

**IMPACT OF INTERVENTION PROGRAMMES ON
THE EMOTIONAL INTELLIGENCE SKILLS AND
ACADEMIC ACHIEVEMENT OF SENIOR
SECONDARY SCHOOL STUDENTS IN LAGOS,
NIGERIA**

BY

AZUKA – OBIEKE, UCHENNA

AUGUST, 2011

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**A THESIS IN THE DEPARTMENT OF EDUCATIONAL FOUNDATIONS (WITH
EDUCATIONAL PSYCHOLOGY) SUBMITTED TO THE SCHOOL OF
POSTGRADUATE STUDIES, UNIVERSITY OF LAGOS.**

**IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF
THE DEGREE OF DOCTOR OF PHILOSOPHY (Ph. D) IN EDUCATIONAL
PSYCHOLOGY OF THE UNIVERSITY OF LAGOS, AKOKA. LAGOS. NIGERIA**

AUGUST, 2011

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CERTIFICATION

This is to certify that the Thesis:

**“IMPACT OF INTERVENTION PROGRAMMES ON THE
EMOTIONAL INTELLIGENCE SKILLS AND ACADEMIC
ACHIEVEMENT OF SENIOR SECONDARY SCHOOL STUDENTS IN
LAGOS, NIGERIA”**

Submitted to the

School of Postgraduate Studies

University of Lagos

For the Award of the Degree of

DOCTOR OF PHILOSOPHY (Ph. D)

is a record of original research carried out

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DEDICATION

This Research work is dedicated to my parents

Cdr. Emmanuel Nnaemeka Oradiwe (Rtd)

&

Lt. Col. H.I.M.T Oradiway (Rtd)

Whose moral, financial and emotional commitment saw me through my entire academic career. I remain unreservedly grateful to both of you.

ACKNOWLEDGEMENT

I want to start by registering my profound and eternal gratitude to the ever faithful and all sufficient God whose mercy, grace and favour made this work a reality.

My appreciation goes to my unassuming and very accessible supervisor, Dr. Sola Aletan, who was always there for me, even in the most trying moments of this work. The novelty he introduced into this work made my dream a reality. The contributions

of my second supervisor – Dr C.E Okoli are no less invaluable as his acute critique of this work was the refiner’s furnace that purified the work and brought out its glory.

I am immensely indebted to Dr. P.I. Nwadinigwe whose invaluable guidance, suggestions and uncommon technical inputs to this work did not only enrich it but, is a source of great inspiration.

I wish to specially acknowledge Prof. Ngozi Osarenren, whose interventions at the most critical junctions of this work remain priceless.

My gratitude goes to the Head of Department, Prof. (Mrs) A.M. Olusakin and other lecturers in the department of Educational Foundation including: Prof. G.C Ilogu, Prof. (Mrs) O.M Omoegun, Rev(Fr.) Dr. F.M Isichei, Dr. (Mrs.) Abe, Dr M. Ubagha, Dr.(Mrs) B.O Makinde, Dr. A.A. Oni and the ever willing to assist Dr. (Mrs) O.M. Alade for their counsel and invaluable contributions to the success of this work.

My deepest appreciation goes to my husband David Azuka Obieke and our children, Chukwufumnanya, Olisemelie and Ifeanyichukwu for their unquantifiable love, understanding, support and prayers without which this work would have been stalled.

Many thanks to my siblings Ovie & Amaka Erhimedafe, Obiekwe Oradiwe and Jane Oradiwe for their moral and financial support. My aunties and uncles, Larry Koldsweat, Nka Oradiwe, Pat & Gloria Nwabueni and Chuka & Joy Oradiwe deserve my thanks for their prayers and moral support. My special thanks also goes to my sister-in-law, Dumebi Obiekea who served as my Research Assistant and my brother-in-law, Peter Uche Obiekea who proof read the initial draft of this work.

I wish to acknowledge the support of my friends, Dr.(Mrs) Stella Anyama, Dr.(Mrs) Favour Nwolisa, Dr. Stephen Bolaji, Azukaego Eluemuno, Flora Aguiyi, Barbara Aligekwe, Philo Bvase-Djebah, Priscilla Okeleke, and others too numerous to mention. I am equally indebted to my Ph. D colleagues Mrs Mary Iyayi, Mrs Lizzy Akande, Mrs Tessy Ettu, Mrs Furo Welli, Mr Jimoh Jelili, Mrs Ify Madueke, Mr Nelson Asuai, Mr Yemi Ayeobasan, Mr Kenneth Asamoah-Gyimoh, Mrs Adunni Adeleye, Mrs J. N.Iwuagwu, Funmilayo Aiyeyika and Rev.Tunji Bamgbose . You all provided the friendly intellectual atmosphere within which this work thrived.

I will not forget to mention members of Foursquare Gospel Church, Okota and other Christian brethren: Pastor & Mrs. John Adesanya, Pastor & Mrs. Moses Ogianyo, Pastor & Mrs. Gabriel Ofuani, Pastor Sam Omoleye, Engr. & Mrs. Chris Obichere, Mr & Mrs Ifeanyi Erechukwu, Mr. Remi Babatunde, Mrs. Mary Amamgbo, Mr & Mrs. Ernest Ezewuba, Mr. Chukwudi Okparanozie, Engr. & Mrs. Sesan Daramola, Mrs. Lola Ojeagbase, Mrs. Fumilayo Preh, Mrs. Morenike Oyekan, Mrs. Tessy Odimgbe, Mrs. Igori, Mr. Bidemi Babatunde, Mr. Ose Fawole and Mr. I.K Onunkwo, to mention but a few. Your prayers and support were invaluable to the success of this work.

I acknowledge the cooperation of students and teachers who were part of this study.

Finally, I wish to acknowledge the support of Mr. M.M. Onoka, Mrs Kehinde Ogunlabi, Mrs Shade Adefila and Mrs J Shobande for their immense contributions.

Uchenna Azuka-Obieke

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ABBREVIATION

Abbreviation	Meaning
EDEISQ Skills	Exploring and Developing Emotional Intelligence Questionnaire.
AT	Achievement Test
ELS	Emotional Learning System
PM	Peer Mentoring
ANCOVA	Analysis of Covariance
GPA	Grade Point Average
GRE	Graduate Record Examinations

IQ	Intelligence Quotient
EQ	Emotional Quotient
EQ-i	Emotional Quotient Inventory
CTI	Constructive Thinking Inventory
EARS	Emotional Accuracy Research Scale
ECI	Emotional Competency Inventory
TMMS	Trait Meta-Mood Scale
MEIS	Multifactor Emotional Intelligence Scale
MSCEIT	Mayor, Salovey & Caruso Emotional Intelligence
Test	

ABSTRACT

This study investigated the impact of intervention programmes on emotional intelligence skills and academic achievement of senior secondary school students in Lagos, Nigeria. Emotional intelligence skills in this study are interpersonal,

leadership, self-management and intrapersonal skills. The intervention programmes are Emotional Learning System (ELS) and Peer Mentoring (PM).

A quasi-experimental pre-test/ post-test, control group design was adopted for the study. The initial sample consisted of 240 participants comprising of both female and male SSS3 students drawn from three public schools in Mushin, Amuwo Odofin and Oshodi/Isolo education zones of Lagos State. The final sample for the experiment consisted of 156 female and male SSS3 students. Eight research hypotheses were formulated and tested at 0.05 level of significance. Two major instruments were used to generate data for the study namely:

1. Exploring and Developing Emotional Intelligence Skills Questionnaire (EDEISQ)
2. Achievement Test (AT)

Data generated were analyzed using descriptive statistical method and Analysis of Covariance (ANCOVA), Pearson Product Moment Correlation Coefficient and Fishers Protected t test. Results from the analysis of data indicated that five out of the eight null hypotheses tested were rejected while three were accepted. The study revealed that both treatment techniques were efficacious in enhancing the level of emotional intelligence skills and in turn affects the academic achievement of the students. Further evidence revealed that emotional learning system was more effective in improving emotional intelligence skills and academic achievement than the peer mentoring technique. It is also apparent from the study that there is a relationship between emotional intelligence skills and academic achievement. The conclusion suggests that a student's level of emotional intelligence skills affects his/her academic achievement. Thus, there is the need to inculcate the development of emotional intelligence skills into the school curriculum. This is considered important because of its impact in improving the academic achievement of students.

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

The trend in the academic achievement of secondary school students in Nigeria in the last two decades has become a major source of concern to all stakeholders in the education sector. This is so because of the great importance that education has on the national development of the country. There is a consensus of opinion about the fallen standard of education in Nigeria (Adebule, 2004). Parents and government are in agreement that their huge investment on education is not yielding the desired dividend (Adegbite, 2005). Teachers also complain of students' low achievement at both internal and external examinations. The annual releases of Senior Secondary Certificate Examination results (SSCE) conducted by West African Examination Council (WAEC) depicts the problematic nature and generalization of poor secondary school students' achievement in different school subjects especially mathematics and English language among secondary school students (Adesemowo, 2005). Confirming the above, Dawa, Adamu and Olayomi (2005) believe that there is mass decline in the achievement of students in both National Examination Council (NECO) and the West Africa Senior Secondary Certificate Examination (WASSCE). The table below affirms the foregoing assertion.

Table 1: Percentage of Candidates who obtained Credit passes in at least five subjects (including English and Mathematics) in May /June 2005 to 2009.

Year	Percentage with five Credit passes and above
2005	27.53
2006	15.56
2007	25.54
2008	13.76
2009	25.59

Source: WAEC (2005 – 2009), Research Division, Lagos

A cursory analysis of the table above showed a consistent poor achievement in the five years reviewed. A remarkable decline in percentage achievement was recorded in 2006 compared to 2005. It picked up in 2007 to 25.54% from 15.56% in 2006 and then plummeted to 13.76% in 2008 before rebounding in 2009 to 25.59%.

Education at secondary school level is supposed to be the bedrock and the foundation towards higher knowledge in tertiary institutions. It is an investment as well as an instrument that can be used to achieve a more rapid economic, social, political, technological, scientific and cultural development in the country. The National Policy on Education (2004) stipulated that secondary education is an Instrument for national development. It fosters the development of the individuals for further education, and general development of the society. The role of secondary education is to lay the foundation for further education and if a good foundation is laid at this level, there is likely to be no problem at subsequent levels.

Poor academic achievement is an achievement that is adjudged by the examiner as falling below an expected standard. Academic failure is not only frustrating to the

students and the parents, its effects are equally grave on the society in terms of dearth of manpower in all spheres of the economy and polity (Aremu, 2000). Morakinyo (2003) agrees that the falling level of academic achievement is attributable to teacher's non-use of verbal reinforcement strategy. Adegbite (2005) found out that the attitude of some teachers to their job is reflected in their poor attendance to lessons, lateness to school, unsavory comments about student's performance that could damage their ego, poor method of teaching and the likes. Edun and Akanji (2008) asserted that poor academic achievement among our students is usually attributed to the school authority and teachers' attitude to their work. Omolewa (1981) postulated that some of the factors responsible for poor academic achievement among secondary school students are connected with problems associated with educational development of the country such as expansion of schools without proper physical and academic planning, inadequate provision of necessary equipment in schools, dearth of qualified teachers, the growing tendency to use teaching profession as a springboard to a more lucrative job and fall in the prestige of teachers.

Very few people care to think of the 'student emotional factors' which cannot be divorced from the complexity of factors that determine the totality of a student's success in life. One such element of these complex factors is the student's level of emotional intelligence.

Adediran (1991) stated that:

The increasing population of school going adolescents in Nigeria has revealed a variety of problems which contemporary Nigerian higher

institutions are forced to bear. Among the observable personal problems of Nigerian adolescents, particularly in secondary schools, are unhappiness, annoyance and anger, inability to meet needs, inability to get aspirations into fruition, anxiety neurosis, excessive frustration, lack of knowledge and information and partial or total failure. Also common among the secondary school students are educational or academic problems such as poor study habits, poor memory, poor performance, lack of interest in the school, and fear to disclose their problems to teachers... (p.47)

What the foregoing suggests is that there is a fundamental problem in the emotional and academic orientation among secondary school students.

Oyinloye (2005) attributes the problem of poor academic achievement to low level of emotional intelligence among secondary school students. He believes that "students who lack emotional intelligence show some adjustive challenges or in some ways fail to handle effectively the demands of school work. Such students might be said to have little or no emotional intelligence and may not be capable of attaining personal goals which include high academic achievement."

Abisamra (2000) averred that "Intellectual Intelligence account for only 20% of total success and the rest goes for emotional and social intelligence" and argued that "it is only logical that teachers begin to teach components of emotional intelligence to students at school". He then concluded that if emotional intelligence affects students' achievement, then it is imperative for schools to integrate it in their curricula and thereby raising the level of students' success.

The term 'emotional intelligence' was coined in 1990 by Yale psychologist Salovey and Mayer, who together developed a model of intelligence reflecting the connection of emotions to thinking (Salovey and Mayer, 1990). Emotional Intelligence is perceived as a type of aptitude that involves the ability to monitor one's feelings and that of others, to discriminate among them and to use this information to guide one's feeling and thinking (Salovey and Mayer, 1990). Emotional intelligence is the intelligent use of emotions—intentionally making ones emotions work for him by using them to help guide ones behaviour and thinking in ways that enhance one's ability to satisfy ones basic needs and to obtain ones wants. Impliedly, it is a learned ability requiring an intentional and active decision making.

Cherniss (2004) stated the importance of emotional intelligence as follows:

It is necessary to improve performance and psychological well-being in school works; it is vital for assessment and measurement; it is important in managing feelings and handling stress which is vital for academic school problem like test failure; inability to cope with certain subjects are brought under control by the right application of emotional intelligence..(p.61)

Emotional intelligence is an all-round potential that is in some amount genetically present in every individual but developed in the course of life events and environment which aid one to manage oneself and relate effectively with others (Goleman, 1995). Every student already has a level of emotional intelligence. Therefore, every member of the school management, teachers and parents have a

great role in improving and developing this potential in students so as to be effective in their academic work and excel in life. In order to meet the above demands and challenges, research studies indicate that the development of emotional intelligence skills should be incorporated in the academic curriculum to produce healthy, responsible and productive students (Vela, 2003).

Emotional intelligence as determined by Nelson and Low (1998) has four major skills dimensions of emotional competencies. The first competency area is interpersonal skills which involve the importance of communication and emotional control in building and maintaining healthy and productive relationships. This competency includes the emotional skills of: (a) assertion (b) anger management (c) anxiety management. The second competency area is leadership skills and involves the importance of developing responsible leadership centres around the person and leading in positive ways when working with others. Emotional skills in this area include: (a) comfort (b) empathy (c) decision making and (d) positive influence. The third competency is self-management skills which involves self direction and management to achieve meaningful career and personal goals. Emotional skills include (a) drive strength (b) time management (c) commitment ethic and (d) positive change. The fourth competency area is intrapersonal skills which involve learning and developing positive beliefs, attitudes, and views of self to achieve personal well-being and health. Emotional skills in this area include: (a) self-esteem and (b) stress management. Observably, it is the deficiency of these components of emotional intelligence skills in most of our secondary school students that accounted largely for their academic underachievement.

On account of this, Epstein (1998) and Le Doux (2002) suggest that both the cognitive and the emotional domains of student's academic development should be the primary goal for educating students. Increased levels of achievement may occur if the affective domain is included in learning experiences for students.

It is apparent that the primary focus of education is academic performance that has been measured using traditional Intelligence tests or other forms of standardized examination, and schools cannot ignore or neglect the development of emotional intelligence skills and other personal factors contributing to the success of students (Nelson and Low, 2003). Educators need to build high-achieving, productive and healthy students, which can be achieved through a balance in the cognitive and emotional domains of learning. If emotional intelligence skills are developed, strengthened and enhanced, students may demonstrate increased levels of personal, academic and career achievement (Vela, 2003)

Nelson and Low (2005) identified the need for more effective self-management and intelligent self direction (components of emotional intelligence skills) when they stated that:

The qualitative, holistic, emotive and subjective experiences of students are critical to healthy growth and development. Emotional development of students does not seem important until behaviour becomes problematic and reported. Familiar examples are under-achievement, bullying, attrition, school violence, absenteeism, substance abuse, lack of motivation and psycho-educational problems. Even though educators are

compassionate, specific help is often absent, ineffective or too late.

Proactive programmes to identify and develop emotional skills are needed to prevent problematic behaviours and not react to them after the act..

(p.42)

Considering the claims of some of these studies that emotional intelligence accounts for more of the exceptional achievements in students (Abisamra, 2000; Nelson and Low, 2003; Vela, 2003), the present study sought to determine if emotional intelligence skills of students could be fostered through peer mentoring and emotional learning system techniques.

Peer mentoring are mentoring relationships that consist of participants who are closer in age to one another or belong to similar peer groups (Kram, 1985). Chikering and Reisser (1993) assert that peers are the most powerful influence on students' development in schools. They also suggest that students engage each other at least twice as much as they engage with teachers and senior colleagues. Peer relationships are easier for students to maintain and establish due to students' close proximity with other students. Students' attitudes and values change when they are in close relationship with peers and that peer mentoring relationship is an integral part of most students' experiences, which impact on their academic achievement in school.

Emotional learning system is a model emotional and experience-based learning. It involves five steps which are systematic and sequential. The system is designed to ensure a learner-centred development process. The five steps are; step A- Explore,

step B – Identify, step C – Understand, step D – Learn and step E – Apply and model. Researchers have indicated the role of emotional learning system as significant predictor of school achievement (Nelson, Jin and Wang, 2000; Vela, 2003; Boyle, 2003)

Emotional intelligence skills are learnt and can be taught in a classroom. Therefore, emotional intelligence can be viewed as an educational-based model. As an education based model, instructional strategies and techniques can be developed to improve emotional intelligence skills. This education-based model of emotional intelligence can be incorporated in any classroom environment if the intent is to improve the personal, academic, and career success of students. Intervention programmes on emotional intelligence using the emotional learning system and peer mentoring can be adapted to interrupt poor academic achievement and destructive behaviours.

The thrust is to determine how emotional learning system and peer mentoring intervention programmes can be used to enhance emotional intelligence skills and improve academic achievement of senior secondary school students.

