revised Category #1: Knowledge → Remember

In the revised taxonomy, the original “Knowledge” category was changed to “Remember.” This category refers to shallow processing: the drawing out of factual answers, recall, and recognition. In reading, this is

simply recalling the facts in a text or recalling the sequence of a story. Some verbs that teachers use to demonstrate student knowledge of material include the following: choose, describe, define, identify, label, list, locate, match, memorize, name, omit, recite, recognize, select, and state.

(b) Revised Category #2: Comprehension → Understand

The second category of Bloom's original taxonomy was "Comprehension." In the revised model, it is renamed "Understand." This category reflects the acts of translating, interpreting, and extrapolating. Examples in reading include summarizing text and identifying in-text relationships. Some verbs that teachers use to ask students to demonstrate understanding include the following: classify, defend, demonstrate, distinguish, explain, express, extend, give an example, illustrate, indicate, match, paraphrase, represent, restate, rewrite, select, show, summarize, and translate.

(c) Revised Category #3: Application → Apply

The third category, "Application," was changed to "Apply" in the revised taxonomy and is defined as knowing when or why to apply certain skills automatically, as well as having the ability to recognize patterns that can transfer to new or unfamiliar situations. Teachers prompt students to think at the "Apply" level by using the following constructions: "Predict what would happen if . . .," "Judge the effects of . . .," and "What would happen if . . .?" Verbs that teachers might use to determine whether students are working at this level include the following: apply, choose, dramatize, generalize, organize, paint, prepare, produce, select, show, and use. When students have not processed information at the application level, they cannot take information learned in one context and translate it to another.

(d) Revised Category #4: Analysis → Analyzing

The "Analysis" category in Bloom's taxonomy was renamed "Analyzing" in the revised version. This level involves breaking information down into parts and different forms, and drawing comparisons between a text and background knowledge data. Classroom questions that address this category include the following: "What is the

function of . . .?” “What conclusions can we draw from . . .?” and “What inference can you make about . . .?” The following verbs apply to analyzing activities: analyze, categorize, classify, differentiate, distinguish, identify, infer, point out, select, subdivide, and survey. To use the thinking process of analyzing, students must be able to see connections and draw conclusions.

(e) Revised Category #5: Evaluation → Design

Though Bloom placed “Evaluation” at the highest level of his taxonomy, Anderson and colleagues rank it fifth to reflect their idea that creative thinking (design) is more complex than critical thinking (evaluation). For the Anderson theorists, critical thinking is necessary for the creative process to occur, because it involves accepting or rejecting ideas—a precursor to creating a new design (Anderson & Krathwohl, 2011). For this reason, evaluation precedes creation in the revised model. To evaluate information, students need to be able to distinguish essential data from information that is simply interesting. They must be able to identify core themes, form and support opinions, and identify inconsistencies, bias, or lack of coherence or accuracy in a text. They must also be able to use background information, prior knowledge, and other textual sources to assess the validity of the text. For example, when reading a novel, students with strong evaluation skills might compare the works of two authors and offer evidence to support opinions on the author's writing style. Constructions that address the evaluation level include the following: “Do you agree with . . .?” “What is your opinion of . . .?” “How would you prove . . .?” “How would you rate . . .?” and “How would you prioritize . . .?” The following verbs apply to evaluation activities: appraise, assess, check, compare, conclude, criticize, critique, defend, justify, and support.

(f) Revised Category #6: Synthesis → Create

The fifth level of the original Bloom's Taxonomy was called “Synthesis.” In Anderson's revised version, this level is renamed “Create” and is upgraded to level six. Synthesizing text involves linking new information with prior knowledge or with multiple texts to develop a new idea, establish a new way of thinking, or create a new product of some type. Anderson sees the act of “creating” as combining elements into a

pattern that had not existed before. Some constructions that assess the process of analysis or creating include the following: “Develop a new way to . . .,” “Suggest another way to . . .,” “How might you adapt . . .?” and “Can you predict the outcome if . . .?” The following verbs signal the “Create” level of thinking: choose, combine, compose, construct, create, design, develop, formulate, hypothesize, invent, make, make up, originate, organize, plan, produce, and role play. To succeed at this level, students must be able to synthesize their thinking and make predictions based on knowledge.

Based on the above, the present study will be confined to the following higher thinking reading skills as they are compatible with successful intelligence theory (analytical- practical and creative skills):

- Revised Category #3: Application → Apply
- **Revised Category #4: Analysis → Analyzing**
- **Revised Category #5: Evaluation → Design**
- **Revised Category #6: Synthesis → Create**

It should be mentioned here that the present study will be concerned with the following higher order thinking reading skills as they are compatible with successful intelligence theory (analytical- practical and creative skills) as mentioned before in page 5.

Focusing Attention on the Higher Levels of Reading

When readers interpret text, they are providing their own ideas about what the content means by applying background knowledge to analyze and synthesize the information. Good readers must interpret both the literal and the implied meaning behind an author's words. The less background knowledge they have on a topic, the more they need to infer meaning by “reading between the lines” Thomas & Thorne (2011). Reading between lines must be taught to students in a deliberate and direct fashion. For this part, Moore (2003) stated that content instruction should strive for depth rather than breadth. To process what they read with insight and a critical eye, students must be able to consider the text as a whole and understand what the author is trying to communicate. Students may demonstrate understanding by explaining the purpose or

viewpoint of a text, identifying the theme and critical elements, sharing their opinions on some aspect of the story, or analyzing the personal attributes of a character and interpreting his actions. Students must also be able to create and understand analogies, write about their thoughts and opinions, compare and contrast similar or dissimilar events, and use their creativity to extend and develop concepts. Higher-order thinking skills will allow them to analyze pros and cons and form well-reasoned opinions as adults.