1.2 Statement of the problem

The decline in the academic achievement of secondary school students in Nigeria has been a major source of concern to stakeholders and policy makers in the education sector. Measures taken by the government at various levels to eliminate this problem may have focused more on improving infrastructure, equipping the schools and providing qualified teachers in the bid to improve the academic

achievement of students with little or no attention being paid to their Emotional Intelligence (EI) skills. These may not have produced the desired results. The demands of today's world and the challenges of coping with their academic work under serious emotional strain, coupled with uncooperative attitude of some parents who are most often engrossed with the provision of the family needs, may trigger negative emotions in students such that, when not handled effectively, may result in low academic achievement.

Again, the importance of students' emotional standard of performance may have been seen to be missing, misunderstood or neglected. The curricula at the secondary school level are not designed to address this inherent gap. Poor academic achievement among secondary school students limits their potentials for advancement in career and their ability to compete effectively in an ever increasingly competitive global village. It is therefore necessary to interrupt the ugly trend of poor academic achievement among secondary students by developing and enhancing their emotional intelligence skills which have been observed to be major determinants of academic achievement because a student may recover from physical pain or injury, but may never recover from the terror and degradation of his or her emotional state.

Improvement on their emotional intelligence skills may help those negative emotions to be transformed into positive behaviours that will enable them to improve their academic achievement and be better adjusted. It is apparent that a chronic pattern of emotional maladjustment destroys a student's sense of self and personal safety which may have adverse effect on their emotional health, social skills and learning.

Oyinloye (2005) states that students with high emotional intelligence competencies have greater frustration tolerance and impulse control which enable them to accept stressful situations, especially in the academic environment, as a challenge, and so recognize and manage their academic stresses.

There is a gap in the research on programmes to enhance emotional intelligence and academic achievement of secondary school students. Thus, it has become necessary to use peer mentoring and emotional learning system as intervention programmes to address the issues of developing interpersonal, intrapersonal, self-management and leadership skills which are components of emotional intelligence skills of secondary school students so as to improve their academic achievement.

1.3 Theoretical framework

The theoretical considerations germane to this study include:

- Theory of Multiple Intelligence: Howard Gardner (1983)
- Triachic Theory of Human Intelligence: Robert Sternberg (1985)
- Theory of Psychosocial Development: Erick Erikson (1963)

1.3.1 Theory of Multiple Intelligence

Gardner (1983) proposes that people have several kinds of "intelligence", and that teachers can only reach all of their students by adapting their lessons to each of these types of intelligences. Gardner based his theory on (a) his interpretation of studies of people who have had brain damage and their relative ability or inability to learn, (b) the belief that all humans are equally intelligent.

The theory of multiple intelligence comprised of seven types of intelligences namely; Linguistic Intelligence, Logical Mathematical Intelligence, Spatial Intelligence, Musical Intelligence, Bodily-Kinesthetic Intelligence, Interpersonal Intelligence and Intrapersonal Intelligence.

Linguistic Intelligence: This is the ability to learn languages and to use one's skill in using language effectively to accomplish specific goals.

Logical-Mathematical Intelligence: This is the ability to analyse problems logically. It includes skill at computing mathematical problems as well as the ability to investigate hypotheses scientifically.

Spatial Intelligence: It refers to an individual's ability to represent the spatial world in his or her own mind. It includes skill at recognizing and using patterns.

Musical Intelligence: This includes abilities in composing and performing music and in recognising and composing musical pitches, tones and rhythms.

Bodily-Kinesthetic Intelligence: It refers to an individual's abilities to coordinate bodily movement.

Interpersonal Intelligence: This is concerned with individual's ability to understand the intentions, motivations and desires of other people.

Intrapersonal Intelligence: It refers to the capacity to understand oneself – one's thoughts, feelings, fears and desires.

The operative word in this view of intelligences is multiple: Gardner's model pushes way beyond the standard concept of IQ as a single immutable factor. It recognizes

that the test that tyrannized students as they went through school – from the achievement test that sorted students out into those who will be shunted through technical school and those destined for college are based on a limited notion of intelligence, one out of touch with the true range of skills and ability that matter for life over and beyond IQ. Gardner's multifaceted view of intelligence offers a richer picture of a child's ability and potential for success than the standard IQ.

Two aspects of this theory, interpersonal and intrapersonal intelligences, which in a nutshell is summarised as personal intelligence is subsumed in the basic concept of Emotional Intelligence abilities. They are defined as ability in using one's intelligence in gaining empathy toward others and in understanding the self and using this knowledge effectively (Gardner, 1983). His description of the personal intelligence is the interplay of emotion and mastery of managing them. His theory encourages the use of many approaches to teach classroom subject matter-approaches that are likely to capitalize on diverse abilities that different students may have. Gardner postulated that the possession of these abilities enhances the capacity to form an accurate vertical model of oneself and be able to use the model to attain academic excellence as well as operate effectively in life.

1.3.2 Triachic theory of Human Intelligence

Sternberg's (1985) postulated that human intelligence is a mental activity directed towards purposive adaptation to selection and sharpening of real world environment relevant to one's life. The Triachic theory of Human Intelligence includes three facets namely; Analytical Intelligence, Creative Intelligence and Practical Intelligence.

Analytical Intelligence (Componential): This is a measure of one's ability to solve academic problems, such as analogies and puzzles. It is seen as a reflection of how the individual relates to one's internal world.

Creative Intelligence (Experiential): It reflects an individual's ability to connect their internal world to the external reality. It includes one's ability to use pro-knowledge in new or innovative ways in different circumstances, such as finding a new approach to a problem.

Practical Intelligence (Contextual): This involves one's ability to understand and effectively deal with everyday tasks. It is reflective of how the individual relates to the external world.

Sternberg stated that creative and practical intelligence are distinct from what is measured by traditional tests including IQ tests. Creative and practical intelligence predict success in life as well as or better than IQ. Creative intelligence and practical intelligence – comprised skills beyond those measured in traditional Intelligence Quotient (IQ) assessments, with qualities mirrored in Emotional Intelligence abilities. He believes that an individual's ability to achieve success may vary considerably on specific knowledge of creative and practical intelligence. Sternberg and his colleagues also devised tests for what he calls tacit knowledge as an aspect of creative and practical intelligence. He defined tacit knowledge as what you need to know to adapt, shape or select environment that is not expressly taught and often not verbalised.

A study conducted with college students designed to test tacit knowledge found that the test predicted academic achievement and adjustment to college environment substantially better (Sternberg, 1997). He also believed that test can be conducted for tacit knowledge and can also be taught. These studies of non-traditional measures of skills predictive of academic and life success suggest that testing beyond traditional measurement is needed (Sternberg, 1997).

1.3.3 Theory of psychosocial development

Erikson (1963) proposed a stage theory of personality development. According to Erikson, our personality is moulded by the way we deal with series of psychosocial crises that occur as we grow older. A psychosocial crisis occurs when a psychological need conflicts with societal pressures and demand. There exist some relationships in emotional skills and competences to the healthy adjustments required in the main transitions and stages of life as illustrated below.

Erikson's stages of development

STAGES	EMOTIONAL SKILL ASSESSMENT PROCESS
1. Infancy	
Trust vs Mistrust	Importance of learning emotional safety & security early in life. Emotional system is key. Learning & improving emotional intelligence competencies & skills begins early in life.

2. Early Childhood:

Autonomy vs shame, Doubt Intrapersonal growth & development. Learning the foundations of emotional intelligence in all areas. Competency of Intrapersonal Development, including the emotional skills of self-esteem & self confidence.

3. Play Age:

Initiative vs Guilt involves the interpersonal and intrapersonal competency areas, including emotional skills dealing with anger, fear, sadness, self esteem, stress management.

4. School Age:

Industry vs Inferiority involves interpersonal, intrapersonal and self-management competency areas, including emotional skills of achievement drive, time management, commitment ethic & positive personal change.

5. Adolescence:

Identity Confusion involves developing self esteem, assertion, empathy, comfort, leadership, decision making, anger control & management, fear control & management & stress management.

6. Young Adult:

Intimacy vs Isolation	involves developing assertion, empathy, comfort, anger control & management, anxiety management, stress management, positive personal change, and self esteem.
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7. Adulthood:

Generativity & Stagnation	The process of understanding and using emotional intelligence skills & competencies to increase productivity & satisfaction in life and work. Using the emotional system to renew self & achieve excellence in life & work.
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8. Mature Age:

Integrity & Despair	Exploring & developing emotional intelligence skills & competencies to maintain productivity, emotional health, personal renewal, and a positive approach to life stress and change.
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At each of the psychosocial stages of life development and as people move fluidly back and forth throughout life, the emotional system is the key element of the human condition. An understanding of the emotional system helps people successfully meet the demands and challenges of each stage of life. The emotional system provides a different, additive and critical sources of data to improve personal and career success. In emotional intelligence, the emotional mind works in concert with the cognitive mind to integrate and harmonize the person. Emotional intelligence skills enable people to reduce negative stress in their life, build healthy

relationships, communicate effectively, and develop emotional health. Emotional safety is important at each stage of development. These same skills and competencies are critical to achieving academic and career excellence in life.

1.4 Purpose of the study

The purpose of this study is to establish the impact of emotional learning system and peer mentoring on the emotional intelligence skills and academic achievement among senior secondary school students in Lagos, Nigeria.

Specifically, the purpose of the study is to:

1. Examine whether there is any difference in the post-test scores on emotional intelligence skills among participants exposed to Emotional Learning System, Peer Mentoring and Control Groups.
2. Investigate if there is any difference in post-test scores on academic achievement among participants exposed to Emotional Learning System, Peer Mentoring and Control Group.
3. Establish whether there is any gender difference in post-test scores on emotional intelligence skills due to experimental conditions of participants.
4. Determine whether there is any difference in post-test scores on interpersonal skill among participants in the experimental groups.
5. Ascertain if there is any difference in post-test scores on leadership skill among participants in the experimental groups.
6. Examine whether there is any difference in post-test scores on self-management skill among participants in the experimental groups.
7. Investigate if there is any difference in post-test scores on intrapersonal skill among participants in the experimental groups.

8. Establish whether there is any relationship between emotional intelligence skills and academic achievement among participants in the experimental groups.

1.5 Research Questions

The following research questions guided the study:

1. Is there any difference in post-test scores on emotional intelligence skills among participants exposed to Emotional Learning System, Peer Mentoring and Control Group?
2. Does any difference exist in post-test scores on academic achievement among participants exposed to Emotional Learning System, Peer Mentoring and Control Group?
3. To what extent will there be any gender difference in post-test scores on emotional intelligence skills due to experimental conditions of participants?
4. Will there be any difference exist in the post-test scores on interpersonal skills among participants in the experimental groups?
5. Is there any difference exist in post-test scores on leadership skills among participants in the experimental groups?
6. To what extent will there be any difference in the post-test scores on self-management skills among participants in the experimental groups?
7. Will there be any significant difference in the post-test scores on intrapersonal skills among participants in the experimental groups?

8. Is there any relationship between emotional intelligence skills and academic achievement among participants in the experimental groups?

1.6 Research Hypotheses

The following research hypotheses were formulated to guide the study:

1. There is no significant difference in post-test scores on emotional intelligence skills among participants exposed to Emotional Learning System, Peer Mentoring and control group.
2. There is no significant difference in post-test scores on academic achievement of participants exposed to Emotional Learning System, Peer Mentoring and control group.
3. There is no significant gender difference in post-test scores on emotional intelligence skills due to experimental conditions of participants.
4. There is no significant difference in post-test scores on interpersonal skills of participants in the experimental groups.
5. There is no significant difference in post-test scores on leadership skills of participants in the experimental groups.
6. There is no significant difference in the post-test scores on self-management skills of participants in the experimental groups.
7. There is no significant difference in the post-test scores on intrapersonal skills of participants in the experimental groups.
8. There is no significant relationship between emotional intelligence skills and academic achievement among participants in the experimental groups.

1.7 Significance of the study

This study would be invaluable to stakeholders in the education sector - teachers, educational psychologist, counsellors and students who may wish to undertake further research in emotional intelligence.

The findings from the study would help institutions, practitioners, and researchers learn effective intervention programmes that will help develop emotional intelligence skills and improve academic achievement among secondary school students. The outcome of this study would assist curriculum experts to review the present educational curriculum with the aim of mainstreaming emotional intelligence skills as core component of senior secondary school curriculum to aid transition to tertiary institutions.

An understanding of the intervention programmes - Emotional Learning System and Peer Mentoring on emotional intelligence skills and academic achievement may provide additional information and insight into resolving issues of student retention and academic success. The findings from the study would assist educators to understand better the importance of non-traditional variables (which include emotional intelligence) as they affect students' academic success. The outcome of this study would help educators to develop proactive programmes that would assist in identifying and remedying problematic behaviours associated with learning.

Mainstreaming the findings of this study, especially the aspect that has to do with the inclusion of the teaching of emotional intelligence skills in our secondary school curriculum would facilitate qualitative and quantitative education and hence fast

track the attainment of Millennium Development Goals(MDGs) in the area of education.

1.8 Scope of the study

The study was limited to two Education Districts randomly selected from Lagos state namely District V and VI .The study covered Public senior secondary school three (SS3) students (both male and female). The choice of SS3 students for this study was based on the fact that SS3 is the transitional class to tertiary institution and 'independent life'. Hence, the need to cultivate emotional intelligence skills that will help them to cope with the challenges associated with the transition. It was the researcher's opinion that the study would change students' attitude towards learning, increase their academic achievement and consequently improve their performance at the Senior Secondary School Certificate Examination. Also Public schools were selected for the study because of the perceived large school enrolments in Lagos State, associated with public schools.

The emphasis was on the impact of Emotional Learning System and Peer Mentoring on the emotional intelligence skills and academic achievement of senior secondary school students in Lagos, Nigeria. The variables considered were academic achievement and emotional intelligence skills which include interpersonal skills, leadership skills, self management skills and intrapersonal skills.

1.9 Operational definition of terms

Academic Achievement

An academic achievement is the outcome of test examinations given to the students by their teachers in various subjects. In this study it is a measure of high or low academic performance of Senior Secondary School three students. Academic achievement was measured by participant's scores in the Achievement Test.

Emotional Intelligence Skills

Emotional intelligence skills are the ability to acquire and apply knowledge from your emotions and the emotions of others in order to make good decisions about what to say or do, or not to say or do. In this study Emotional intelligence skills are affective skills that are used in the competencies of interpersonal skills, leadership skills, self management skills and intrapersonal skills, to enhance emotional intelligence. Emotional intelligence skills were measured by participant's total scores in the Exploring and Developing Emotional Intelligence Skills Questionnaire.

Interpersonal skills

Interpersonal skills are the skills that a person uses to interact with other people – sometimes referred to as 'people's' skills or communication skills. In this study it is a set of variables (Assertion, Anger and Anxiety management) pertaining to communication, including verbal and nonverbal communication. This skill was measured by participant's scores in interpersonal skill in the Exploring and Developing Emotional Intelligence Skills Questionnaire.

Intrapersonal skills

Intrapersonal skills are defined as the ability to be reflective and access one's inner feelings. In this study, it is a set of variables (self esteem and stress management) that enhances self understanding. This skill was measured by participant's scores in intrapersonal skill in the Exploring and Developing Emotional Intelligence Skills Questionnaire.

Leadership skills

Leadership skills are defined as the ability to motivate a group of people toward a common goal. In this study it is a set of variables (Social Awareness, Empathy, Decision Making and Positive Influence) that enhances the ability to positively impact, persuade, influence others and in general make a positive difference. This skill was measured by participant's scores in leadership skill in the Exploring and Developing Emotional Intelligence Skills Questionnaire.

Self-management skills

Self-management skills are defined as the ability to effectively direct ones own activities toward the achievement of ones set objectives or goals. In this study it is a set of variables (Drive Strength, Commitment, Ethics, Time Management, and Positive Change) that enhances your management of yourself which includes your performance and productivity. This skill was measured by participant's scores in self-management skill in the Exploring and Developing Emotional Intelligence Skills Questionnaire.

Peer mentoring:

Peer mentoring is a form of mentoring that takes place in a learning environment, such as schools. Peer mentoring are mentoring relationships that consist of participants who are closer in age to one another or belong to similar peer groups. In this study, peer mentoring is the intervention programme which involves the relationship between mentors and mentees in which the individuals are class mates and belong to the same peer group.

Emotional Learning System:

Emotional learning system is a system that uses person-centred assessment, reflection, constructive thinking, and skill development lessons to guide student learning of emotional intelligence skills. It enables one to learn to choose behaviour based on constructive and critical thinking. In this study it is one of the intervention programme.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This study basically focuses on emotional intelligence skills and academic achievement. For a proper appreciation of the study, relevant literature reviewed are organized under the following sub-headings:

- Emotional Intelligence Overview
- Emotional Intelligence Skills
- Gender Difference and Emotional Intelligence
- Emotional Intelligence and Academic Achievement
- Studies on the Effectiveness of Emotional Learning System
- Studies on the Effectiveness of Peer Mentoring
- Emotional Intelligence and Intellectual Intelligence
- Emotional Intelligence Curriculum
- Emotional Intelligence and Teacher Education
- Theory of learning-Cognitivism
- Appraisal of literature review

2.1 Emotional intelligence overview

The term 'emotional intelligence' was coined in 1990 by Yale psychologist Peter Salovey and John D. Mayer, who together developed a model of intelligence reflecting the connection of emotions to thinking. They defined emotional

intelligence, as involving the ability to perceive accurately, appraise and express emotion; the ability to access and \ or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge and the ability to regulate emotions to promote emotional and intellectual growth (Mayer and Salovey, 1993).

Salovey and Mayer (1990) described emotional intelligence as comprising capacities divisible into four broad classes including: 1) perception, appraisal, and expression of emotion: 2) emotional facilitation of thinking: 3) understanding and analysing emotions; employing emotional knowledge; and 4) reflective regulation of emotions to promote emotional and intellectual growth. These classes or branches are arranged from more basic psychological process to higher, more psychological integrated processes. The first branch or most basic class involves the accuracy with which individuals can identify emotions and content. Infants and young children learn to identify their own and other emotional states and to differentiate among those states. The infant distinguishes emotional facial expressions and responds to the parent's expressions (Mayer and Salovey, 1993)

The next branch of Salovey and Mayer's model, Emotional Facilitation of Thinking, concerns emotion acting on intelligence; it describes emotional events that assist intellectual processing. Emotion serves as an alerting system essentially from birth. Emotions thus operate from the start to signal important changes in the person and the environment. As the person matures, emotions begin to shape and improve thinking by directing a person's attention to important changes (Mayer and Salovey, 1993). A second contribution of emotion to thinking is to generate emotions 'on

demand' so that they can be better understood. In the growing person, the ability to generate feelings assists with planning. The individual can assist anticipate how taking a new job or encountering a social criticism might feel. Mayer and Salovey called this a processing arena in which emotions may be generated, felt, manipulated and examined so as to be better understood. The more accurately or realistically such an emotional theatre operates, the more it can help the individual choose alternative life courses (Mayer and Salovey, 1993).

The third branch of Mayer and Salovey's model concerns the ability to understand emotions and to use emotional knowledge. Soon after the child recognises emotions, he or she begins to label them and perceive relations among those labels. The child begins to recognize similar differences between liking and loving, annoyance and anger, and soon parents teach children about emotional reasoning by linking emotions to situations (Mayer and Salovey, 1993).

Mayer, Salovey and Caruso (2000) first developed a measure of emotional intelligence called the Multifactor Emotional Intelligence Scale (MEIS) and later the Mayer, Salovey & Caruso Emotional Intelligence Test (MSCEIT) – The MSCEIT is designed to yield an overall emotional intelligence score, as well as subscale scores for perception, facilitation, understanding and management. Each branch includes several subtests. An example of a task for perception is to view a design (or face or landscape) and report the amount of emotional context in it such as how much happiness or sadness. Mayer, et al (2000) argued that defined as intelligence, emotional intelligence can be measured reliably.

Bar-On (1996) is of the opinion that Emotional Intelligence reflects our ability to deal successfully with other people and with our feelings. He developed the Bar-On Emotional Quotient Inventory (EQ-i) after seventeen years of research. And this inventory is the first scientifically developed and validated measure of emotional intelligence that reflects one's ability to deal with daily environmental challenges and helps predict one's success in life including professional and personal pursuits.

The Bar-on EQ-i is divided into five sections and intended to measure 'an array of non-cognitive abilities, competencies and skills that influence one's ability to succeed in coping with environmental demand and pressure (Bar-on, 1977 as cited in Mayer et al 2000). The sections are as follow:

1. Intrapersonal, which includes measures of self-awareness, Assertiveness, Self-regard, Self-actualization and independence.
2. Interpersonal includes empathy, interpersonal relationship and social responsibility.
3. Stress Management includes, problem solving, reality testing and flexibility.
4. Adaptability includes, stress tolerance and impulse control.
5. General mood includes happiness and optimism.

A youth version (EQI: YV) for children between 6-12 years of age and adolescents from 13-17 years of age was normed in North America on approximately 9,500 individuals (Bar-on and Parker, 2000). Bar-on examined the effect of age, gender and ethnicity on EQ-i score with respect to gender. They found no differences appeared between males and females with respect to overall emotional and social

competencies. Significant gender differences were found for some components. Females show stronger interpersonal skills than males, but males show stronger stress management skills and were more adaptable. Men were shown to have better self-regard, more independence, to cope better with stress, to be more flexible and to be better problem-solvers and more optimistic than women (Bar-on and Parker, 2000).

Goleman (1995) defines emotional intelligence as knowing what one's feelings are and using that knowledge to make good decisions. It is also the ability to maintain hope and an optimistic outlook in the face of disappointments and difficulties. He also defined emotional intelligence as empathy, which is awareness of the feelings of others. According to Goleman (1995), empathy develops as a result of experience and interaction with others.

Goleman (1998) developed the Emotional Competence Framework model that is organized around personal and social competencies. Personal competence is defined as how people manage emotions and has five major areas: Self-awareness, self-regulation, motivation, empathy and social skills.

Self-awareness is involved with one's ability to self-evaluate and to acknowledge accurately personal strength and weaknesses. Goleman list three categories of emotional intelligence relative to self-awareness: emotional awareness, accurate self assessment and self confidence. Together these categorised the ability to recognize emotions and feelings along with their effects on others, to know and understand

ones strength and weaknesses, and to recognize a sense of one's worthiness (Goleman, 1998)

The area of self regulation is defined as one's ability to control and regulate his/her impulses, feelings and emotion. Five self regulation areas include self control, trustworthiness, conscientiousness, adaptability and innovation. These factors include the ability to be in control of one's destructive emotions, to be honest and to accept ownership of performance, flexibility and creativity respectively (Goleman, 1998).

Empathy as described by Goleman is an awareness of the feelings, needs and consciousness of others. These categories include understanding others, developing others, service orientation, leveraging diversities and political awareness. Empathic characteristics are involved in sensing others feelings, aiding others in their goals, empathising with the customers' needs, developing skills of different types of people and being aware of positions and power in work relationship (Goleman, 1998).

Social skills are the interpersonal areas related to emotional intelligence. Such skills are conceptualised as the ability to influence others in a productive way. Goleman defines these sub-categories for social skills as influence, communication, conflict management, leadership, change catalyst, building bonds, collaboration and cooperation, and team capabilities. Together these soft skills include abilities for persuasion, effective listening, disagreement resolution, leadership, creative planning, effective working with others towards organisational goals and assistance to groups as a contributing member (Goleman, 1998).

Goleman presented a case study of two individuals considered academically successful. The first student obtained a perfect score on a college admission examination. He lacked motivations in school and reportedly skipped classes, dropped out for a period and finally graduated after ten years. Since graduation, he has been employed as a one-man computer consulting company. A second student, at age eighteen finished Oxford with a doctoral degree in Theoretical Mathematics. Being small in stature and twice as smart as everyone else, he was often taunted and bullied but refused to back down. He clearly possessed assertiveness in addition to intellect, and this combination of intellectual and emotional intelligence may explain his success. Today he heads one of the most prestigious Mathematics Departments of a top university.

Estimates on the impact of intellectual intelligence on performance showed that intellectual intelligence correlates 10-25 per cent with how well people perform in their careers; consequently, 75-90 percent of the variance is related to other factors (Goleman, 1998). The study by the American Society for Training and Development of benchmark practices along large companies and corporations, found that in the fields of law, medicine, teaching and business, the impact of intellectual intelligence resulted in zero or negative correlation with eventual career success (Goleman, 1998).

Boyatzis, Goleman and Rhee (2000) developed an informant measure of emotional intelligence which yields information about a person as perceived by others. This model of emotional intelligence is based on the competencies that enable people to demonstrate intelligent use of their emotions in managing themselves and working

effectively with others. The Emotional Competence Inventory (ECI) that was developed from an earlier model that focussed on managers, executives and leaders, was expanded for further applicability across all occupations and life setting. Goleman added a self-report as well as an informant-report to the measure. The ECI is divided into the four clusters of self-awareness, social-awareness, self-management and social skills.

Cooper and Saway (1997) provided evidence and extensive experience that support the value and necessity of emotional intelligence in developing leadership ability and successful organizations. In *Executive EQ*, Cooper defines emotional intelligence as "the ability to sense, understand, and effectively apply the power and acumen of emotion as a source of human energy, information, connection, and influence." In this model, the four cornerstones of emotional intelligence are Emotional Literacy, Emotional Fitness, Emotional Depth, and Emotional Alchemy.

Finegan (1998) states that the concept of emotional intelligence is closely related to other theories which involved emotional identification, reasoning and behavioural response to environmental stimuli, all included in Weschler's definition of the nature of intelligence. Finegan (1998) reports that empirical studies in the area of affective and cognition have been conducted to measure social intelligence. However, several problems have arisen including the difficulty in distinguishing the social intelligences both theoretically and empirically from other intelligences and the lack of instruments that yield valid scores. According to Finegan (1998), much of the work that has been conducted so far in the area of emotional intelligence involves scale development in areas such as emotional perception, emotional expression, empathy

and motivation. The construct that underlie them and the means by which they are operationalized in portions is what is thus far known as emotional intelligence. Finegan (1998), states that theorists are interested in identifying the mental processes which involve emotional information including appraising, expressing and regulating emotions in self and others and using emotions in adaptive ways.

A core aspect of emotional intelligence is the collection of abilities involved in perceiving emotions in a manner which is similar to the perception of other people, and the abilities to appraise and express emotion in order to use them for motivational purposes or for the purpose of making a decision, are related skills present in healthy people (Finegan, 1998). An important finding from Finegan's work suggests that people display an ability to accurately predict consensual emotional content in novel stimuli, indicating that they understand others thought processes or they understand general universal rules for extracting emotion that extend beyond facial expression. The results suggest that 'aspects of emotional intelligence appear to be abilities that can be measured through the use of tasks'; therefore, individuals with difficulties in interpersonal relation might not suffer from attitude problems, but from deficit in actual abilities which can be assessed and ameliorated.

In another study, 'Emotional Attention, Clarity and Repair- Study II', Finegan (1998) sought to describe a measure of individual differences in the ability to attend to clarity and manage emotions. The development of these measures was based on the works of Mayer et al (2000), in which people demonstrated a continuous process associated with moods whereby they reflected upon, monitored, evaluated and regulated their feelings, a process called meta-mood experience. According to

Finegan (1998) Salovey developed the Trait Meta-Mood Scale (TMMS) designed to assess relatively stable individual differences in people's tendency to attend to their moods and emotions, and discriminate clearly among them and regulate them.

The Trait Meta-Mood construct consisted of forty-eight items extracted from a larger item set that represent five-item domain including: (a) clarity of emotional perception, which represented the ability to understand one's mood, (b) strategies of emotional regulation, which involved the degree to which individuals moderate their mood, (c) integration of feelings which refer to questions about relationships between feelings and thoughts, (d) attention to emotion which reflected the degree to which individuals notice and think about their emotions and, (e) attitudes about emotions, which involve subjects' perception of the importance of emotional experiences.

Other studies as reported by Finegan (1998) have produced evidence that the concept involved in Meta-Mood experience and emotional intelligence can be used to organize the various construct. People who attend to their feelings also attend to other aspects of their conscious experience and that people who are clear about the emotions they are experiencing tend not to be depressed or experience ambivalence in the amount and quality of emotion they express.

Another study reported by Finegan (1998) was "Accurate Identification of Emotion – Study III" by Mayer et al (2000). The researchers examined agreement level between target and group consensus as criteria for the identification of an emotion. The measure used for the first two aspects of the study was the Emotional Accuracy

Research Scale (EARS), a performance skill developed by the researchers to examine an individual's accurate identification of another's emotion. When completing the EARS participants judge the emotions of a target person experiencing particular thoughts in eight thought samples, and indicate which of the twelve alternatives within a given dichotomous item represents the emotion that the target felt more strongly. In order to identify the personality dimension associated with emotional intelligence, the study employed self-reported measures of empathy, defensiveness and intelligence. The researchers suggested that the ability to identify emotions in thoughts is central to an individual's well-being. They contend that the ability to predict emotions from thoughts will invariably give an individual a social advantage in certain life tasks and profession, which require emotional intelligence.

Finegan (1998) states that possessing the abilities of emotional intelligence can lead to achievement from the formal education years of the child and adolescent to the adult competency in being effective in the work place and in the society. According to Finegan (1998) the ability to assess one's own and another's emotions and to use these processes in a behaviourally adaptive ways expresses the critical aspects of motivation and emotional intelligence. She further states that although, motivation and emotional intelligence are contrasting in nature, an individual must possess the emotional information-processing abilities as well as mental attitudes in order to solve problems. These abilities in turn help individual decide upon options for motivating themselves to achieve.

Epstein (1998) defines emotional intelligence in terms of cognitive thinking or the 'experiential mind'. According to Epstein, there are different ways of discussing

intelligence and the most recognised way of conceptualising intelligence is based on experiential or rational thought. Experiential or emotional intelligence can be measured and defined by an assessment called the Constructive Thinking Inventory (CTI). Results of the CTI are closely related to satisfaction in relationships, career, mental and physical health. There are five constructs of emotional concept and two measured level of coping that are assessed by the CTI. The five constructs are: Global Constructive Thinking, Naive Optimism, Esoteric Thinking, Personal Superstitious Thinking and Critical Thinking: and the two areas of coping are Behavioural Coping and Emotional Coping.

Behavioural and emotional coping are believed to be the most important subset of the CTI. These coping measured level quantify the ability to deal with or react to the external world. Emotional coping can be defined as one's ability to remain calm and maintain a low level of stress and sense of peace (Epstein, 1998). Moreover, respondents are not overly concerned by the opinion of others and perceived criticism as a helpful evaluation of their skills. Respondents tend not to dwell on past failures and not preoccupied with future concerns. Behavioural coping is the ability to function as risk takers and positive thinkers. Individuals high in coping skills believe their actions can and do influence the future. In addition little energy is spent towards revenge or punishing others because of past incidences. Effective behavioural coping occurs in individuals who are self accepting and spend little time on self punishing behaviour.

The Global Constructive subset includes items from the other six categories and the aggregate defines an individual as problem solving oriented instead of reactive

driven. The problem solving person has a positive outlook, neither over or under evaluates him/herself and seldom labels or prejudices others. Naive optimism is described by an attitude of overdrawing positive conclusion based on limited experiences. For example, a naive optimist because of experience assumes he/she will own a successful business. Optimist tends to generalise success or positivism to areas outside the realm of reality. They often plan only for success and neglect anticipation of potential failure.

Esoteric thinkers relate to beliefs about unusual rules or events as operational ways of thinking. Esoteric thinking is related in some degrees to socioeconomic status, national origin or ethnic culture. For example, it is not logical to belief that a black cat crossing one's path will bring bad luck or that putting an egg under the bed will drive away bad spirits. High scores on esoteric thinking are related in a negative way to the areas of constructive thinking and are inductive of destructive thinking.

Personal superstitious thinkers believe that thoughts may affect outcomes. For example, personal superstitious thinkers hold a belief that confidence will prevent one from getting a highly desired job. Personal superstitious thinking is in opposition to positive thinking- the belief that excitement and confidence lead to a more successful job seeking interview.

Categorical thinking pertains to a frame of reference in which thinkers believe things are right or wrong, black or white, and us or them. This style of thinking is rigid and not easily swayed to different point of view. Individuals thinking categorically may

believe there is one and only one way to do something or that their way of working is the only way something can be done.

Epstein (1988) presents a case for each person having two minds: the experiential and cognitive/rational mind. The experiential mind is closely identified and measured by the CTI. The experiential mind and the cognitive mind work in harmony unless unusual situations are presented. An example of disharmony between the experiential mind and cognitive mind occurs when one's irrational fear dominates one's thought and behaviours even though the fear is not reasonable. The experiential mind, a new concept to neuropsychology is related to reward and punishment. The experiential mind has evolved over millions of years. One's experiential mind directs the emotional mind towards success or failure. Epstein (1998) has identified thirteen characteristics of the experiential mind which are believed to be associated closely with emotional intelligence and are central to Epstein's conception of CTI.

Epstein's Characteristics of the Experiential Mind

Learning Directly from Experience:

Learning from experience creates characteristics that are important because this learning influences the thinking of the intellectual mind. Past experiences associated with fear (when recollected) invoke similar automatic responses to the actual event, giving impetus for accelerated heart rate and rapid breathing even though the danger event is imagined. A similar learned effect may occur as individuals complete

a course examination when a high degree of pressure is felt and success is perceived as 'life and death'.

Terms of Associations:

Ability to make associations historically has been associated with cognitive intelligence. Association as defined in experiential terms is the ability to make decisions in the present times based on prior experiences. One often relates and reacts to people based on relations and reactions to people in the past. One may have strong feelings towards strangers because they remind one of others from past encounters. If the past encounter was harmful, it may elicit strong emotions towards people encountered in new but similar ways.

Action Orientation:

Thinking quickly results in immediate action as opposed to consideration in the rational mind and is believed to be closely related to the flight or fight response which is needed for survival. There are times and events requiring reaction instead of contemplation. An example: a car directly approaches a person who needs to get out of the way. Instead of calculating the angle and speed of the approaching vehicle, the pedestrian steps to the side and avoid, a possible fatality.

Working with Emotions:

Emotional issues are central to experiential theories and emotional issues are interrelated with perception of events. Human experiential minds organize emotions in a way intended to diminish pain and create pleasure. Situations are interpreted

from the emotional frame of reference by the level of arousal. Problems such as inappropriate expression of emotions arise when strong feelings are created that are not situated to the immediate situation. A characteristic of directing actions based on past connections link actions and emotions. Often individuals are unaware of why they act or behave in a certain way. This inability to understand one's reaction lies in the failure to understand this link between experience and perception of current situations that triggers emotions.

The experiential mind perceives the world in terms of animations, images and pictures. These images are retrieved with significantly more impact than words. One's experiential mind is able to process with incredible speed pictures and images, rather than retrieving words and numbers. Words and numbers break down concepts in to part where imageries or mental pictures are presented as complete ideas, feelings or situations. Within the educational arena, especially at the primary level this concept is important and could be included to diversify instructions.

Epstien (1998) describes the automatic emotional process as preconscious, whereas to some the automatic emotion simply happens. Few individuals understand that thought precede emotions and most simply have an awareness of emotions. Failing to understand that human thought precede emotions, individuals are often unable to control inappropriate or troublesome emotions.

Holistic Assessment:

Holistic refers to a generalization or overall assessment of a situation (seeing the big picture instead of the parts). Holistic assessments help one to make decision with

expediency. One's ability to see the big picture is critical especially at the higher level of engagement. A CEO or a School Administrator needs the ability to understand the larger view instead of that of a single class or groups of students. Often a situation demands quick action instead of an elaborate assessment of the situation and a detailed plan of action.

Self Evident Validity:

Self evident validity is the belief that our opinions, thoughts and feelings are accurate and valid. This ethnocentric belief is convenient for the individual, for self-centredness does not require one to reanalyze beliefs or feelings and create a situation in which action can be taken rapidly. Problem is created when one aggressively discriminate based on prejudice.

Categorical Thinking:

Thinking categorically instead of paying attention to details is a way of dividing the world or concepts into convenient portions. An example of categorical thinking is illustrated when an educational system divides curriculum into convenient subjects like chemistry and biology. A concern with arbitrary categories or groups is a loss of fine distinction that may lead to mistake. From the emotional perspective it may lead to quick, unchallenged perception about individuals based on concepts of the group.

Outcome not Process:

Another key concept in the experiential mind is the attention given to the outcome and lack of focus on the process of problem solving. It is important to pay attention

to the process that is used to solve the problem so that when poor outcome result, one can analyze the process. Good results usually produce good feelings and the mind creates association with an inventory of successes with no reservation or caution for bad outcomes. In that outcome, one often find someone to blame for the failure instead of reflecting on the problem solving process used. Accepting personal responsibility for the poor outcome is important so as not to blame others unjustly for failures.