Commentary

Teachers may wish to consider the option of teaching for successful intelligence. In doing so, they will improve their teaching, improve student learning, and most importantly, modify in a constructive way the entire teaching-learning process.

As Sternberg (2008) confirms data collected with thousands of students show that teaching for successful intelligence works for many students, in many subject-matter areas, at many grade levels. Of course, this form of teaching is not a panacea for the problems of schools, and it most likely will not work for everyone--whether student or teacher. But Sternberg (2005) stated that "in our research we have found that the majority of students and teachers benefit from the methods of teaching for successful intelligence".

Teaching for successful intelligence obviously relates to other kinds of teaching that emphasize thinking. One example is Bloom's taxonomy, which specifies a set of skills that are arrayed from those at the lowest level of cognition to the highest level of cognition. Although most teachers learned about Bloom's Taxonomy (Bloom, 1956) during their preparation courses, many seldom challenge students beyond the first two levels of cognition: knowledge and comprehension. Because most jobs in the 21st century will require employees to use the four highest levels of thinking—application, analysis, synthesis, and evaluation—this is unacceptable in today's instructional programs. Students should be expected to operate routinely at the higher levels of thinking. Bloom's original taxonomy has certainly withstood the test of time, but a newer

version has been introduced to reflect more contemporary thinking. Recently a former student of Bloom, Lorin Anderson, and a group of cognitive psychologists published a revised version of Bloom's taxonomy (Anderson & Krathwohl, 2011). Bloom's original six categories were nouns: knowledge, comprehension, application, analysis, synthesis, and evaluation. In the new version, Anderson and Krathwohl changed the nouns to verbs to reflect thinking as an active process. So, the present study trained Saudi prospective English language teachers to develop the higher order thinking reading skills as the successful intelligence theory is wholly consistent with this notion. Anderson & Krathwohl, (2011) mention that learning to synthesize, evaluate, and process information in new ways is the key to preparing students for the world outside of school. We can no longer leave literacy development to language arts teachers. All teachers must learn to model their thinking processes and “make the invisible visible” to students. With the tightening of the higher-order thinking thread, the literacy weave will be complete.

Method and procedures

I. Design of the Study

The present study is a descriptive, analytical and quasi experimental study. It is partially analytical and partially experimental. It uses a pre-post higher order thinking reading skills test and a pre-post successful intelligence assessments scale; one group experimental design.

II. Participants of the Study

Participants of the study were sixteen Saudi English language prospective teachers, level seven, in AL-Imam University. Their age ranged from 20-21 years old.

III. Tools of the Study

The present study made use of the following tools:

1. A higher order thinking reading skills test;
2. A successful intelligence assessment scale.

1. The higher order thinking reading skills test

Aims of the test

A higher order reading thinking skills test was used as a pre-posttest. It was used as a pre- test to determine students' mastery of the higher

orderthinking reading skills before starting the experiment. Therefore, the progress of students' mastery level on the posttest could be attributed to the training program they have been exposed to. As for the posttest, it was used to investigate the effect of the training program on developing the students' mastery of the higher order reading thinking skills.

Description of the test

The test consisted of fifteen (15) questions (See appendix A). The test measured the following skills as they are compatible with the successful intelligence theory (analytical- practical and creative skills):

1. Analytical skills

- Identify the parts/ units /characteristics of.....
- Define the data given and the objectives of....
- Find both the similarities and differences betweenand....
- Compare and contrast.....
- Provide logical arguments to support the following statement.
- Provide more than one view about the following...
- Based on this/these ...what do you conclude?
- What does... mean? What do we mean by...?

2. Practical skills

- What would be your answer if you were in the position of...?
- What have you learned about...?
- Apply what you have learned in new situations.
- Put into practice what you have learned about.

3. Creative skills

- If you do....then what will happen?
- Compose another conclusion of the story
- Create the relation between....and ...
- Distinguish possible relationships among the incidents (data).
- Identifying the writer's conclusions.
- Predict what will happen if.....

Test validity

To measure the test content validity, the first version of the test was submitted to a panel of jury in the field of curriculum and instruction to evaluate the test in terms of content appropriateness and the skills measured. The jury suggested changing questions n. 4 and n.6 to measure what they intended to measure. After the modifications were

made, the test became mostly valid, as it would measure what it was intended to measure as stated by the jury (see appendix A for the final version of the test).

Test reliability

In order to establish the reliability of the test, it was administered to a randomly selected 16 Saudi English language prospective teachers; then, the test was administered once more after two weeks to the same 16 Saudi English language prospective teachers. Then, the Pearson Correlation Coefficient was calculated. The reliability coefficient was estimated using the following formula:

$$RAA = \frac{2R}{1+R}$$

Where:

RAA = reliability coefficient

R = correlation coefficient

The reliability coefficient was 0.88 which is relatively high. Therefore, the test could be considered a reliable tool for the purpose of the present study.

Test administration

It was administered three days before the experiment; and its post administration was also three days after the experiment.

Scoring the higher order thinking reading skills test

The ultimate aim of this research is to contribute to the development of Saudi English language prospective teachers' successful intelligence through all its three channels – analytical, creative, and practical. Hence the researcher developed an assessing rubric to focus on how to evaluate students' answers on the reading passages to ensure the development of their triarchic (analytical, creative and practical) thinking.

The researcher began by setting up prototypes for a good answer, a basic answer, and a deficient answer. She shared these categories with her students.

A good answer:

- Demonstrates the student's thorough understanding of the material
- Uses analytical thinking to make logical assumptions and draw conclusions, make inferences, and compare and contrast ideas.
- Connects new materials to personal experiences for practical applications of knowledge.

- Goes beyond the known.