Change Orientation:

The quality of personal changeability in individual is described by Epstein, and these 'multiple personalities' are demonstrated depending on situation or feeling. Personal changeability accounts for inconsistency in situations and relationships that are common to humans. As emotions like fear and anger motivate individuals towards the precondition states of flight or fight and withdrawal or engagement, the individual may act inconsistently or differently depending on the situation.

Difficult Change:

Difficulty in changing a person's belief is the final construct of the experiential mind. These beliefs once formed by an individual are slow to change if when confronted by evidence. Humans create a model or reference and to change part of the model requires a reconstruction of the whole model. Such reasoning assumes that there are two minds, the emotional mind and the intellectual mind. The emotional mind may believe something that is not confirmed or validated by the cognitive mind. Prejudice is an example of this conflict between the emotional and cognitive mind.

Perhaps, one believes that all humans are of equal value but that persons of certain ethnic background are inferior. Beliefs formed via emotional experiences are unquestionable and are difficult to change emotionally with the presentation of cognitive information.

Epstein's elements are critical to the formation of a conceptual model of emotional intelligence; otherwise, comparison to intellectual intelligence or IQ cannot be made. The experiential mind, via experiences associated with the emotional state as described, presents an understanding of the component of emotional intelligence similar to verbal or performance subtest of the Wechsler intelligence scale IQ test. If one envision emotional intelligence as defined by the components of Epstein's experiential mind, then a parallel or comparison to IQ based on Wechsler intelligence subtest can be drawn (Potter, 2005)

According to Weisenger (1998) emotional intelligence is also defined as " the intelligent use of emotions: one intentionally makes one's own emotion work for one by using them to help guide one's behaviour and thinking in ways that enhance one's result". Weisenger further states that emotional intelligence was both intrapersonal (helping-yourself) and interpersonal (helping others) skills. He believes that emotional intelligence entails: (1) high self-awareness- one is able to monitor oneself, observe oneself in action to influence ones actions so that they work to benefit one. Managing ones emotions means understanding them and using that understanding to deal with a situation productively; (2) Self motivation- when one is self- motivated, one is able to begin a task, stick with and complete it despite any obstacles that may be faced during the process; (3) Communication skill- which

establishes a connection with another individual in forging a relationship. Interpersonal skills are essential to relating well to others and making a connection with them to exchange meaningful and appropriate information; and finally (4) leadership skill - the ability to help others manage their emotions, communicate effectively, solve their problems, resolve their conflicts and become motivated.

Nelson and Low's work with Emotional intelligence began with *Personal Skill Mapping* in 1975 which predates the term emotional intelligence coined in 1990. Nelson & Low (1998) defined 'Emotional Intelligence' as a set of specific skills and concepts that are measurable, learnable and once acquired can be utilized for success not only in academics but in other aspects of life.

Nelson and Low (1998) developed a model (Exploring and Developing Emotional Intelligence Skills) for assessing and developing emotional intelligence skills which organizes emotional skills into four areas of emotional competencies. The first competency area is the interpersonal communication under stress, which involves the importance of communication and emotion control in building and maintaining healthy and productive relationships. They believe happiness, well-being and achievement are connected to relationships and interpersonal skills. This competence includes emotional skills of (a) assertion (b) anger control and management (c) fear control and management. The second competency area is Leadership and it involves the importance of developing responsible leadership centred on the person and leading in positive ways when working with others. Emotional skills in this area include (a) Comfort (b) Empathy (c) Decision making and (d) leadership. The third area is Self-management in life and career which

involves self direction and management to achieve meaningful personal and career goals. Emotional skills include (a) Drive strength (b) Time management (c) Commitment ethics and (d) Positive personal change. The fourth personal competency area is intrapersonal development which involves learning and developing positive beliefs, attitudes and views of self to achieve personal well-being and health. Emotional skills in this area include a) Self-esteem and (b) Stress management.

2.2 Emotional intelligence skills

Emotional Intelligence skills as determined by Nelson & Low (1998) constitute four conceptual groups: Interpersonal, leadership, self-management, and intrapersonal. Emotional intelligence comprises thirteen areas: Assertion, Anger, Anxiety Management, Comfort, Empathy, Decision Making, Leadership, Drive Strength, Commitment, Ethics, Time Management, Positive Change, Self-Esteem and Stress Management. A conceptual model of skills of emotional intelligence is provided below for clarity:

<u>INTERPERSONAL</u>	<u>LEADERSHIP</u>	<u>SELF-MANAGEMENT</u>	<u>INTRAPERSONAL</u>
Assertion	Comfort/Social Awareness	Drive Strength	Self-Esteem
Anger	Empathy	Commitment Ethics	Stress Mgt
Anxiety	Decision Making	Time Management	
	Leadership/Positive Influence	Positive Change	

Conceptual Model: Emotional Intelligence Skills (Nelson & Low, 2003)

2.2.1 Interpersonal skills

A major component of personal satisfaction, academic achievement and career success is the ability to establish and maintain positive and healthy interpersonal relationships. Parents, friends, peers, teachers, mentors, and other professionals have positive influences on students' emotional and academic development. The quality of interpersonal relationships in school, career, and in life strongly affects one's ability to develop and complete meaningful academic and career goals (Nelson & Low, 2003). Effective communication (Assertion) and Emotional Self-Control (Anger and Anxiety management) relate to effective interpersonal emotional intelligence. These interpersonal skills allow individuals to effectively work with groups and teams.

Jackson, Fritch, Nagasaka & Gunderson, (2002) in a study assessed the extent to which variables associated with self-presentation (perceived depicts of interpersonal competence, heightened expectations of rejection) approaches to shyness and social support mediated the association between shyness and lowliness. Results from the study suggested that low levels of interpersonal competence predicted reductions in social support.

Another related study using training techniques – Emotional Learning System and Group Counselling, compared interpersonal communication skills, study habits, attitudes and academic achievement of twenty three female and sixteen male students. Students who participated in emotional learning system technique showed better level of interpersonal communication skills and improved grade point averages (Nelson & Low, 2005).

Ubangha, Osarenren and Ajenu (2008) conducted a study on Emotional intelligence, Marital Communication and Conflict Resolution Skills as predictors of marital satisfaction among couples in Lagos Metropolis. Results revealed a high relationship between marital satisfaction, marital communication, conflict resolution strategies and emotional intelligence. Based on these results it was recommended that couples need to acquire interpersonal skills for conflict resolution, learn to communicate effectively and gauge their emotions and those of others.

Assertion

Assertion is one's ability to communicate in a directly open style that conveys both cognitive and emotional messages (Nelson & Low, 2003). This important

communication skill allows individuals as communicator to respect his/her rights as well as the rights of others involved in the dialogue. Assertion is essential to constructively express and communicate strong emotions like anger, fear, and sadness without hurting oneself or others. If the skill of assertion is not learned and developed, individuals are left with only two forms of verbally expressing their thoughts and feelings, which are aggression and deference (Nelson & Low, 1999).

Kern & Paquette (1992) in a study examined the importance of negative assertion and its effects on long-term, naturalistic relationships. Results suggested that higher levels of assertive behaviour were associated with perception of greater competency and likeability.

Another research study examined the academic self concept of some undergraduate college students. Results of this research concluded that assertion and time management appeared to be areas of concern when addressing the above mentioned skills (Harrison, 1993)

Anger Management

Anger Management is the ability to express anger in a constructive way in relationship to oneself and others. The skill of anger management allows individuals to communicate with others without violating, overpowering, dominating, or discrediting the other person's rights, thoughts, feelings or behaviours. Anger management is the emotional skill that specifically, targets and constructively deals with aggression in communication under stress (Nelson & Low, 2003). Individuals must develop and improve the skill of anger management in order to achieve

personal, academic and career success without this powerful emotional intelligence skill, individuals will continue to harm themselves as well as others.

Heinze (1995) studied men's and women's model of anger management. The results suggest that males and females use situational cues in their framework of anger expression. Females report using internal feeling cues to determine whether or not to express anger, whereas males do not. Males report that they express anger more when they perceive anger and aggression in their social environment whereas females do not, unless they are also feeling angry. Females report that they suppress anger less when they perceive their social environment as supportive.

Bickmore (1997) stated that conflict resolution can be a school-based learning opportunity to help influence student's development of knowledge on how to handle aggression and violence. He also stated that important opportunities exist to teach anger management in the classrooms dealing with everyday situations in school. Students who possess positive liberty can develop skills necessary to participate in nonviolent management of aggression as citizens.

Anxiety Management

Anxiety management is the ability to effectively deal with anxiety (fear) and constructively communicate with others and to situations (Nelson & Low, 2003). When the skill of anxiety management is not present, people experience high levels of deference. Deference is the degree to which an individual demonstrates a communication style that is indirect, self-inhibiting, self-denying and ineffectual of the expression of thoughts, feeling and behaviours. In essence, deference involves

the emotion of fear that must be understood to employ the anxiety management emotional intelligence skill.

Aletan (2007) conducted a study on "social relationships and manifest anxiety among freshmen in tertiary institutions in Lagos State". The outcome of this study shows that the level of involvement in student - student relationship has significant influence on student's manifest anxiety and very important in maximally reducing level of anxiety among students.

A study examined whether the use of anxiety reduction and mathematics study skills techniques incorporated in a basic algebra course would lower college students mathematics anxiety and increase achievement. Results of the study indicated a significant reduction in anxiety and increase in achievement for the treatment groups. A Maths Anxiety Rating survey was used to determine the levels of anxiety (Miller, 2000).

2.2.2 Leadership skills

Effective leadership is the ability to understand other people's thoughts, needs, values and goals. The skill of leadership allows individuals to acknowledge the difference of individuals and be able to effectively and accurately communicate the differing viewpoints. When this process is accomplished, individuals have demonstrated emotionally intelligent leadership (Nelson & Low, 2003).

In a Five Star Leadership study, a triachic value analysis diagram for practicing effective leadership shows emotional intelligence skills are at the heart of each of their value diagrams of Knowing Self, Influencing Others, and Accomplishing Tasks

(Townsend and Beghardt, 1997). Leadership's acceptance seems almost universal in defining emotional intelligence. Nelson & Low (2003) explain leadership to include the following areas, Comfort (Social Awareness), Empathy, Decision Making and Leadership (Positive Influence).

Comfort (Social Awareness)

Comfort is described by Nelson & Low (2003) as the ability to positively impact others and develop trust and rapport in interpersonal relationships. Comfort involves verbal and non-verbal communication. Developing the skill of comfort will allow people to begin a process of establishing and maintaining strong and healthy relationships and ensure their personal, academic and career success.

A study by Silvia & Duval, (2001) assessed whether failure (a negative event) would attribute to a similar negative external target. Results suggested that participants perceived the negative group as being responsible for their failure relative to self and positive group member.

Empathy

Empathy is the ability to understand and constructively respond to the expressed feelings, thoughts and needs of others. The skill of empathy involves demonstrating to the sender that he/she is being heard and understood. Empathy allows the sender to feel that his/her feelings are understood without any reservations. Sender feels completely comfortable sharing and expressing true feelings without the threat of being judged. Empathy is associated with words like trust, acceptance, caring and respect for healthy relationships. Feelings of safety relationship are by-products of

empathy, because of the ability to put one's own feelings and thoughts aside to accept and value the other person's frame of reference (Nelson & Low, 2003).

Yates (2000) in a study examined the relationship between emotional intelligence and health habits of male and female college students. Participants answered questions of Demographics, Emotional Intelligence Survey and Health Habit Survey. In the Emotional Intelligence factor, empathy was revealed as the strongest and the only statistically significant predictor of health habits.

Decision Making

Decision making skills are the ability to use problem solving techniques and conflict resolution strategies to solving personal problems. Decision-making skills require the use of a systematic process to address problems that occur in everyday life (Nelson & Low, 2003).

Most problems are viewed as barriers or blocks that hinder our progress towards personal goals and positive outcomes. Problems are seen as things that get in the way of happiness and the pursuit of a healthy and productive life.

The ultimate goal therefore is to eliminate problems. However, problems will never be eliminated. A more constructive view is to see problems as challenges that will have positive solutions and as opportunities to actively mature in life (Nelson & Low, 1999).

Hamdi, (1998) carried out a study to investigate the relationship between problem-solving skills and depression among first and second year college students. Results

suggested that non-depressed student averages were significantly higher on problem-solving scales than the depressed students. General orientation and decision making variables accounted for twenty-nine percent of the variance in depression among the college students.

Positive Influence

Positive Influence is an action-oriented demonstration of self-empowerment, interpersonal and goal achievement skills. The skill of leadership is a set of personal and goal directed behaviours that have positive consequences which develop and gain momentum to positively influence other people. Positive Influence is self-directed, based on internal values and characteristics that are observable by others and interpreted as self-confident behaviours. These observable and meaningful behaviours have a significant impact on others which draw them to follow and model behaviours (Nelson & Low, 2003).

A study described the personality characteristics of failing university students. Results suggested that certain personality traits relate to academic failure. Data encouraged consideration of the existence of other personality traits which limit success. One of the traits that contributes to academic failure is poor Positive Influence (Sanchez, Rejano & Rodriguez, 2001)

2.2.3 Self-Management skills

Self-management skills are central to high achieving and productive students, who learn how to motivate themselves, learn valuable time management skills, complete tasks and never give up, and are flexible to positively adjust to an ever changing

environment. The underlying notion to self-management skills is that if people accept responsibility for their own learning and success, they will improve their achievement. The ability to be the best student or person one can be lies in the cognitive domain of the mind. The emotional mind provides the energy to achieve one's personal goals and the personal satisfaction one feels when they are accomplished (Nelson & Low, 2003). Self-Management skills sub-groups include: Drive Strength, Commitment Ethic, Time Management and Positive Change.

Drive Strength

Drive strength is one's ability to accomplish goals and activities resulting in self fulfilment and attainment of purpose. Drive strength is the understanding and motivation behind the principles of setting goals, objectives and activities. The most important aspect of action-goal-setting is defining what is meaningful, valuable and important to self. If one develops action goals that are meaningful, the rewards for completing the goals have a strong impact on creating positive feelings. Action goal setting is a way to avoid boredom or depression and a sure way to guarantee happiness and success (Nelson & Low, 1999)

A study investigated the effects of professors' instructional methods and university students' conceptual levels of achievement and motivation in a course designed to teach Computer Technology. The study concluded that matching high-conceptual level learners with student-centred instruction and low-conceptual-level learners with teacher-centred instruction enhanced students' achievement and motivation. Overall, students exposed to student-centred instruction demonstrated greater motivation

than did students exposed to teacher-centred instruction (Hancock, Bray & Nason, 2002)

Diperna (2000) examined the variables that predicted academic achievement. The variables explored were prior achievement, motivation, interpersonal skills, study skills, participation and behaviour problems. Results suggested that only motivation and prior achievement demonstrated large total effects with current academic achievement. Motivation and prior achievement are interrelated.

Time Management

Time management is the ability to organize daily tasks in a personal productive time schedule and use it effectively for task completion. Effective time management allows people to manage time rather than responding to the demand of time. Action goal setting will help with effective time management to prioritize and develop a process to complete set tasks. Effective time management is self managed and self-directed behaviour that allows one to complete tasks with less effort, making one's time experience manageable. Time is our greatest resource and is the same for everyone; how we manage it will determine how successful we are in providing harmony to our thoughts, feelings and behaviours (Nelson & Low, 2003)

Gortner & Zulauf (2000) in a study examining factors associated with academic time use and academic performance of college students, results revealed that time management skills and study time were positively associated with quarter grade point averages for college students. Grade point averages increased only 0.025

points per additional study hour per week, suggesting that the study time must increase substantially for grade point to improve noticeably.

In another study, students enrolled in a college study skills course, reported procrastination in three critical tasks, which are studying for examination, writing term papers and keeping up with weekly reading. Results report that procrastination scores were positively correlated with the number of perceived barriers to their academic success. The problems associated with achieving academic success included time management and lack of academic preparation for college (Kachgal, Hansen & Mutter, 2001).

Commitment Ethic

Commitment ethic is an emotional intelligence skill that gives one the ability to complete tasks, assignments and other responsibilities in a dependable and satisfactory manner. People who have high levels of commitment ethic possess an inner self-direction, self-motivation and persistence in completing tasks, assignments and/or responsibilities regardless of difficulties that may arise during the course. Commitment is strongly related to a personal positive feeling of completion and satisfaction as opposed to stress and burnout (Nelson & Low, 2003).

According to Helland, Stallings & Braxton (2002) in a study to examine how fulfilment of college expectations affect student's social integration, it was revealed that the greater the degree of social integration and institutional commitment, the more likely students will return to the university to complete their academic career.

Positive Change

Positive change as a construct to Emotional Intelligence is defined as one's power to redirect behaviour (Nelson & Low, 2003). Change, although perceived by most to be undesirable or uncomfortable is needed for mobility in contemporary society. One's ability to assess and reflect on the demands for change can lead to improved satisfaction.

Raymore, Barber & Eccles (2001) examined data from the Michigan Study of Adolescent Life Transitions to study the role of leaving home and going to college on change and stability in leisure patterns. The study concluded that transition events are particularly useful in predicting leisure pattern stability or change.

According to a study by Wonacott (2001), the change in social strain is strongly related to change in coping and adjustment for men and those with many stressors, while change in social support is strongly related to change in coping and adjustments for women and those with few stressors.

2.2.4 Intrapersonal skills

Self-esteem and stress management are critical skills that people must achieve at an intrapersonal level. An ability to remain positive and modify behaviours that are conducive to success will have a significant impact on personal achievement. Feelings of self-worth and self-confidence produce an inner drive that will allow individuals to successfully handle the stressors of personal, academic, and career demand. If individuals do not develop and maintain these essential intrapersonal

skills, self-defeating thoughts and self-destructive behaviours will soon follow (Nelson & Low, 2003).

A research study by LePage-Lees (1997) examined the education experience of twenty-one women who were academically successful, yet disadvantaged as children over a two year period. The study concluded that resilient women who had endured stress as children often developed a highly advanced level of emotional intelligence - intrapersonal skill. When emotional intelligence was encouraged, the women's academic performance improved.

Self-Esteem

Since the inception of psychology, self-esteem has been thought to be related to good mental health (Potter, 2005). Self-esteem is synonymous with a sense of self-worth and accepting shortcoming while striving for improvement. Self-esteem is the ability, belief and/or skill to view oneself as a positive and competent individual who successfully accomplishes personal goals. A person who demonstrates high levels of self-esteem has self-confidence, self-regard and self-worth in the ability to achieve personal excellence. Positive self-esteem is deeply rooted in personal achievement and well-being (Nelson & Low, 2003).

Leondari, Syngollitai & Kiosseoglou (1998) on the relationship among self-esteem, academic performance, motivation and persistence on task, posited that students who demonstrated high levels of self esteem outperformed other groups in academic achievement as measured by grade point average and showed more persistence on

task. Stoeover (2002) further stated that parents who fostered autonomy, locus of control, and self-esteem in their children resulted in positive personal adjustment.

Stress Management

Stress management is an emotional intelligence skill which gives one the ability to choose and have self control in response to external stressors. This skill helps to regulate the emotional intensity of a stressful situation and use cognitive coping strategies to effectively confront and deal with the stressors (Nelson & Low, 1999).

One's ability to identify stress and to be proactive in dealing with the events that produce it is germane to success. Stress management is an important skill in achieving emotional and physical health and it seems directly related to student achievement (Nelson & Low, 2003)

Cassady (2001) studied test anxiety as a factor in student performance. One implication of the research is that anxiety causes failure at many levels of recall during examination sessions.

A research study explored college student stress and results revealed that academic pressure was the stressor that most commonly led to high failure due to intrapersonal difficulties (Bolger, 1997).

2.3 Gender differences and emotional intelligence

In the recent field of research on emotional intelligence where emotional competencies are closely linked, gender differences have also been detected in

childhood, adolescents and adulthood (Sanchez-Nunez, Fernandez-Berrocal, Montanes & Latorie, 2008).

Petrides & Furnham, (2000) in a study on gender differences in measured and self-estimated trait emotional intelligence, revealed that between gender analysis of covariance on the total estimated score with total measured trait of emotional intelligence as the covariate indicated that males self-estimation of emotional intelligence were significantly higher than those of the female. There was a significant gender difference on the social skills factor with females scoring higher than males.

According to Brakett, Mayer & Warner (2004) in a study on emotional intelligence and insulation to everyday stress, they revealed that women turned out to be more skilful at directing and handling their own and other people's emotion unlike the men which are less skilful at directing and handling emotions.

A research by Katyal & Awasthi (2005) on gender differences in emotional intelligence among adolescents of Chandigarh, revealed differences between mean scores of boys and girls with regard to emotional intelligence, with girls having higher emotional intelligence than that of boys.

In a study by Hopkins (2005) on the impact of gender, emotional intelligence competencies and styles on leadership success, the results demonstrated a strong pattern of significant differences between male and female leaders in emotional intelligence. The conclusion was that gender has a powerful influence on the images and profiles of successful leadership.

Vela (2003) studied 'The Role of Emotional Intelligence in the Academic Achievement of First Year College Students'. The results suggest that students with high levels of emotional intelligence tend to be more successful in their academic achievement. His comparison on gender significance revealed that based on the correlation and multiple regression analyses; there was no significant gender difference in the emotional intelligence skills.

Stottlemeyer (2002) conducted a study entitled 'Assessment of Emotional Intelligence and the Implications for education'. The study examined the role of emotional intelligence in academic achievement. Data indicates that females have higher scores in emotional skills and academic achievement than males. Results suggest that gender difference in academic achievement may be influenced by emotional intelligence.

A study on 'Nurturing Leaders' Emotional Intelligence through Brainstorming and Emotional mastery training programmes: Implication for Human Resources Management, revealed among other things that there is no significant effect of gender on participant emotional intelligent skills. This implies that participants' emotional intelligence skills are not gender specific (Ogunyemi, 2007).

In a study of Effects of Gender and GPA on Emotional Intelligence, results revealed that there was not enough evidence to say that there was an effect of the variable gender to the factors of emotional intelligence studied (Sutarso, Baggett, Sutarso & Tapia, 1996 in Stottlemeyer, 2002).

2.4 Emotional intelligence and academic achievement

Research findings indicate that emotional intelligence is important and more predictive of students' academic achievement, retention and career success.

In a study to assess more fully the relative importance of both ability and personality variable in the prediction of academic achievement, one of the conclusions reached was that Intelligence Quotient together with the personality factor, which was called conscientiousness – predicted achievement in all areas. What was tested under personality was among others- whether the student is reserved or warm-hearted, emotionally unstable or emotionally stable, undemonstrative or excitable, submissive or dominant, conscientious or not, shy or socially bold, tough-minded or tender-minded, zestful or reflective, self-assured or apprehensive, group dependent or self-sufficient, uncontrolled or controlled, relaxed or tense. It is obvious that most of these factors are included in the components of emotional intelligence. (Barton, Dielman & Cattell ,1972).

Pope (1982) examined the relationship of selected intrapersonal, interpersonal and life management skills to academic achievement among secondary school Students. Findings concluded: (1) a statistically significant positive correlation exists between academic achievement and the personal skills of growth motivation, commitment ethic, drive strength, empathy, self-esteem, time management, assertion, interpersonal awareness, decision making, stress management and leadership; (2) a major portion of grade variance among secondary school students is explained by the personal skills of growth motivation, commitment ethic, leadership, assertion,

empathy and interpersonal awareness; (3) a major portion of grade variance among male students is explained by the personal skills of growth motivation, self-esteem, interpersonal awareness, empathy, leadership, stress management, time management, drive strength, assertion, decision making and commitment ethic; (4) a major portion of grade variance among female students is explained by the personal skills of commitment ethic, leadership, growth motivation, drive strength, time management, assertion, stress management, self-esteem, empathy, interpersonal awareness and decision making; (5) a major portion of grade variance among majority students is explained by the personal skills of growth motivation, interpersonal awareness, drive strength, assertion, leadership, empathy, decision making, commitment ethic, time management and stress management; (6) a major portion of grade variance among minority students is explained by the personal skills of self-esteem and commitment ethic.

A research by Link (1993) on factors associated with academic performance of community college students revealed that academic achievement has been difficult to measure for many educators due to a wide variety of non-intellectual variables which have been difficult to measure. The purpose of Link's study was to analyse the relationship of self assessed personal skills, reading levels and personal data with academic performance. Link's findings implied that personal skills are essential to academic achievement.

Abisamra (2000) examined the relationship between emotional intelligence and academic achievement among eleventh graders. His result showed that there is a significant relationship between emotional intelligence and academic achievement.

Also at Le Salle Academy, a private school in Providence, Rhode Island, students were given lessons in emotional intelligence across the curriculum. This was part of an exhaustive programme in social and emotional education called 'Success for life'. Results revealed an upgrade in the academic performance of the students. The School Council voted to approve this programme by 20 – 0 vote (Abisamra, 2000).

In a study that examined the relationship between self-identity and academic persistence and achievement in a counter-stereotypical domain, the study revealed that the higher the self-concept and self-schema, the more positive the self-descriptions, the better the academic achievement. The study also showed that self-identity improves through social interaction and communication with others which would enhance achievement (Coover & Murphy, 2000).

Stottlemeyer (2002) examined the role of emotional intelligence in academic achievement in the study on the assessment of emotional intelligence and the implications for education. Results determined significant correlation between emotional intelligence skills and academic achievement. It also suggested that gender differences may be influenced by emotional intelligence skills and resilience of students' to succeed despite their low socioeconomic status; this may also be explained by emotional intelligence skills.

Edun and Akanji (2008) studied the perceived self-efficacy, academic self-regulation and emotional intelligence as predictor of academic performance in junior secondary school and posited that when emotional intelligence was entered into the regression model due to the strength of its relationship with academic performance of students,

there was a significant prediction of students' performance. This showed that emotional intelligence alone accounted for 63.7% of the variance in academic performance of students.

Report by Aremu, Tella and Tella (2005) on the relationship among emotional intelligence, parental involvement and academic achievement of secondary school students in Ibadan, Nigeria, revealed that both emotional intelligence and parental involvement could predict academic achievement. There were also a significant positive relationship between emotional intelligence and academic achievement.

Drago (2004) in a study on the relationship between emotional intelligence and academic achievement in non-traditional college students, the results demonstrated that emotional intelligence is significantly related to student GPA scores, student cognitive ability scores and student age. Overall, the results suggest that academic achievement is related to students' ability to recognise, use and manage their emotions.

Parker, Duffy, Wood, Bond and Hogan (2005) conducted a study on academic achievement and emotional intelligence: predicting the successful transition from high school to university. The study was on 1,426 first-year students attending four different universities. Results revealed that academically successful students had significantly higher levels of several different emotional and social competences. These findings suggest that emotional intelligence plays an important role in the academic achievement of students and the successful transition from high school to university.

Cuellar and Hubacuc (2008) examined emotional intelligence and academic performance in university students of natural science with 337 participants and revealed that variables of emotional intelligence with academic achievement were correlated, while there was a significant difference in the attention on gender.

Adeoye and Emeke (2010) observed in a study on emotional intelligence and self efficacy as determinants of academic achievement in English language among students in Oyo state senior secondary schools that students exposed to emotional intelligence training performed better in English language achievement test than those in self efficacy training and control group. Emotional intelligence training had a more significant impact on students' academic achievement.

From the foregoing one can hypothesize that emotional intelligence skills are correlated to and predictive of academic achievement. The following conceptual model depicts the relationship:

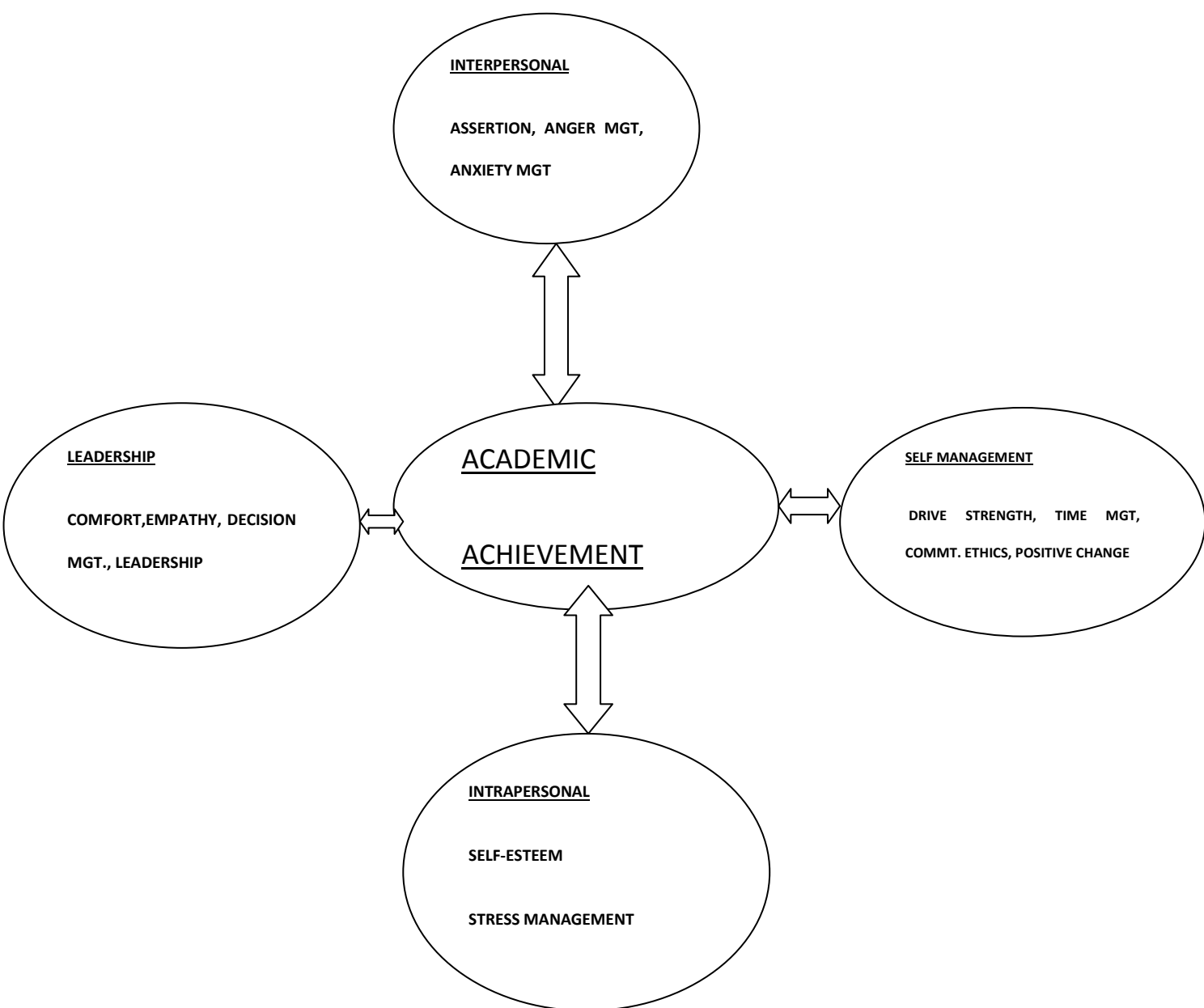


Figure 1: Conceptual Model of the Relationship between Emotional Intelligence Skills and Academic Achievement

Determinants of Poor Academic Achievement

Numerous studies have analyzed the factors behind the academic achievement of students. Identifying the variables that influence the achievement of young

individuals at school, high school or university is of great importance for two different communities. It is an essential tool for the public authorities in charge of the definition of optimal and efficient education policies. On the other hand, this kind of analysis can help the parents, students and educational institutions to improve the quality of their career options. Also, some authors have suggested that there is a relationship between the performance of students during their studies and their future earnings.

Bonga (2010) conducted an analysis by assessing the impact of the examinees' initial characteristics (gender, ethnicity, parental education, geographic region and age), college-related characteristics and college-related performance variables in the performance on the Graduate Record Examinations (GRE) General Test. They found that the students' initial characteristics have a modest impact on the GRE results and among them parental education is the most significant. On the contrary, the college-related characteristics (major, institutional quality and Research University) seem to have a more important role in explaining the difference in GRE scores among students.

Sakho (2003) carried out a study of the determinants of academic achievement of HEC-lausanne graduates using a Tobit model. He analyses econometrically the relationship between different variables and the average grade obtained during the license studies by 156 students. The findings suggest that a large number of different factors related with the personal and family background, with the work and study discipline and with the type of degree interact together in order to explain the variation of HEC students' performance.

Akanle (2007) studied Socio-Economic Factors Influencing Students Academic achievement in Nigeria using some explanation from a local survey. The major instrument used in collecting data for the study was the self-developed instrument tagged social-economic and academic achievement rating scale of the students. The data collected were analyzed using t-test at (0.05 alpha level). The time frame of the study covers the period of 2004 to 2007. A total of one hundred and twenty (120) copies of questionnaire were administered to respondents. The study revealed that insufficient parental income, family type and lack of funding by governments are factors influencing students' academic performance. Based on these findings, certain recommendations were made towards improving student academic performance. Prominent of these include proper funding of education by government, sensitization of parents towards their children education and the support of NGOs to eradicate poverty.

Using the concepts of financial capital, human capital, and social capital, Chow (2000) attempted to disentangle the major factors which affected the academic performance of 368 recent Hong Kong immigrant students attending 26 different public high schools in Toronto. Results of the ordinary-least square regression analysis used indicated that presence of father in Canada, higher self-rated socio-economic status, immigration to Canada being politically motivated, and higher level of English proficiency were significantly and positively related to academic performance.

Jing-Lin, Deng and Wei (2009) studied the determinants of international students' academic achievement comparing between Chinese and other international students

using a multiple regression analysis. The results suggest that the perceived importance of learning success to family, English writing ability and social communication with their compatriots are significant predictors for all international students. As the predominant group, Chinese students display some distinctive characteristics. A less active learning strategy was observed among Chinese students relative to others, but no evidence was found that this negatively affects their academic achievement.

A retrospective study was conducted by Amosun, Balogun and Alawale (1996) to determine the best predictors of academic and clinical performance in the physiotherapy education programme in the University of Ibadan, Nigeria. Reviewing the records of 94 students enrolled in the programme between 1983 and 1987, multiple and stepwise regression analyses revealed that pre-admission requirements were not significantly related to academic and clinical performance. When all the predictor variables were included in the multiple and stepwise regression analyses, the variance accounted for by the predictor variables was dismally low: 33.8% and 21.3% for academic achievement and clinical performance, respectively. It was concluded that the pre-admission requirements were not viable predictors of academic and clinical performance in the programme.

Poor academic achievement, according to Aremu (2000) is a performance that is adjudged by the examiner and some others as falling below an expected standard. The interpretation of this expected or desired standard is better appreciated from the perpetual cognitive ability of the evaluator of the performance. The evaluator or assessor can therefore give different interpretations depending on some factors.

Bakare (1979) described poor academic achievement as any performance that falls below a desired standard. The criteria of excellence can be from 40 to 100 depending on the subjective yardstick of the evaluator or assessor. For example, a 70% performance of senior secondary 3; students in junior secondary English language examination is by all standard a very good performance. However, a cursory look at the performance and the individual examined and the standard of the examination he or she took could reveal that the performance is a very poor one. On the other hand, a JSS2 student's performance of 37% in SS3 mathematics can be said to be a poor performance when in actual fact the performance is by all standards a very good one. This shows that the concept of poor academic performance is very relative and this depends on so many intervening variables. Aremu and Sokan (2003) submit that the search for the causations of poor academic achievement is unending and some of the factors they put forward are: motivational orientation, self-esteem/self-efficacy, emotional problems, study habits, teacher consultation and poor interpersonal relationships. Bakare (1994) also made efforts to categorize factors militating against good academic achievement into four principal areas which are:

- i. Causation resident in the child such as basic cognitive skills, physical and health factors, psycho-emotional factors, lack of interest in school programme.
- ii. Causations resident in the family such as: cognitive stimulation/basic nutrition during the first two years; type of discipline at home; lack of role model and Finance

- iii. Causation resident in the school such as school location and physical building; interpersonal relationship among the school personnel
- iv. Causations resident in the society such as instability of educational policy; under-funding of educational sector, leadership; Job losses.