A basic answer:

- Demonstrates an understanding of the basic material
- Demonstrates a firm understanding of the new material but has no links or weak links to previously acquired knowledge
- Shows a plausible grasp of the content and the details of the new material but does not show inferences
- Does not connect the new material to personal experiences
- Does not extend the material creatively

An insufficient answer:

- Demonstrates inadequate information
- Does not refer to relevant details
- Does not use practical applications
- Is not creative

A deficient answer:

- Demonstrates confusion and lack of understanding of the material
- Contains bits of unrelated information
- Does not isolate the main idea
- Does not analyze ideas

The researcher made use of the above mentioned answer guidelines to evaluate students' answers on the pre- posttest and on questions followed every reading passage.

2. A successful intelligence assessment scale

Aims of the Successful Intelligence Assessment scale

A successful intelligence assessment scale by Hansen (2007) was adopted in the present study to measure the degree of the Saudi English language prospective teachers' analytical, practical and creative thinking skills. This assessment scale was used before the experiment to identify students' mastery of the successful intelligence skills. Hence, the progress of the students' mastery level on the successful intelligence assessment could be attributed to the training program they were exposed to. After the experiment, it was used to investigate the effect of the training program on developing the students' mastery of the analytical, practical and creative thinking skills.

Description of the successful intelligence assessment scale

The successful intelligence scale consisted of fifteen statements; each one had five responses, from 1 (least like me) to 5 (most like me). The scale measured the analytical intelligence skills through questions 1, 2, 7, 8, 13; the practical intelligence skills through questions 5, 6, 11, 12, 15; and the creative intelligence skills through questions 3, 4, 9, 10, 14 (see appendix B).

Scoring the successful intelligence assessment scale

To get your analytical intelligence score, add responses to questions 1, 2, 7, 8, 13
20 + pts. – your analytical thinking skills are strong
13-19 pts. -- your analytical thinking skills are average
Under 13 pts.-- your analytical thinking skills are weak

To get your practical intelligence score, add responses to questions 5, 6, 11, 12, 15
20 + pts. – your practical thinking skills are strong
13-19 pts. -- your practical thinking skills are average
Under 13 pts.-- your practical thinking skills are weak

To get your creative intelligence score, add responses to questions 3, 4, 9, 10, 14
20 + pts. – your creative thinking skills are strong
13-19 pts. -- your creative thinking skills are average
Under 13 pts. -- your creative thinking skills are weak

The successful intelligence assessment scale application

It was administered three days before the experiment and three days after the experiment.

The Training Program

The following is a description of the steps the researcher went through to design the training program.

A. Assumptions of the Training Program in the light of the successful intelligence theory

This program was based on the following assumptions:

1. A high IQ does not always correlate with success in life, so, it does not seem appropriate that all of the measures to enter any field requiring advanced degrees need to be IQ based.. Nor does it seem appropriate that most of our teaching methods favor those that can

- remember and pass a multiple-choice test over those that are good at the tasks required by a given profession.
2. Though IQ tests are designed to measure reasoning power, they are not totally indicative of true intelligence.
 3. The importance of traditional IQ and replaces it with successful intelligence which he says is the kind of intelligence that matters in reaching life's important goals.
 4. What really matters most in the world is successful intelligence: that balanced combination of analytical, creative, and practical thinking skills. Successful intelligence is not an accident; it can be nurtured and developed in our schools by providing students, even at a very early age, with curricula that will challenge their creative and practical intelligence, not only their analytical skills.
 5. Successful intelligence should be taught, because it is the kind of intelligence that will be the most valuable and rewarding in the real world after school—both in work and in personal lives.
 6. The ultimate goal in understanding and increasing intelligence should be the full realization in our lives of the intellectual potential we all have.
 7. People who possess successful intelligence are “smart at achieving; they know how to make the most of what they do well and how to find ways to work around their limitations.
 8. Successful intelligence is measurable and can be developed.
 9. We should teach only one thing regardless of the course title, whether it is in leadership, strategy, innovation or management, that is thinking never teach just remembering.
 10. Many students could learn more effectively than they do now if they were taught in a way that better matched their patterns of abilities. Teaching for successful intelligence provides a way to create such a match. It involves helping all students capitalize on their strengths and compensate for or correct their weaknesses. It does so by teaching in a way that balances learning for memory, analytical, creative, and practical thinking.
 11. When students think to learn, they also learn to think. And there is an added benefit: students who are taught analytically, creatively, and practically perform better on assessments, apparently without regard

to the form the assessments take. That is, they outperform students instructed in conventional ways, even if the assessments are for straight factual memory.

12. The ultimate goal of literacy instruction is for students to be able to process text at the level of evaluation, synthesis, analysis, and interpretation. This level is the final thread in the reading tapestry. Once students have learned to read, we spend most of our time on trying to help them develop their thinking skills and use them as tools to process their thoughts.
13. The emphasis in the curriculum is less on the mastery of information measured by a recall-based assessment and more on learning how to use one's mind well, to synthesize and analyze skillfully". Students will need these higher-order skills to succeed in their lives and careers.
14. Readers who engage in higher-order thinking skills go beyond the basic levels of comprehension. They can analyze, synthesize, evaluate, and interpret the text they are reading at complex levels. They can process text at deep levels, make judgments, and detect shades of meaning. They can make critical interpretations and demonstrate high levels of insight and sophistication in their thinking. They are able to make inferences, draw relevant and insightful conclusions, use their knowledge in new situations, and relate their thinking to other situations and to their own background knowledge.
15. Most jobs in the 21st century will require employees to use the four highest levels of thinking—application, analysis, synthesis, and evaluation. So, the present program as in all today's instructional programs, we must expect students to operate routinely at the higher levels of thinking.

B. Aim of the Training Program

The training program aimed at developing Saudi English language Prospective teachers' higher order thinking reading skills through using successful intelligence theory

.C. Validity of the training program

For making sure that the training program is valid and suitable to be administered, the program has handed to three of specialists to validate it.

They agreed that the training program was valid and therefore, ready for implementation.