2.5 Studies on the effectiveness of emotional learning system

Knowing and applying the emotional learning system gives an important guide to understanding ones immediate experience. By understanding and using the information received from both the cognitive and experiential systems, one can learn to choose behaviour based on constructive and critical thinking. This is called intentional behaviour. With practice, intentional behaviours become habitual and automatic. Intentional behaviour is reflective behaviour. Conversely, reactive behaviour is impulsive driven, almost automatic, and is occasionally done without thought or awareness. Impulsive behaviour is self-defeating in academic, corporate, and personal relationships. People who are perpetually reactive and self-defeating may lack a personal theory for understanding relationships in a constructive and emotionally healthful way. The Emotional learning System provides a framework on the flow between the experiential and cognitive minds.

The Emotional Learning System is a proven emotional and affective skills-based model designed to help make positive emotional development understandable and practical (Nelson & Low, 2003). The model is based on emotional and experience-based learning. Its five steps are systematic and sequential, yet fluid and interactive-

the system is designed to ensure a learner-centred development process built on self-assessment. The five steps are as follows:

Step A (Self-Assessment: Explore) requires that one develops an intentional self-assessment habit: inquiring, discovering and questioning (e.g. what thoughts am I having right now? What am I feeling? How do I want to respond to this situation?). Because self-assessment is the active process of exploring the experience as it occurs, one must pause before one act. Even when strong emotions (e.g. anger, fear or sadness) dominate ones immediate experience, the self-assessment process enables one to pause so that one can follow the path of reflection, not reaction.

Step B (Self-Awareness: Identify) involves the process of identifying your experience as either a thought or a feeling. Accurate self-awareness is the ability to correctly identify and label the emotion being experienced. Once the emotion is identified, the constructive-thinking process can begin.

Step C (Self-Knowledge: Understand) involves 'insight' and an understanding that allows one to make choices about how to behave. Wise actions are the immediate result of conscious reflection and constructive thinking. Occasionally, Step C is a logical and sequential process. At other times, a quick "insight" pops into ones awareness, and one can see new, more creative, and better problem-solving options.

Step D (Self-Development: Learn) involves learning various ways to improve one's behaviour. Positive self-development is a learning process seldom is our behaviour correct on first attempt. Improved behaviour requires choosing and engaging in

personal behaviour that pleases one and increases ones self-esteem and self-appreciation. New and improved behaviours require practice to become intentional habits.

Step E (Self-Improvement: Apply and Model) requires that one apply and model emotionally intelligent behaviour to achieve personal, career and academic goals. The ability to apply and model emotionally intelligent behaviour is not an arrival state; rather, it is a process of using the preceding four steps to achieve ones best as a person.

Stottlemeyer (2002) conducted a study on assessment of emotional intelligence and the implications for education. The study was to determine the effectiveness of the emotional learning system. Results revealed a significant positive correlation between emotional learning system and leadership skills, self-management skills, interpersonal skills, intrapersonal skills (emotional intelligence skills).

The role of emotional learning system in emotional intelligence in school achievement and mental health was examined by Nelson, Jin and Wang (2002). Results suggest that: (1) Significant differences were identified in selected emotional intelligence skill scales when educational level, gender and location variables were considered, (2) Drive Strength, time management and commitment ethics are significant predictors of school achievement, (3) Emotional intelligence skills were significant predictors of mental health and school achievement of Chinese High school and college students.

Vela (2003) applied emotional learning system and results from the study suggested that emotional intelligence skills are significantly correlated and predictive of academic achievement and mental health.

Potter (2005) in a study on the impact of an emotional intelligence intervention program on freshmen students, concluded that emotional learning system as an intervention program appeared to have short-term and long term impact on student behaviour. The program focused on leadership skills, interpersonal skills, self management skills and intrapersonal skills. The within analysis conducted with the intervention group demonstrated significant changes in the time between pre-test and post-test for the total scales scores. The logical assumption is that the emotional intervention program helped participants make positive changes in attitudes, conception and behaviours that are related to student success, during the critical transition period from high school to college and beyond.

Nelson, Low and Ellis (2007) conducted a study on emotional intelligence: a transformative theory and applied model of positive personal change and the results revealed that emotional learning system had a significant positive influence on emotional intelligence skills and that there was no significant gender difference.

Boyle (2003) analysed the Javelina EI Program on emotional intelligence skills development training, student achievement and retention involving academic terms of Fall 2002, Fall 2003 and Spring 2004 in which a total of 2,498 students participated. Emotional learning system model was applied. Results showed positive

increase in emotional intelligence skills, retention and students academic achievement.

Williams (2004) in a study on achievement and retention patterns in predominantly Hispanic serving institution of higher education revealed that a positive influence of emotional learning system on the improvement of emotional intelligence skills, retention and academic achievement

Smith (2004) posited that participants placed on the emotional learning system program improved in emotional intelligence skills and behavioural adjustments in a study conducted on the transformational learning program for at-risk high school students'.

Nelson & Nelson (2003) conducted a study on emotional intelligence skills: Significant factors in freshmen achievement and retention. Their results indicated a positive significant influence of emotional learning system on emotional intelligence skills, academic achievement and retention.

2.6 Studies on the effectiveness of peer mentoring

The word mentor and the act of mentoring can be traced back to antiquity through the reading of Homer's (1992) *The Odyssey*. The character *Mentor* is described as an "old man" and is entrusted with "authority" over Telémakhos as a teacher, friend, and protector (Homer, 1992, p. 25). The mentoring relationship in *the Odyssey* between Telémakhos and the village elder demonstrates mentorship's roots in an apprenticeship model where an older person with power and influence takes a younger inexperienced individual into his or her care (Komives & Collins-Shapiro,

2006; Kram, 1985b, Johnson & Ridley, 2004; Roche, 1979; Rosser, 2006). As noted here, mentoring relationships have their roots in antiquity. However research on the purpose, structure, and outcomes of these relationships and the evolution of mentoring relationships have only been examined during the last few decades (Kram; Zachary, 2006).

Levinson (1978), in one of the earliest studies defined mentoring:

One of the most complex and developmentally important relationship, a man can have in early adulthood. The mentor is ordinarily several years older, a person of greater experience and seniority in the world the young man is entering.....Mentoring is defined not in terms of formal roles but in terms of the character of the relationship and the functions it serves..... (The mentor) may act as a teacher to enhance the young man's skills and intellectual development. Serving as sponsor, he may use his influence to facilitate the young man's entry and advancement. He may be a host and guide, welcoming the initiate into a new occupational and social world and acquainting him with its values, customs, resources and cast of characters. Through his own virtues, achievements and way of living, the mentor may be an exemplar that the protégé can admire and seek to emulate. (p.97-98).

This definition can apply to the many forms of mentoring that take place in higher education. Mentoring relationships can take on different forms at different times and these possibilities include roles as coaches, teachers, sponsors, and peers (Smith, 2009) Mentoring in education can take on many forms but generally falls into two

categories, formal relationships and informal relationships. In formal mentoring, a mentee is assigned to a mentor. Formal mentoring frequently features mentor training, planned meeting sessions, and specific matching of a mentor to a mentee. Informal mentoring, on the other hand, is a spontaneously developing relationship between two or more individuals, where one individual provides support, advice, and guidance to the other individual(s) (Eby & Lockwood, 2005).

Age may also play an important role in mentoring relationships. Unlike traditional mentoring relationships, peer mentoring relationships involve a level of reciprocity and collaborative benefits for the both the mentor and mentee that may be different than in traditional mentoring relationships (Kram, 1985b; Kram & Isabella, 1985; Zachary, 2006). Peer mentoring relationships have the power to be more impactful on students because of the students' proximity in age with one another (Astin, 1999; Forbess, 2007). Research suggests that peers have a great level of influence over other peers (Newcomb, 1962; Astin, 1999). In addition, research showed that students' participation in peer mentoring relationships has a long history on college campuses (Jacobi, 1991; Kram & Isabella, 1985; Lahman, 1999).

Kram and Isabella (1985) highlighted the possible benefits of utilizing peer kinships in this way during their qualitative work with peer mentors in a business setting. They found that although peer mentors appeared to provide less career focused support than traditionally defined mentors, the types of career and psychosocial support offered were direct reflections of the traditionally defined mentoring relationships. This has been supported by more quantitative work by Ensher, Thomas and Murphy (2001) who compared traditional and peer mentoring

relationships amongst 142 informally mentored individuals within an organisational context. Results indicated that traditional mentors provided more career support than peer mentors.

Ensher et al. (2001) also report that mentors in traditional mentoring relationships reported a greater level of satisfaction with the relationship and report a greater degree of job satisfaction than their peer mentored counterparts. This difference, they argue, is due to the perception that traditional mentors can provide more tangible career benefits to their proteges because they are by definition further on in their career, which is directly linked to satisfaction. However, no significant differences were found in the amount of social support and reciprocity between the two mentoring types.

Peer mentoring is distinguished from traditional mentoring and characterised by its mutual relationship therefore a lack of significant difference in levels of reciprocity is unsurprising. Peer mentoring can also be differentiated from traditional mentoring by age and rank; within conventional mentoring there may be a difference in both age and rank whereas peer mentors and proteges tend to be similar in age and / or rank.

Rice & Brown (1990) surveyed undergraduate students who were acting as peer mentors and reported that students preferred a mentor 1-3 years older than themselves, supporting the suggestion by Mead (1978; cited in Rice and Brown, 1990) that "students may look to their near peers as models more than they do their parents, grandparents, or other elders".

As well as indicating the types of support received from a peer, Kram and Isabella (1985) also identified three types of peer relationship that can be based along continuum of trust, commitment level, relationship intensity, issues addressed and needs satisfied. This distinction of peers into three categories is supported by McDougall and Beattie's (1997) qualitative work with 28 informal peer mentor pairs. They defined peer mentoring as "a process where there is mutual involvement in encouraging and enhancing learning and development between two peers, where peers are people of similar hierarchical status or who perceive themselves as equals" (McDougall & Beattie, 1997). They highlighted the possibility of moving through the ranks from co-worker to utilitarian peer mentor and onto holistic mentor. As individuals move from basic information sharing to a deeper and broader relationship, it is likely that the prevalence of mentoring episodes will increase until the nature of the relationship transforms into mentoring. Exactly when this transformation takes place is difficult to define and is likely to require more long term research alongside investigations into peer relationships that never reach this point (McManus and Russell (2007).

Allen, McManus and Russell (1999) argue that peer mentoring relationships are particularly efficacious with regards to outcomes of work related stress and socialization: the extent to which participants believed they had adjusted to their role within the academic programme. In an evaluation of 64 full time first year MBA students in a formal team peer mentoring program, Allen et al... (1999) report that psychosocial mentoring and career mentoring were positively related to socialisation. Although there was no association between mentoring and reported work related

stress both mentoring functions related positively to beliefs that their mentors helped alleviate work stress ($r = .54$ for psychosocial and $r = .57$ for career focused mentoring).

Although mentoring in Higher education has been around at an informal level for decades it is now viewed less in the 'traditional' (apprenticeship model/ faculty staff mentoring students) manner but more as a formal strategy to reduce student drop-out rates (Astin, 1977; Jacobi, 1991) though little is known on how mentoring relationships are initiated and the prevalence of informal mentoring relationships between faculty and students and no research to date has been conducted on informal peer mentoring relationships amongst students. Another more recent phenomenon that has led to a surge of mentoring programs in UK, USA and Australian universities is the increased interest in the transition to, and the first year experience in the university. Kram (1985) argued that the complementarity in peer relationships can take the form of empathy and mirroring of one's own experiences. As mentors may have recently had similar experiences to the proteges, proteges may feel more comfortable discussing these experiences with peers rather than staff or more formal services offered at the university.

Kram and Isabella (1985) pointed to the possibility of peer relationships as a form of mentoring relationship. They suggested that peer relationships provide a forum for mutual exchange in which an individual can achieve a sense of expertise equality and empathy that is frequently absent from other forms of mentoring relationships. The results of many studies indicate that students prefer the assistance of their peers to that of academic or general staff (Muckert, 2000).

Karcher (2005) in a study examined the effect of peer mentoring and high school mentors' attendance on their younger mentees' interpersonal skills, intrapersonal skills and connectedness. In this randomized study of 73 Caucasian, rural youth, multiple analyses of covariance revealed that connectedness to school and parents at posttest were significantly greater for mentees than for the comparison group. Regression analyses revealed that positive changes in interpersonal skills, intrapersonal skills, and behavioral competence were highly related to mentoring. Working with 500 participants, Fowler (2002) observed that the principal benefits in mentoring are interpersonal and intrapersonal skills, leadership, self management, relationships and productivity. Also results showed that there was no specific gender difference.

Kram (1980) in a study peer mentoring into two broad categories: career functions and psychosocial functions and reported a range of benefits of the psychosocial functions. They affected level of performance and increased sense of competence in leadership, interpersonal skill and self worth. Burke (1984) reported positive increase in self confidence, interpersonal relationship and leadership as some of the most valuable outcomes for mentees.

Muckert (2000) conducted a study on Investigating the students attrition process and the contribution of peer mentoring interventions in Australian first year university program. In the study with 118 participants it was revealed that students

peer group interactions influenced their interactions with the faculty which in turn influenced students' academic and intellectual development.

Examining the academic performance and retention in a peer mentor program at a two-year campus of four institutions, Twomey (1991) found that students who participated in group-based peer mentoring relationships returned the following semester at a significantly higher rate than students who did not participate.

Borden, Burton, Evenback and Williams (1997) in a study compared the effects of five specific academic support programs on college student performance and persistence. They found that peer mentoring had the greatest impact on students' academic performance which rose by as much as one-half a grade on average and retention rose by as much as 15%.

A research by Carter (2000) on empowerment groups: a creative transition and retention strategy revealed that students who participated in a group mentoring program obtained higher grade point averages at the end of the fall semester than students assigned to a control condition.

Philips (2009) in a study on the impact of peer mentoring in UK higher education' involving 158 participants revealed that formal peer mentoring schemes had a positive relationship on personal, emotional and academic performance of the mentees, mentors and institutions involved.

According to Nicholas and White (2001) on the impact of peers' networks on achievement of high school algebra students' results indicated that for all students those with clique affiliation (peer group) experienced significantly greater

Mathematics achievement when compared with participants who remained unattached. They concluded that student clique groups have a positive influential impact on student achievement.

2.7 Emotional intelligence and intellectual intelligence

In defining Emotional Intelligence one is compelled to compare it with intellectual intelligence. A reason to compare Emotional Intelligence with Intellectual Intelligence is that intellectual intelligence provides a model that has undergone a continuing evolution since its inception and acceptance (Potter, 2005). As a model intellectual intelligence has developed a sophisticated nomenclature for standardization that can serve as a benchmark for defining emotional intelligence. Thus, the field of emotional intelligence can springboard from the long development of the field of intellectual intelligence rather than repeat it. As previously mentioned, as a comparison, intellectual intelligence has influenced almost all aspects of our society and of academics; and because of its gravity and enormity in our culture intellectual intelligence must be continually considered. Assessment of intellectual intelligence or of the Intelligence Quotient (IQ) has reached almost all fibres of our society. Educationally IQ is used as a tool for placement into programmes.

Early attempts to define and mention intellectual intelligence were first credited to a French Psychologist, Binet A. He developed an instrument that has been used widely and adopted by others interested in intelligence. Based on his scholarship, Binet determined that at certain ages children were able to carry out certain tasks or had the ability and understand certain concept. To illustrate, Binet discovered that a

four- year old child should have discovered the concept of object constancy. That is, if an object is shown to a child and then it is taken away or hidden, the child should be able to name that object from memory. With the help of another Theodore Simon, Binet later published and standardized the Binet-Simon intelligence test in 1911. Binet's work in object testing produces a mental age that when compared to the chronological age provides an intelligence score. Other intelligence test followed Binet's contributions: the Wechsler's intelligence scale, the Raven, the Slosson and the Woodcock-Johnson are widely accepted and used for IQ assessment.

Many contemporary human scientists believe that this type of testing is an unfair way of selecting values, cultures and beliefs and that it has little actual value (Kincheloe, Steinburg & Gresson, 1996). In the book titled *Measured Lies* (Kincheloe, Steinburg & Gresson, 1996) the authors discussed short-comings of assessing a person's IQ: Intelligence Quotient evaluations are used to determine placement in different programmes and to track students into vocational and academic paths (Williams, 2004). Traditional IQ test also measure other intellectual factors, but students' learning styles, backgrounds or situations are not accounted for. Consequently, their backgrounds, their history and life experiences, and their spoken and learned language (all important factors that affect how they perform on test) are ignored. Those who do poorly on test are negatively categorised and limited by this in their future opportunities (Herrnstein and Murray, 1995).

Kincheloe, Steinburg & Gresson, (1996) believe that IQ scores and are used for reasons of prejudice, excluding others because of race, culture, or social status. They also pointed to the fact that there are some researchers like Herrnstein and

Murray who in their book, *The Bell Curve*, appear to use IQ testing and interpretations of scores to justify and present their hidden agenda. Potter (2005) believes that low score on IQ tests are the equivalent of a death sentence; individuals are entombed in their beliefs of the significance and infallibility of IQ scores and are unable to separate facts from fictions. Single dimension or one level thinking cannot begin to assess the multidimensional complexity of human intelligence (except in the minds and imagination of those individuals and systems working within the parameter of predetermined expectations in the assessment or prediction of individual ability).

Selecting candidates, making appointments or approving applicants for a position based on a standardized intellectual testing is weak at best. Questions that are raised using IQ assessment testing based on this practice are:

What is being measured?

How many potential leaders are being excluded?

How many success stories are unrecognised (because they cannot be demonstrated in this way) by those who use this test?

Other qualities, characteristics or thought processes that are equal to or surpass those measured by intellectual intelligence testing are neglected by intellectual intelligence testing. Intellectual intelligence testing measures mental ability related to other areas such as test taking skills. The two areas normally included in intellectual tests are performance and verbal comprehension and they assess areas of vocabulary, general knowledge, verbal reasoning and memory and the

construction, visual spatial and perceptual ability. The Wechsler intelligence scale for children- IV is given as an example (Williams. P., Weiss. L, and Rolfhus. E., 2003).

Verbal Comprehension Index

Similarities

Vocabulary

Comprehension

Word Reasoning

Perceptual Reasoning Index

Block Design

Picture Concept

Matrix Reasoning

Working Memory Index

Digit Span

Letter Number Sequencing

Processing Speed Index

Coding

Symbol Search.