D. Aim of the training program

By the end of this training program, Saudi English language prospective teachers were expected to develop their ability in the previously mentioned higher order thinking reading skills as they are compatible with successful intelligence theory (analytical- practical and creative skills).

E. Description of the training program

The training program consisted of six sessions and was carried out over a period of six weeks, two hours, once per week. The first two sessions were introductory sessions. The first one was to clarify to prospective teachers: what do successful intelligence theory and its analytical, creative, and practical aspects mean? The second session was to introduce the training program, its aim and learning objectives, duration and its teaching procedures.

It should be mentioned here that the procedures mentioned in session three were recycled during the teaching sessions (from session three to session eight, as the first two sessions were introductory sessions). Each session from session three till the end dealt with the following higher order thinking reading skills as they are compatible with successful intelligence theory (analytical- practical and creative skills):

1. Analytical skills

- Identify the parts/ units /characteristics of.....
- Define the data given and the objectives of....
- Find both the similarities and differences betweenand....
- Compare and contrast.....
- Provide logical arguments to support the following statement.
- Provide more than one view about the following...
- Based on this/these ...what do you conclude?
- What does... mean? What do we mean by...?

2. Practical skills

- What would be your answer if you were in the position of...?
- What have you learned about...?
- Apply what you have learned in new situations.
- Put into practice what you have learned about.

3. Creative skills

- If you do....then what will happen?
- Compose another conclusion of the story
- Create the relation between....and ...
- Distinguish possible relationships among the incidents (data).
- Identifying the writer's conclusions.
- Predict what will happen if.....

Experimentation

Session One (Introductory Session)

Aim: familiarizing the students with successful intelligence theory and its analytical, creative, and practical aspects.

Objectives: By the end of this session prospective teachers would be able to:

- 1- Identify what is meant by successful intelligence?
- 2- Identify the analytical, practical and creative skills.
- 3- Understand how students to apply each skill in a reading text.

Time: 120 minutes.

Teaching procedures

- 1- It was clarified to English prospective teachers what is meant by successful intelligence and that high IQ does not always correlate with success in life, and that it does not seem appropriate that all of the measures to enter any field requiring advanced degrees need to be IQ based. Nor does it seem appropriate that most of our teaching methods favor those that can remember and pass a multiple-choice test over those that are good at the tasks required by a given profession.
- 2- The following skills were explicitly explained as they were the concern of the present study:

1. Analytical skills

- Identify the parts/ units /characteristics of.....
- Define the data given and the objectives of....
- Find both the similarities and differences betweenand....
- Compare and contrast.....
- Provide logical arguments to support the following statement.
- Provide more than one view about the following...

- Based on this/these ...what do you conclude?
- What does...mean? What do we mean by...?

2. Practical skills

- What would be your answer if you were in the position of...?
- What have you learned about...?
- Apply what you have learned in new situations.
- Put into practice what you have learned about.

3. Creative skills

- If you do....then what will happen?
- Compose another conclusion of the story
- Create the relation between....and ...
- Distinguish possible relationships among the incidents (data).
- Identifying the writer's conclusions.
- Predict what will happen if.....

Session Two (The Second Introductory Session)

- Aims:**
1. Introducing the training program: its objectives, duration, and the teaching procedures.
 2. Identifying that each session of the training sessions would deal with a reading text.
 3. Emphasizing that students would apply the previously mentioned skills in each session while responding to the questions following each reading text.

Objectives

By the end of this session, prospective teachers would be able to:

1. Know the training program's aims and learning objectives, duration and the teaching procedures that would be followed during the training sessions.
2. Know what higher order thinking reading skills would be dealt with throughout the training program.
3. Know how to apply these skills in responding to the questions following each reading text.

Time:120 minutes.

Teaching procedures

1. Students were told that they were going to be divided into small groups of four.

2. Each group had its own spokesperson to speak about the group.
3. Students were told that each session would be dealt with a reading text.
4. Students would be given the time to discuss with each other as groups. Students would work and think together about what they were going to write; listen to others' opinions and exchange information; communicate with each other.
5. Students would be allowed to use active reading methods that include peer discussion, as well as to try out their thoughts and seek clarifications from one another as they are reading.
6. Students' responses to the questions followed each reading text would be analyzed to observe their mastery over the higher order thinking reading skills (analytical, practical and creative skills).
7. The teacher's role through the session should be that of an advisor and organizer of the work.

Session Three

Aim: In this session, prospective teachers would have an opportunity to apply the higher order thinking reading skills in a reading text.

Objectives

By the end of this session, students would be able to:

- To apply analytical skills on a reading text.
- To apply practical skills on a reading text
- To apply creative skills on a reading text

Methodology

Guided Group Discussion

The teaching procedures

1. The teacher divided students into groups of four. A spokesperson was chosen for each group.
2. The teacher asked students to read the given reading text (see appendix C).
3. The teacher asked students to discuss the purpose of prisons and if they were necessary to reform criminals or a person can change

over time by himself or herself. (Define the data given and the objectives of ...).

(Analytical ability)

4. In many countries, the judge decides guilt or innocence, not the jury. Do you think that a legal expert such as a judge should decide the decision or the ordinary people on a jury?

Explain your answer.

(Compare and contrast.....)

(Analytical ability)

5. The teacher asked students to provide more than one view about the following statement:

"Should Leroy Strachan be sent to prison for a crime he committed 45 years ago?"

(Provide more than one view about

(Analytical ability)

6. The teacher asked students to discuss why Milledge's family (the killed officer) wanted Mr. Strachan to be brought to trial.

(Draw conclusions)

(Analytical ability)

7. The teacher asks students to write how they would feel about Strachan's case if they were each of the following people:

- a member of Leroy Strachan's family
- a member of the family of Officer Milledge, the victim.
- a Miami police officer.

(Suppose you are in the position of.....)

(Creative ability)

8. The teacher asked students to imagine what would happen if the Miami woman did not claim that she saw Strachan who fired the shot.

(Predict what will happen if

Creative ability

9. The teacher asked students to think about: should a crime that happened a long time ago still be subject to trial? Can witnesses still have a reliable memory of past events? Does this make their evidence valid?

(Create the relation between..... and.....)

Creative ability

10. The teacher asked students to think of another conclusion of The Case of Leroy Strachan.

(Compose another conclusion of the story)

Creative & analytical abilities

11. Students would be given the time to discuss with each other as groups. Students would work and think together about what they were going to write; listen to others' opinions and exchange information; communicate with each other.

12. Students' responses to the previous questions would be analyzed to observe their mastery over the higher order thinking reading skills.

Time: 120 minutes.

Statistical Analysis of Data and Discussion of Results

It was the purpose of the present study to investigate the effect of a training program based on the successful intelligence theory on developing Saudi English language prospective teachers' higher order thinking reading skills.

The training program was developed and experimented with sixteen Saudi English language prospective teachers, in Imam Mohammed Bin Saud Islamic University, in Riyadh, Saudi Arabia.

The sample was submitted to pre- and post-applications of a successful intelligence assessment scale and a higher order thinking reading skills test. The students' mean scores on the two applications of the successful intelligence assessment scale and the reading test were calculated and compared. The statistical analysis of the data and the results were interpreted in terms of the research hypotheses.

To test the first hypothesis which states that "there is statistically significant difference between the mean scores of the prospective teachers on the pre-application and post application of the successful intelligence assessment scale (as a whole) in favor of the post application of the assessment scale", a t-test was conducted to compare the overall performance on the pre- application VS. the post application of the successful intelligence assessment scale (see table 1).

Table (1)
t –Test Results of Students’ overall Performance on the Pre Application VS. the Post Application of the Overall Successful Intelligence Assessment scale

Successful Intelligence Skills	N	Mean	Std. Deviation	t value	FD.	Sig. (1-tailed)	Partial Eta Squared "effect size"
pre	16	37.5000	4.33590	-30.431	15	.01	0.98
post	16	59.8750	2.82548				

The above table shows that the estimated t- value was -30.431, for students' overall performance on the successful intelligence assessment scale. This estimated t- value has statistically significant difference at 0.01 level in favor of the prospective teachers' performance on the post application of the assessment. In addition, the estimated effect size value was 0.98 which indicated that the training program had a large effect on students’ performance on the pre application of the successful intelligence assessment VS. the post application. Thus, one can conclude that the training program had a great effect on developing students’ successful intelligence. Hence, support was gained for the first hypothesis.

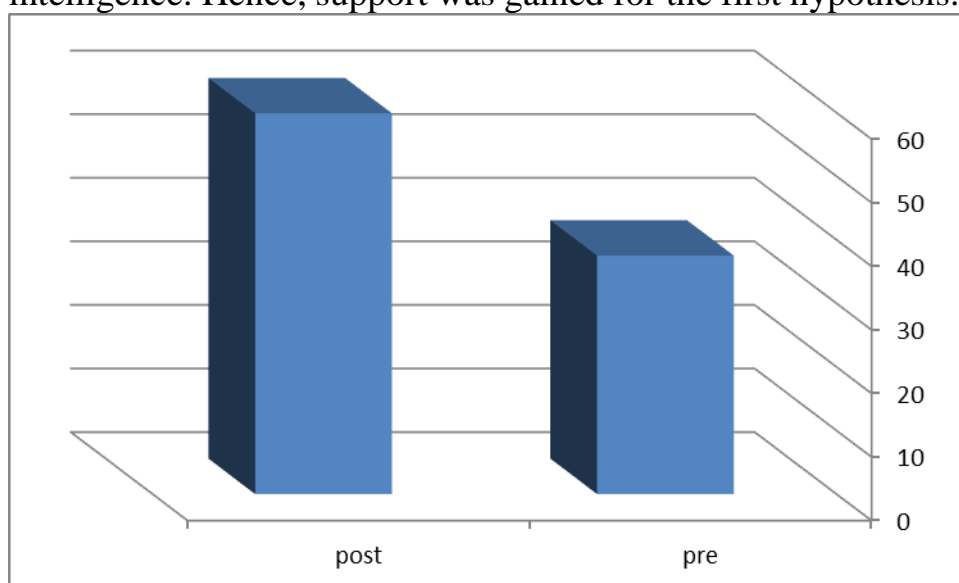


Figure (1)

The Differences of the Students' Overall Performance on the Post Application of the Successful Intelligence Assessment Scale VS. The Pre- Application of the Assessment Scale

To test the second hypothesis which states that “there are statistically significant differences between the mean scores of the prospective teachers on the pre-application and post application of the successful intelligence assessment in each sub- skill (creative-analytical- practical skills) in favor of the post application of the assessment”, t- tests were conducted to compare the prospective teachers’ performance on the pre and post applications of the successful intelligence assessment scale in each sub- skill(creative-analytical- practical skills)of the assessment (see Table 2). They revealed statistically significant differences at 0.01level. This is indicated in table (2).