Prediction of intellectual intelligence has been an important aspect of assessing intellectual intelligence since the evolution of Binet's first instrument. In the early development of intelligence testing, Binet measured and reported a mental age. He derived this from divide age by chronological age and then multiplying by hundred. Today most IQ scores are derived by obtaining a mean and standard deviation and are reported by percentiles of the population with reference to distribution on a bell-shaped curve.

An early problem encountered with intelligence test was its poor ability to predict success. Humans have emotions and are relatively complex, multidimensional entities. Predicting success with accuracy has been a challenge. Sternberg (1996) provides an excellent example when he describes his own history. Sternberg is full Professor and endowed chair at Yale University. He has secured over ten million US Dollar in research grants, published six hundred articles and books, and is a Fellow in the American Academy of Arts and Sciences. For Sternberg his greatest luck was his failure of an IQ test and because of his discouraging experience he learnt that if he was going to succeed it would not be because of his IQ. He also learnt soon after that low scores on test of intellectual intelligence do not preclude success nor do high scores guarantee success.

Many scholars (Sternberg, 1996, Goleman, 1998, Kincheloe et al, 1996) in their assessment of intelligence, state that these assessments are non-objective and recognize that there are several interpretations of several IQ instruments. An example of this is the answer to the question: What does it mean that Joe made a low score in his IQ test? Is English his first language? Is he genetically predisposed

to low intelligence? What are the level of education and/or vocabulary of the parents? Has Joe been raised in an economically disadvantaged environment? What is the overlap between his cultural experience and those of the school, state or the test developing company? These questions are complex and to some degrees their answers are the answerer's value system, culture and personal experience.

Development evolution and limits of intellectual intelligence are presented here as a template for developing a conceptual model for understanding emotional intelligence.

2.8 Emotional intelligence curriculum

Emotional intelligence, unlike IQ, is not fixed at birth. On the contrary it can, and should, be taught. There are several emotional intelligence curricula that exist today and are being taught in elementary schools. Some of the leaders in the emotional intelligence movement advocate teaching emotional intelligence as a separate class. Others advocate blending the standard academic material with lessons on emotional intelligence. The common thread is the goal of raising the level of social and emotional competence in children as a part of their regular education - not just something taught remedially to children who are faltering and identified as troubled, but a set of skills and understanding essential for every child.

At the Neuva School in San Francisco, students attend a class called Self Science. The tensions and traumas of children's lives are the topics covered in this class. Karen Stone McCown, developer of the Self Science Curriculum and founder of Nueva said, "Learning doesn't take place in isolation from kids' feelings. Being

emotionally literate is as important for learning as instruction in math and reading."
(Goleman, 1995)

McCown and Dillehunt (1978) developed the Self Science Curriculum. The curriculum includes many components of emotional intelligence:

- Self-awareness: observing yourself and recognizing your feelings; building a vocabulary for feelings; knowing the relationship between thoughts, feelings, and reactions.
- Personal decision-making: examining your actions and knowing their consequences; knowing if thought or feeling is ruling a decision; applying these insights to issues such as sex and drugs.
- Handling stress: learning the value of exercise, guided imagery, relaxation methods.
- Empathy: understanding others' feelings and concerns and taking their perspective; appreciating the differences in how people feel about things.
- Conflict resolution: how to fight fair with other kids, with parents, with teachers; the win/win model for negotiating compromise.

There are many other components of the Self Science Curriculum, all of them aiming toward the goal of more socially and emotionally competent individuals. The Yale-New Haven Social Competence Promotion Program is in place at Troup Middle School in New Haven, Connecticut. Troup is located in a troubled and chaotic area of

New Haven. Students are confronted with issues of drugs, AIDS, and abuse as a part of their daily lives. Social competence is not a fringe course; it is a survival skill.

An evaluation of the Social Competence Program (Elias and Weissberg, 1990) showed that children who participated in the program had improved problem-solving skills, more involvement with peers, better impulse control, and improved social behaviour. Children were also found to have improved interpersonal effectiveness and popularity, enhanced coping skills, more skill in handling interpersonal problems, better coping with anxiety, less delinquent behaviours, and better conflict-resolution skills.

Self Science and the Social Competence Program are "pure" emotional intelligence curricula. There are many curricula that are considered "blends" because they call for a combination of emotional intelligence lessons and traditional academic lessons. One such curriculum is the Child Development Project, created by a team directed by psychologist Eric Schaps (Solomon, 1988). The project supplies teachers with a pre-packaged set of materials that fit into existing lesson plans. For example, first graders read the story, "Frog and Toad Are Friends", and then have a discussion about friendship and other issues that were raised in the story. Emotional lessons are also taught in the Child Development Project by encouraging teachers to rethink the way that they discipline students. An incident of misbehaving is an opportunity to teach children skills such as impulse control, explaining their feelings, and resolving conflicts.

Schaps (1988) evaluated the project and found that the students were more responsible, assertive, popular and outgoing, pro-social and helpful, considerate, and concerned. The students had better understanding of others, more pro-social strategies for interpersonal problem-solving and better conflict-resolution skills.

In the New York City schools, Linda Lantieri has implemented the Resolving Conflict Creatively Program (Goleman, 1995). This program was designed in response to a specific problem: violence. The purpose of this program is to teach children how to resolve schoolyard arguments before they escalate to life-threatening situations. Some students are trained as mediators. When tension erupts, students can seek out a mediator to help them settle it. Evaluation of this program by independent consultants (Metis Associates, Inc. 1990) showed less violence in class, fewer verbal put-downs in class, more caring atmosphere, more willingness to cooperate, more empathy, and improved communication skills.

Teaching children how to manage their emotional lives is critical for their success in and out of school. Daniel Goleman (1995) pooled the results of several emotional intelligence curricula and found widespread benefit for children's emotional and social competence, for their behaviour in and out of the classroom, and for their ability to learn. Improvement in recognizing and naming emotions, understanding emotions, and recognizing the difference between feelings and actions was found among all the curricula. Also found was better frustration tolerance and anger management; fewer verbal put-downs, fights, and classroom disruptions; increased ability to express anger appropriately, without fighting; fewer suspensions and expulsions; less aggressive or self-destructive behaviour; more positive feelings

about self, school, and family; better stress-management; and less loneliness and social anxiety. Increased empathy was found across the curricula - students were better able to take another person's perspective, improved empathy and sensitivity to others' feelings, and better at listening to others. Students were also better at handling relationships - more sharing, more assertive in communication, more popular and outgoing, more friendly, more pro-social, more democratic, and better at resolving conflict and negotiating disagreements. The results from the curricula Goleman examined indicate that emotional literacy programs improve children's academic achievement scores and their school academic performance.

Emotional literacy expands our vision of the task of schools themselves, making them more explicitly society's agent for seeing that children learn these essential lessons for life. We must step back, examine our schools, and ask ourselves if we really are preparing our children for life. Emotional intelligence is the master ability, the meta-ability that leads to success in all areas of life. Emotional intelligence curricula teach out of the owner's manual for the emotional life of children. These are fundamental lessons that have been ignored too long and must now be taught.

2.9 Emotional intelligence and teacher education

A growing body of interdisciplinary research clearly has connected the relationship of emotional intelligence to achievement, productivity, leadership, and personal health (Gardner, 1993; Goleman, 1995, 1998; Sternberg, 1996; Epstein, 1998; Weisenger, 1998; Low, 2000; Nelson and Low, 1999, 2003, 2005). Recent doctoral research has linked emotional intelligence with academic achievement and college success

(Stottlemyre, 2002; Vela, 2003; Smith, 2004; Williams, 2004; and Potter, 2005).

These research studies have identified the need to mainstream emotional intelligence instruction into the curricula to improve academic and career success.

New research (Goad, 2005; Justice, 2005 in Nelson and Low, 2005) has indicated the importance and value of emotional intelligence in teacher preparation programs. According to their research, Goad and Justice indicate that pre-service teacher education, induction experiences with mentoring, and alternative certification programs could be strengthened by providing emotional intelligence training in preparing new teachers. Emotional intelligence skills were linked to both classroom management performance and teacher retention factors for new and novice teachers. With the established relationship of emotional intelligence skills and academic achievement, students would benefit from learning and applying emotional intelligence skills to improve academic performance in school and college settings. With new research evidence linking emotional intelligence to instructional performance and as a factor in teacher retention, pre-service, new, and novice teachers could benefit from learning and using emotional intelligence skills for personal and professional development.

In their education model (Nelson and Low, 2005), a defining feature is that emotional intelligence is best understood and learned when framed around specific emotional skills and competencies. Simply stated, emotional intelligence is a learned ability to identify, understand, experience, and express human emotions in healthy and productive ways. Emotional experience and expression are unique to each teacher and student. No one else thinks, expresses feelings, chooses behaviours,

and acts in the same way. The research-based approach to emotional intelligence addresses this unique human condition.

Nelson and Low (2005) defined emotional intelligence as a confluence of developed abilities to: (1) know and value self; (2) build and maintain a variety of strong, productive, and healthy relationships; (3) get along and work well with others in achieving positive results; and (4) effectively deal with the pressures and demands of daily life and work. The development of emotional intelligence is an intentional, active, and engaging process. Affective learning requires a person-centred process for teacher and student growth and development. When emotional intelligence skills are a focus of learning, teachers and students are building human development behaviours that are intricately related to the positive outcomes of achievement, goal achievement, and personal well-being.

Transformative Learning

Transformative learning changes or transforms the person into a more effective teacher and student. Transformative learning is an empowering educational process that helps teachers and students to: (1) develop positive, healthy, productive relationships; (2) solve problems and make good choices/decisions; (3) stay attuned to healthy and successful outcomes; (4) manage self in achieving goals; (5) plan and make changes when needed; (6) behave wisely and responsibly (Low and Nelson, 2005). In a transformative learning environment, teachers and students are actively involved in positive and engaging interactions. Instruction is student-centred, focused on dialogue, and relevant to the student's frame of reference.

Transformative learning provides a focus on the development of knowledge, behaviours, and skills that students can use to improve themselves academically and career-wise throughout their life. A major factor in transformative learning is an effective relationship between the student and teacher.

Healthy Learning Environments

A simple and major problem for schools and colleges is to provide a safe environment that is emotionally healthy and academically challenging. Healthy learning environments are critical to the development of constructive thinking as well as problem solving, goal setting, achievement, and leadership behaviours. A healthy learning environment is characterized by trust, respect, and engaging dialogue in the classroom. The creation of a healthy learning environment focused on personal, academic, and career excellence requires an understanding and emphasis on affective as well as cognitive skills. The emotional intelligence skills of assertion, time management, goal achievement (drive strength), commitment ethic, stress management, and positive change are particularly important to academic achievement and college success. With a focus on emotional intelligence skills, learning becomes an active, engaging, and student-centred process. In a time of increased accountability for achievement and personal responsibility, teachers must learn and apply new skills to reduce the effects of negative stress, to establish and build positive and supportive relationships, and develop emotional intelligence. Healthy classroom environments minimize negative stress and contribute to more effective student learning.

Teacher Stress and Attrition

Educators live in a time of rapid change and increased demands. Physical and psychological problems occur when constant alarm reactions exhaust our response capacities. Our body's alarm responses are set off by stressors. Stress is related to both positive and negative change, and stress is not the problem. Stress negatively impacts health and productivity when our responses to stressors are too intense and too long in duration. It is difficult for teachers to remain healthy and effective in demanding work environments unless they learn and apply positive stress management skills daily. Teaching is a stressful profession. High levels of negative stress and emotional reactivity lead to burn-out and/or negative outcomes. Research findings suggest that unrealistic expectations between teacher training and reality of teaching, a lack of clear performance standards with constructive feedback, increasing physical demands and added responsibilities, inadequate pay and resources, and physically and psychologically dangerous work environments lead to teacher dissatisfaction and attrition. While teachers cannot control issues related to salary, teaching assignment, paperwork, class size, student behaviour, or support from administrators, they can learn and choose to develop skilled behaviours to deal with stressors. Emotional intelligence skills are germane to managing stress and the daily pressures of life and work. Goad (2005) and Justice (2005) concluded that pre-service, new, and novice teachers could benefit from emotional intelligence training. In a study conducted with first-year college students who were planning to become teachers, Elkins and Low (2004) identified a clear need to develop communication competence and emotional intelligence skills.

The Emotionally Intelligent Teacher

Emotionally healthy behaviour is reflected in characteristic ways of (1) thinking, (2) identifying, managing, and expressing feelings, and (3) choosing effective behaviours. Becoming an emotionally intelligent teacher is a journey and process, not an arrival state or end result. Emotionally intelligent teachers are active in their orientation to students, work, and life. They are resilient in response to negative stress and less likely to overwhelm themselves with pessimism and strong, negative emotions. An emotionally intelligent teacher learns and applies emotional intelligence skills to improve:

- physical and mental health by gaining knowledge/techniques to break the habit of emotional reactivity (Stress Management);
- productivity and personal satisfaction by helping to harmonize their thinking and feeling minds (Self Esteem and Confidence);
- self esteem and confidence by learning specific emotional intelligence skills (Positive Personal Change);
- communication in personal and work relationships (Assertion);
- ability to manage anxiety and improve performance under pressure (Anxiety Management);
- ability to quickly establish and maintain effective interpersonal relationships (Comfort);
- ability to understand and accept differences in others and diversity issues (Empathy);

- ability to plan, formulate, implement effective problem solving procedures in stressful situations (Decision Making);
- ability to positively impact, persuade, and influence others (Leadership);
- ability to direct energy and motivation to accomplish personally meaningful goals (Drive Strength);
- ability to manage time to meet goals and assignments (Time Management);
- ability to complete tasks and responsibilities in a timely and dependable manner (Commitment Ethic); and
- ability to control and manage anger and improve performance under stressful conditions and situations (Anger Management).

The Emotional Learning System provide an assessment and learning process to help teachers develop a plan of action to learn and apply emotional intelligence skills. Teachers who intentionally develop emotional skills and model emotionally intelligent behaviour on a daily basis experience more success and satisfaction in their professional career and life. Emotionally intelligent teachers are more resilient and proactive in responding to stressors and less likely to react to stress. Teachers who model emotional intelligence are characterized by: intentional reflective (not reactive) behaviour, more flexible (not resistant to change), assertive communication (not aggressive or passive), more optimistic and hopeful (not pessimistic and negative), and relies on skills and positive habits (not reactive habits).

2.10 Theory of learning-cognitivism

The relevance of cognitive learning theory to this study derives from the fact that emotional intelligence is a synthesis of cognitive and affective learning. Since the 1960's cognitivism has provided the predominant perspective within which Learning Research has been conducted and theories of learning have evolved. (Ormrod, 1999)

History of and assumptions of cognitivism:

Edward Tolman proposed a theory that had a cognitive flair. He was a behaviorist but valued internal mental phenomena in his explanations of how learning occurs. Some of his central ideas were: Behaviour should be studied at a local level, Learning can occur without reinforcement, Learning can occur without a change in behaviour, Intervening variables must be considered, Behaviour is purposive, Expectations of fact behaviour and Learning results in an organized body of information.

Based on his research of rats, Tolman proposed that rats and other organisms develop cognitive maps of their environments. They learn where different parts of the environment are situated in relation to one another. The concept of a cognitive map also called a mental map has continued to be a focus of research (Ormrod, 1999).

Gestalt psychology:

Gestalt psychologist emphasized the importance of organizational processes of perception, learning, and problem solving. They believed that individuals were predisposed to organize information in particular ways. The basic ideas of Gestalt psychology are:

1. Perception is often different from reality. This includes optical illusions.
2. The whole is more than the sum of its parts. They believed that human experience cannot be explained unless the overall experience is examined instead of individual parts of experience.
3. The organism structures and organizes experience. The German word *Gestalt* means "structured whole." This means an organism structures experience even though structure might not be necessarily inherent.
4. The organism is predisposed to organize experience in particular ways. For example, the *law of proximity* is that people tend to perceive as a unit those things that are close together in space. Second example: similar people tend to perceive as a unit those things that are similar to one another.

Piaget's developmental theory

Besides psychology, Piaget was interested in epistemology. Piaget used something he called the clinical method. This was research in which he gave children a series of tasks or problems, asking questions about each one. He then tailored his interviews to the particular responses that each child gave. His follow-up questions varied from

child to child. This methodology was very different from the methods of contemporary behaviorist research.

Piaget's ideas about human learning:

People are active processors of information. Instead of being passive respondents to environmental conditions, human beings are actively involved and interpreting and learning from the events around them.

Knowledge can be described in terms of structures that change with development. Piaget proposed the concept of schema. As children develop, new schemes emerge, and are sometimes integrated with each other into cognitive structures.

Cognitive development results from the interactions that children have with their physical and social environments. As a child explores his world, and eventually they began to discover that they hold a perspective of the world uniquely their own.

The process through which people interact with the environment remains constant. According to Piaget, people interact with their environment through to unchanging processes known as assimilation and accommodation. In accommodation, an individual either modifies an existing scheme or forms a new one to account for the new event. In assimilation an individual interacts with an object or event in a way that is consistent with an existing scheme.

People are intrinsically motivated to try to make sense of the world around them. According to this view, people are sometimes in the state of equilibrium, they can comfortably explain new events in terms of their existing schemes. However at times

they can encounter events they cannot explain or make sense of this is called disequilibrium, a mental discomfort. Through reorganizing thought people are able to then understand the previously un-understandable and return to equilibrium.

Cognitive development occurs in distinct stages, with thought processes at each stage being qualitatively different from those of other stages. Piaget's four stages: Sensorimotor stage, Preoperational stage, Concrete Operations and Formal Operations

Sensorimotor stage: from birth until about two years of age. At this age children are only aware of objects that are directly before them, thus the saying, "out of sight, out of mind." (Example: The game of "peek-a-boo" is enjoyed only by infants. Their joy in this game comes from their "finding" the adult -- who "hides" by blocking the child's view and thus "disappears" and "re-appears" as the child experiences it.)

Preoperational stage: emerges when children are about two years old until they are about six to seven years old. This is the stage of *language development*. Expanding children's' vocabularies reflect the many new mental schemes that are developing. This stage is characterized by a logical thinking, but not according to adult standards. A classic example is how young children cannot understand conservation of liquid. They will usually think that a taller glass has more water than a short glass even though both have been demonstrated to have the exact same amount of water.

Concrete operations: this third stage of cognitive development appears when children are six or seven years old and continues until they are about 11 or 12 years old. Children begin to think logically about conservation problems and other situations as well. However, they typically can apply their logical operations only to concrete, observable objects and events.