Table (2)

t –Test Results of Students’ Performance on the Pre Application VS. the Post Application in Each – Sub Skill of theSuccessful Intelligence Assessment

Successful Intelligence Skills	Application	N	Mean	Std. Deviation	t	F.D.	Sig. (1-tailed)	Partial Eta Squared "effect size"
Analytical	pre	16	13.0000	2.65832				
	post	16	19.8750	1.62788	-20.989	15	.01	0.96 Large
Creative	pre	16	12.0000	1.31656				
	post	16	19.5625	.81394	-22.165	15	.01	0.97 Large
Practical	pre	16	12.5000	1.59164				0.97
	post	16	20.4375	1.20934	-23.692	15	.01	Large

Table (2) shows that the estimated t- values were -20.989, -22.165, and -23.692, for the following successful intelligence skills respectively: analytical, creative and practical skills. These estimated t-values had statistically significant differences at 0.01 level of significance in favor of students' performance on the post application of the successful intelligence assessment scale VS the pre application of the assessment scale in each sub- skill of the successful intelligence skills. In addition, the estimated effect size value was 0.96, 0.97, and 0.97 which indicated that the training program had large effect on students' performance on the pre application of the successful intelligence assessment scale VS. the post application in each sub- skill of the successful intelligence skills. The following figure shows the differences on students' performance on the post application of the successful intelligence assessment scale VS. the pre- application in each sub- skill of the successful intelligence skills.

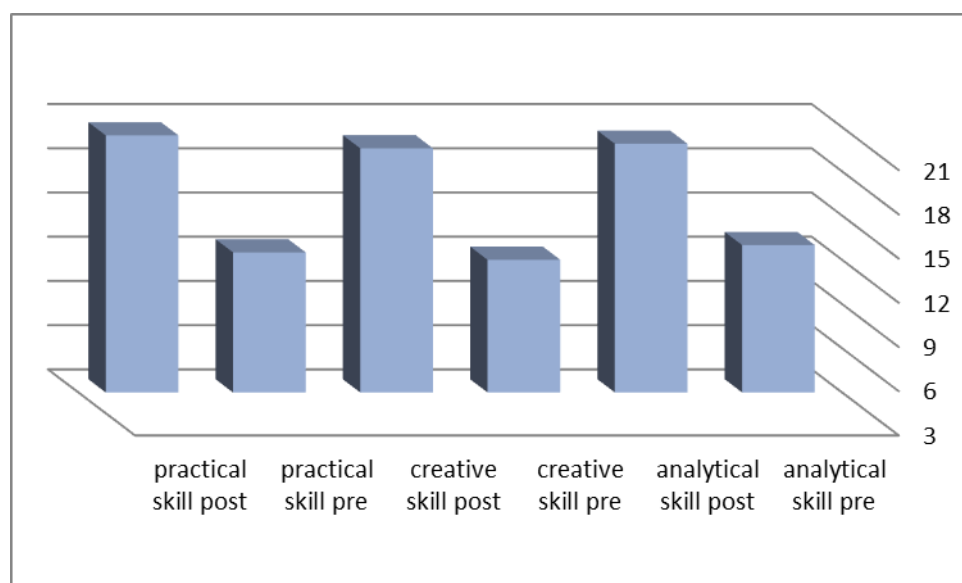


Figure (2)

The Differences of the Students' Performance on the Post Application of the Successful Intelligence Assessment Scale VS. the Pre-Application of the Assessment Scale in Each Sub- Skill

Thus, one can conclude that the training program had a great effect on developing prospective teachers' successful intelligence. Hence, support was gained for the second hypothesis.

To test the third hypothesis which states that "there is statistically significant difference between the mean scores of the prospective teachers' overall performance on the pre-application and post application

of the higher order thinking reading test in favor of the post application of the test, a t-test was conducted and revealed statistically significant differences at 0.01 level. This is indicated in table (3).

Table (3)

t –Test Results of Students’ Performance on the Pre Application VS. the Post Application in Overall Higher Order Reading Thinking Test

Higher Order Thinking Reading Skills	N	Mean	Std. Deviation	t	F.D.	Sig. (1-tailed)	Partial Eta Squared "effect size"
pre	16	16.6250	4.54423	-			
post	16	39.0000	4.77493	26.450	15	.01	0.98

From table (3), it is apparent that the estimated t- value was -26. 450 for students' overall performance on the reading test. This estimated t-value has statistically significant difference at 0.01 level in favor of the prospective teachers' performance on the post application of the test VS. the pre – application.

In addition the estimated effect size value is 0 .98 indicates that the training program had large effect on students' mastery of the higher order thinking reading skills. Thus it could be concluded that the training program had great effect on developing prospective teachers' higher order thinking reading skills. Hence, support was gained for the third hypothesis.

The following figure shows the differences of prospective teachers' performance on the post application of the test VS. the pre- application.

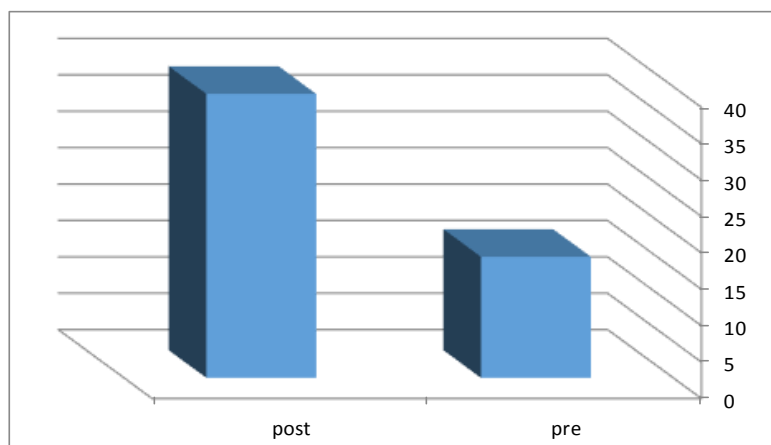


Figure (3)

The Differences of the Prospective Teachers' Overall Performance on the Post Application of Higher Order Thinking Reading Skills Test VS. The Pre- Application of the Test

To test the fourth hypothesis which states that, “there are statistically significant differences between the mean scores of the students' performance on the pre-application and post application of the reading test in each sub- skill (analytical-practical and creative skills) in favor of the post application of the test", t- tests were used to compare the mean scores of students' performance on the post application of the reading test in each sub – skill VS. The pre-application of the test. This is indicated in table (4).

Table (4)

t –Test Results of Prospective teachers’ Performance in each sub-skill on the Pre Application VS. the Post Application of The Higher Order Thinking Reading Skills Test

Text Analysis Skills	Application	N	Mean	Std. Deviation	t	F.D.	Sig. (1-tailed)	Partial Eta Squared "effect size"
Analytical	pre	16	7.1875	2.10456	-18.278	15	.01	0.95
	post	16	15.9375	1.94829				
Practical	pre	16	1.1875	.83417	-21.706	15	.01	0.97
	post	16	5.5625	.51235				
Creative	pre	16	8.2500	2.76887	-14.550	15	.01	0.93
	post	16	17.500	3.01109				

From table (4), it is shown that the estimated t- value -18.278,-21.706 and -14.550 for the determined higher order thinking reading skills were statistically significant at 0.01 level in favor of students' performance on the post application of the reading test VS. the pre- application. Moreover, the estimated effect size .95, .97 and .93 for higher order reading thinking sub- skills respectively revealed that the training program has large effect in developing each sub- skill. Hence, the fourth

hypothesis was supported. The following figure shows the differences of students' performance on the post application of the higher order thinking reading test in each sub-skill.

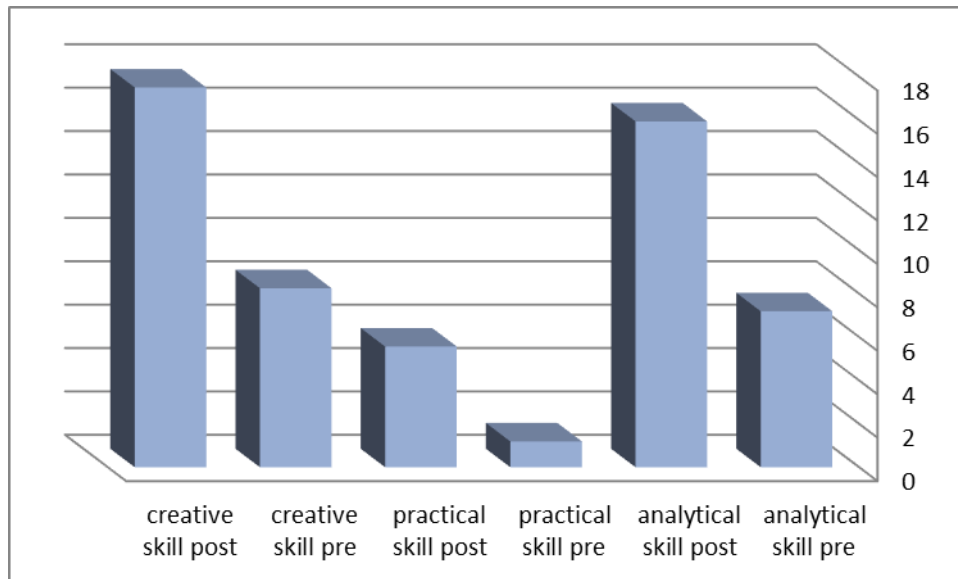


Figure (4)
The Differences of the Prospective Teachers' Performance on the Post Application of the Higher Order Thinking Reading Test VS. the Pre- Application of the Testing Each Sub- Skill

To sum up, all the hypotheses of the study were supported. Students achieved progress in their successful intelligence skills after the implementation of the training program as compared to their performance before the training program. Students' mastery of higher order thinking reading skills improved after the implementation of the training as compared to their performance before the training program implementation.

Hence, the positive findings of the study indicated the effect of the training program based on the successful intelligence theory in developing Saudi English prospective teachers' higher order thinking reading skills.

Discussion of results

The study results are discussed in terms of the dependent variables: the Saudi English prospective teachers' performance on the successful intelligence assessment scale the higher order thinking reading skills test.

Prospective teachers' performance on the successful intelligence assessment scale

Results of the study showed that the English prospective teachers performed significantly better on the successful intelligence assessment scale as a whole as well as on each sub skill as compared to their performance on the pre application of the assessment. Thus, it can be said that English prospective teachers through the training program based on the successful intelligence theory could be analytical, practical and creative thinkers. This might be attributed to several factors:

Firstly, the training program provided a means for students to develop their analytical intelligence. They were encouraged to think together more effectively, and plan thinking processes in a detailed and cohesive way. It helped students become effective problem solvers as they thought before they acted. By thinking to learned, they learn to think. The training program motivates students to think analytically that means to analyze, judge, compare and contrast, evaluate and assess. These skills are vital to pinpointing a problem's source, a skill any job requires. This result is consistent with Sternberg, Williams,(1996);Sternberg, Torff, & Grigorenko (1998b)and Sternberg (2007).

Secondly, students through the training program were trained to create, invent, discover, suppose that and predict. They were able to conceive original ideas easily. They engaged in higher-order thinking and went beyond the basic levels of comprehension. They could analyze, synthesize, evaluate, and interpret the text they were reading at complex levels. They can process text at deep levels, make judgments, and detect shades of meaning. They could make critical interpretations and demonstrate high levels of insight and sophistication in their thinking. They were able to make inferences, draw relevant and insightful conclusions, use their knowledge in new situations, and relate their thinking to other situations and to their own background knowledge. Those prospective teacher students were indeed be prepared to function as outstanding workers and contributors in a fast-paced workplace where the emphasis is on using information rather than just knowing facts.

Prospective teachers' performance through the training program indicated that they were able to translate thought into action, had a

product orientation. . . . This is consistent with Sternberg, & Williams, (1996) and Sternberg, Torff, & Grigorenko, (1998b) studies results.

Thirdly, the training program based on successful intelligence theory revealed that successful intelligent students have common characteristics and attributes that are found among successfully intelligent people: they motivate themselves . . . ; learn to control their impulses; know when to persevere; know how to make the most of their abilities; complete tasks and follow through; are initiators; are not afraid to risk failure. . . . make mistakes, but not the same mistake twice; accept fair blame; reject self-pity; are independent; focus and concentrate to achieve their goals; have the ability to see the forest and the trees; have a reasonable level of self-confidence and a belief in their ability to accomplish their goals; and balance analytical, creative, and practical thinking. This is consistent with Sternberg, & Grigorenko, (2000) and Sternberg, Lipka, Newman, Wildfeuer, & Grigorenko, (2003) studies results.

B. Prospective teachers' performance in the higher order thinking reading skills

The study results revealed that the English prospective teachers performed significantly better on the higher order thinking reading posttest in overall skills as well as in each skill as compared to their performance on the pre administration of the test.

Consequently, these positive findings assured the great effect of the training program based on the successful intelligence theory on developing English prospective teachers' higher order thinking reading skills. This progress might be attributed to some factors like:

Firstly, through the training program based on the successful intelligence theory, students learned to be persistent and stuck to the task, exchange ideas and listen with understanding to each other's points of view. They were able to define the data given, compare and contrast, provide logical arguments to support their opinions, and conclude logical conclusions. They managed to apply what they had learned in new situations; put into practice what they had learned about. They could compose another conclusion of the story, distinguish possible

relationships among the incidents, identify the writer's conclusions and predict what would happen. This result is consistent with what Sternberg & Grigorenko (2000) mention that teaching for successful intelligence improves performance relative to standard (or critical-thinking) instruction, even when performance is assessed for straightforward memory-based recall. There are at least four reasons for this: First, teaching for successful intelligence encourages deeper and more elaborated encoding of material than does traditional teaching, so students learn the material in a way that enhances probability of retrieval at test time. Second, teaching for successful intelligence encourages more diverse forms of encoding material, so there are more retrieval paths to the material and greater likelihood of recall at test time. Third, teaching for successful intelligence enables students to capitalize on strengths and to correct or compensate for weaknesses. Fourth, teaching for successful intelligence is more motivating to both teachers and students, so teachers are likely to teach more effectively and students are likely to learn more.

Challenges faced during the implementation of the training program

It is important to mention some difficulties that faced the researcher during the implementation of the training program. First, convincing prospective teachers of the importance of the successful intelligence skills in their lives and careers took great effort on the behalf of the researcher. Second, at the beginning of the training program the prospective teachers found it difficult to answer the questions followed each reading text that measure the higher order thinking reading skills as they need practice and training. They declared that these types of questions are demanding and need time and deep thinking to recognize the relationship among parts of information, distinguish possible relationships among the incidents, provide logical arguments to support their opinions, and conclude logical conclusions, apply what they have learned in new situations, put into practice what they have learned about and compose another conclusion of the story. Third, time was very limited, so the researcher could apply only six sessions only out of eight.

Conclusions & Recommendations:

1. Readers who engage in higher-order thinking go beyond the basic levels of comprehension. They can analyze, synthesize, evaluate, and interpret the text they are reading at complex levels. They can process text

at deep levels, make judgments, and detect shades of meaning. They can make critical interpretations and demonstrate high levels of insight and sophistication in their thinking. They are able to make inferences, draw relevant and insightful conclusions, use their knowledge in new situations, and relate their thinking to other situations and to their own background knowledge. These readers will indeed be prepared to function as outstanding workers and contributors in a fast-paced workplace where the emphasis is on using information rather than just knowing facts.

2. The curriculum must expand to include information and activities that explicitly support students in learning to think well. The emphasis is less on the mastery of information measured by a recall-based assessment and more on learning how to use one's mind well, to synthesize and analyze skillfully. Students will need these higher-order skills to succeed in their lives and careers.
3. Although most teachers learned about Bloom's Taxonomy (Bloom, 1956) during their preparation courses, many seldom challenge students beyond the first two levels of cognition: knowledge and comprehension. Because most jobs in the 21st century will require employees to use the four highest levels of thinking—application, analysis, synthesis, and evaluation—this is unacceptable in today's instructional programs. We must expect students to operate routinely at the higher levels of thinking.
4. Educators have to revise curricula to include integrated learning environments which encourage learners to use higher order thinking skills.
5. Content instruction should strive for depth rather than breadth. To process what they read with insight and a critical eye, students must be able to consider the text as a whole and understand what the author is trying to communicate. Students may demonstrate understanding by explaining the purpose or viewpoint of a text, identifying the theme and critical elements, sharing their opinions on some aspect of the story, or analyzing the personal attributes of a character and interpreting his actions. Students must also be able to create and understand analogies, write about their thoughts and opinions, compare and contrast similar or dissimilar events, and use their creativity to extend and develop concepts.
6. Teaching for higher-order thinking skills will allow students to analyze pros and cons and form well-reasoned opinions.

7. Successful intelligence requires ability with three kinds of thinking: creative, practical, and analytic. People who possess successful intelligence are “smart at achieving; they know how to make the most of what they do well and how to find ways to work around their limitations. Motivated, controlled, persevering, and independent, these are the people who know how to get ahead.

8. Successful Intelligence is necessary for everyone concerned with what it takes to get ahead - employers, parents, teachers, and especially all those who want to maximize their strengths and succeed.

9. Many students could learn more effectively than they do now if they were taught in a way that better matched their patterns of abilities. Teaching for successful intelligence provides a way to create such a match. It involves helping all students capitalize on their strengths and compensate for or correct their weaknesses. It does so by teaching in a way that balances learning for memory, analytical, creative, and practical thinking.

Suggestions for further studies

1. Further research is needed to explore the effectiveness of the successful intelligence theory on developing EFL\ESL students' other language skills.

2. More studies are required with different student population in other areas with the purpose of investigating the effectiveness of similar strategies on developing higher order thinking skills in different contents.

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