Formal operations: the fourth and final stage usually appears after children are 11 or 12 years of age and continues to evolve for several years after that time. During this time the child develops the ability to reason with abstract, hypothetical, and contrary-to-fact information.

Vygotsky's developmental theory:

This Russian psychologist conducted numerous studies of children's thinking. Some of his most influential ideas are:

Complex mental processes began as social activities. As children develop, they gradually analyze these processes and can use them independently of those around him. Vygotsky called this process of social activities being internalized as mental activities (internalization).

Children can often accomplish more difficult tasks when they have the assistance of other people more advanced and competent than themselves.

Tasks within the *zone of proximal development* promote maximum cognitive growth. This is the zone of learning for a child where he can learn something with the

assistance of others. Without such assistance, he would not be able to learn the subject.

The idea of *scaffolding* learning comes from Vygotsky's *zone of proximal development* theory. Scaffolding refers to learning situations in which adults and other more competent individuals provide some form of guidance or structure that enables students to engage in learning activities within their zone of proximal development.

Verbal Learning Research

Verbal learning research is another area that has affected cognitive theory. Verbal learning research studied serial learning and paired social learning. *Serial learning* is characterized by a particular pattern. People usually learn the first few items and the last few items first of a list (i.e., they are more likely to forget items from the middle of the list than the beginning or the end).

Overlearning is learning something to the level of mastery and then practicing additionally. Overlearned material is more easily recalled at a later time.

Distributed practice is easily more effective than massed practice. This is the idea of spreading study out over time instead of into one long cram session. Learning in one situation often affects learning and recall in a later situation.

The characteristics of the material affect the speed with which people can learn it. For example, items are more quickly learned when they are meaningful, pronounceable, concrete rather than abstract, or able to be mentally visualized.

People often impose meaning when learning new information. People organize what they learn. People are more likely to learn general ideas than to learn words verbatim.

People often use coding strategies to help them learn. (Examples: mnemonics -- like the strategy of remembering "HOMES" as a mnemonic for the names of the Great Lakes (Huron, Ontario, Michigan, Erie, and Superior; or a rhyme, like "In 1492, Columbus *sailed* the ocean blue" to remember that date)

Contemporary Cognitivism

General assumptions of cognitive theories:

1. Some learning processes may be unique to human beings. (Example, complex language.)
2. Cognitive processes are the focus of study. Mental events are central to human learning and they must therefore be incorporated into theories of learning.
3. The objective, systematic observations of peoples' behaviour should be the focus of scientific inquiry; however, inferences about unobservable mental process can often be drawn from such study.
4. Individuals are actively involved in the learning process. They are not passive receivers of environmental conditions; they are active participants in that learning process. In fact, they can control their own learning.
5. Learning involves the formation of mental associations that are not necessarily reflected in overt behaviour changes. This is very contrary to the behaviorist

position, where no learning can happen without an external behavior change. This is contrasted with behavioural objectives.

6. Knowledge is organized. An individual's knowledge is self organized through various mental associations and structure.

7. Learning is a process of relating new information to previously learned information. Learning is most likely to occur when an individual can associate new learning with previous knowledge.

Information Processing Theory

This theory focuses on how people process the information they receive from the environment; how they perceive the stimuli around them, how they put what they've perceived into their memories, and how they find what they have learned when they need to use the knowledge.

Constructivism:

In the last 30 years, it has become apparent that people don't just receive information at face value. Instead, learners do a great deal with the information they acquire, they actively organize and try to make sense of it. This is often done in a unique and special way. Most cognitive theories now show learning as a construction of knowledge rather than just a reception or absorption of knowledge from the surrounding world.

Contextual views:

Several cognitive theories have emerged that place considerable emphasis on the importance of the immediate environment (i.e., the context) in learning and behaviour. This view includes the *zone of proximal development*. Contextual use of learning has many labels, such as *situated learning*, *situated cognition*, and *distributed intelligence*. Distributed intelligence is shown when we think about and discuss ideas with others and think more intelligently than when we think alone.(Ormrod,1999)

General educational implications of cognitive theories:

1. Cognitive processes influence learning.
2. Learning difficulties often indicate ineffective or inappropriate cognitive processes, especially for children with learning disabilities, who tend to process information less effectively. Therefore, teachers need to be aware that all students are trying to learn something, as well as what they are trying to learn.
3. As children grow, they become capable of increasingly more sophisticated thought.
4. People organize the things they learn. Therefore, teachers can facilitate students' learning by presenting information in an organized manner. This organization should reflect students' previous knowledge and show how one thing relates to the other (i.e., helping students understand and make connections).

5. New information is most easily acquired when people can associate it with things they have already learned. Teachers should then show how new ideas relate to previous learning.

6. People control their own learning. Ultimately students, not their teachers, determine what things will be learned and how they will be learned.

Appraisal of literature review

This study is aimed at determining the impact of Emotional Learning System and Peer Mentoring on emotional intelligence skills on academic achievement of Senior Secondary school students. In this chapter, relevant literatures have been reviewed. Overview of Emotional intelligence, Emotional Intelligence Skills, Gender difference and Emotional Intelligence, Emotional Intelligence and Academic Achievement, Determinants of poor academic achievements, Emotional Learning System, Studies on the effectiveness of Emotional Learning System, Peer Mentoring, Studies on the effectiveness of Peer Mentoring, Emotional Intelligence and Intellectual Intelligence, Emotional Intelligence Curriculum, Emotional Intelligence and Teacher Education and Theory of Learning as they affect emotional intelligence and academic achievement were exhaustively reviewed based on the available literatures.

Emotional intelligence reflects a person's ability to deal with daily environmental challenges and help predict one's success in life – including professional and personal pursuits. This is true with almost all the available literature reviewed. The positive influence of emotional intelligence on academic achievement is evident in most research works. However, the precise ways in which to improve the level of

positive influence of emotional intelligence on academic achievement to obtain optimal success is far from clear, as researchers till date have not carried out any comparative study on impacts of Emotional Learning System and Peer Mentoring on academic achievement. Also, most of the studies done so far have concentrated on the influence of these intervention programmes in work place and tertiary level of education to the utter neglect of secondary schools.

Lack of literature on the relative effectiveness of Emotional Learning System and Peer Mentoring in developing emotional intelligence skills and academic achievement of secondary school students in our clime has created a wide gap between the literature reviewed and the present research work hence, the need for this study.

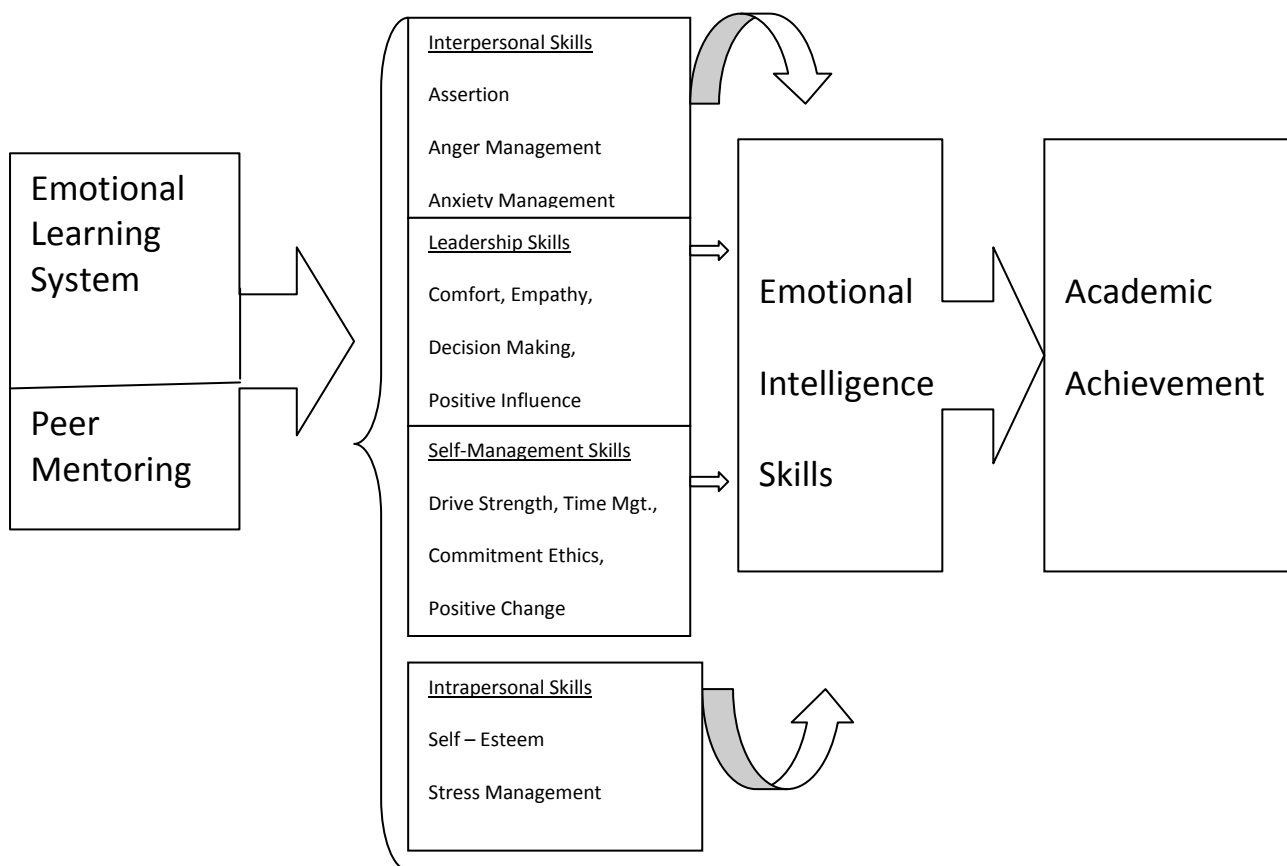


Figure 2: Conceptual Model for the Study

The model illustrated above compares the relative effectiveness of Emotional Learning System and Peer Mentoring in enhancing Interpersonal, Self-Management, Leadership and Intrapersonal skills and hence, Emotional intelligence skills which in turn influence learning outcome in terms of academic achievement.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter discusses the research design, area of study, population, sample and sampling technique, instrumentation, scoring of instrument, validation of the instrument, reliability of instrument, procedure for data collection, procedure for data analysis and treatment procedures.

3.1 Research design

The research design used for this study was quasi-experimental (pre-test/post-test control group design). The term quasi-experimental design refers to the application of an experimental mode of analysis and interpretation to bodies of data not meeting the full requirements of experimental control. It is difficult to randomly assign subjects to treatment conditions in a natural setting because it is not possible to control the influence of extraneous variables through other techniques hence the use of quasi-experimental design so as to tease out the influence of the treatment condition. The design comprised of three groups: two experimental groups (in which one received emotional learning system and another received peer mentoring approach) and one control group (waiting group) which did not receive any treatment.

3.2 Area of study

The study was carried out in Lagos State of Nigeria. Lagos is geographically located in the South West of Nigeria. Lagos State was created on May 27, 1967 by virtue of State (creation and transitional provisions) decree no. 14 of 1967, which structured Nigeria's federation into 12 States. The State is bounded by Ogun State in the East and North, adjoins Atlantic Ocean in the south while on the west by the Republic of Benin. It lies on latitude 6° 27' 11"N and 3° 23' 45"E. Lagos State was selected because it is one of the most educationally advanced States.

3.3 Population of the study

The target population of the study are senior secondary school students in Lagos, Nigeria. The participants comprise of all male and female senior secondary school students.

3.4 Sample and sampling procedure

Stratified random sampling was employed for the selection of the two Education Districts used for the study. Stratified random sampling method was used for the selection of the three Education Zone from the Districts– namely, Mushin, Amuwo Odofin and Oshodi/Isolo zones. Using stratified random sampling method three public senior secondary schools were selected from the education zone for the study.

The schools were;

1. Amuwo Odofin Senior High School,
2. Central High Senior Secondary School, Okota.
3. Ajumoni Senior Grammar School.

Using stratified random sampling procedure, from a total of 12 intact classes, six intact classes were selected. A total of 240 participants comprising of both female and male SS3 students were selected by simple random sampling for the baseline assessment of the study .The sample comprised of eighty participants drawn from each of the 3 selected secondary schools in the ratio of forty participants per class.

The baseline assessment was done using the Exploring and Developing Emotional intelligence skills Questionnaire (EDEISQ) and the Achievement test (in mathematics, English language and biology).The maximum possible score obtainable by a participant is 260 in EDEISQ and 60 in Achievement test. 156 participants who scored below 130 in the EDEISQ and 30 in the Achievement Test which was the cut-off point fixed by the researcher (50% of the total score on each instrument) were deemed to have low level of emotional intelligence and academic achievement. These 156 participants consist of 55 participants in school 1, 51 participants in school 2 and 50 participants in school 3. Schools were randomly assigned to treatment conditions and control group. See table 2:

Table 2: Distribution of Participants by Gender and Treatment Groups

Groups	Male	Female	Total
School 1			
Emotional Learning System	28	27	55
School 2			
Peer Mentoring	18	33	51
School 3			
Control	30	20	50
Total	76	80	156

3.5 Instrumentation

The research instruments used to obtain relevant data for this study were:

1. Exploring and Developing Emotional Intelligence Skills Questionnaire
2. Achievement test (in Mathematics, English Language and Biology).

3.5.1 Exploring and developing emotional intelligence skills questionnaire

The **Exploring and Developing Emotional Intelligence Skills Questionnaire** (EDEISQ) was used for the purpose of this study. This instrument was used intentionally for assessing emotional intelligence and was developed by Darwin B. Nelson, Ph.D. and Gary R. Low, Ph.D in 1998 (Stottlemeyer 2002). The EDEISQ

provided the foundation for an emotional intelligence skills development model. EDEISQ was adapted for the study in the following ways to make it more suitable for use in our secondary school setting. Original introductions were omitted from the adapted version. Brief instructions were included at the top of the instrument and given orally at the time of administration. Vocabularies and statements that were specifically work oriented were changed to reflect the academic setting e.g. 'career' and 'supervisor' were changed to 'school' and 'teacher'. The instrument had two main sections:

Section 1: This section obtained from the respondents their personal background data such as, class, gender, school, and identification number.

Section 2: This section was a 130-item scale that measured the respondent's emotional intelligence skills in four major dimensions:

Part A: This section was a 30-item scale that measured the respondent's interpersonal skill. The scale had three sub-units, namely: Assertion, Anger Management and Anxiety Management

Part B: This section was a 40-item scale that measured the respondent's leadership skill. The scale had four sub-units, namely: Social Awareness, Empathy, Decision Making, and Positive Influence

Part C: This section was a 40-item scale that measured the respondent's Self-management skill. The scale had four sub-units, namely: Drive Strength, Time Management, Commitment Ethic, and Positive Change

Part D: This section is a 20-item scale that measured the respondent's intrapersonal skill. The scale had two sub-units, namely: Self-esteem and Stress management.

The EDEISQ instrument comprises various situational statements under each of the four dimensions and delineated further by the skills previously mentioned. After every situational statement, choices are given as to whether the statement means "more like or descriptive of you," "sometimes like "and "least like." Scores are then tallied after every dimension at the end of the assessment. The scores indicated whether each particular skill measured needed to be developed.

Below are some samples of the item:

	PART A: INTERPERSONAL SKILLS	M	S	L
	Assertion			
1	When I am really angry at someone, I usually feel some tension, but comfortable in expressing exactly what is on my mind.			
	Anger Management			
1	When I am really angry at someone, I usually feel hostile and the need to verbally attack.			
	Anxiety Management			
1	When I am really angry at someone I usually feel anxious or confused about what to say.			
	PART B: LEADERSHIP SKILLS	M	S	L
	Social Awareness			
1	My voice is clear and easily heard by others.			
	Empathy			
1	I am a caring person and people seem to sense this in me.			
	Decision Making			
1	I make a decision and act on it.			
	Positive Influence			
1	I make strong and positive impact on majority of people I meet			
	PART C: SELF-MANAGEMENT SKILLS	M	S	L
	Drive Strength			
1	I set specific goals for my life.			
	Time Management			
1	I organize my school work into an efficient personal time schedule.			
	Commitment Ethic			
1	I am considered a dependable person.			
	Positive Change			
1	One of the things I need to change most is how I feel about myself as a person			
	PART D: INTRAPERSONAL SKILLS	M	S	L
	Self-Esteem			
1	I am a cheerful person.			
	Stress Management			
1	Even though I have studied I do not feel successful.			

Psychometric properties of EDEISQ

Stottlemeyer(2002) reported that the range of internal consistency shows reliability coefficient of 0.8936 using Cronbrach's alpha technique and of 0.9116 with a standardized item-alpha. The validity of the original version of the Personal Skills Map (an earlier version of EDEIS) was based on the completion of scale-by-scale correlations for the Personal Orientation Inventory, the Edwards Personal Preference Schedule, the Sixteen Personality Factor Questionnaire and the Minnesota Multiphasic Personality Inventory. All assessments purport measurement of mental and emotional health (Nelson and Low, 1979). The findings suggest that the Personal Skills Map effectively discriminates personal skill levels of normal adults (Stottlemeyer, 2002).

Scoring of EDEISQ

Information from section 1 requested of the participants their personal background information. Section 2 consisted of 130 items with four dimensions and information gathered was scored by their respective scoring keys. Participants were expected to respond to each statement by placing a tick [✓] in one of the three possible options or responses. The three options and their scores are as follows:

Most likely–2; Sometimes likely–1; Least likely–0

Part A consisted of 30 statements which measured the level of interpersonal skill of the respondent. The maximum score expected from this dimension was 60, while the lowest score was 0.

Part B consisted of 40 statements which measured the level of leadership skill of participants. The maximum score expected for each respondent from this dimension was 80, while the lowest score was 0.

Part C consisted of 40 statements which measured the level of self-management skill of participants. The maximum score expected for each respondent from this dimension was 80, while the lowest score was 0.

Part D consisted of 20 statements which measured the level of intrapersonal skill of participants. The maximum score expected for each respondent from this dimension was 40, while the lowest score was 0.

3.5.2 Achievement test

This is a 60-item multiple choice objective tests compiled by the researcher from West Africa Examination Council past question papers on mathematics, English language and biology. It is divided into three sub-sections of 20 questions each on the subject areas. It has test-retest reliability co-efficient of 0.64 at 0.05 level of significance when tested during the pilot study.

Below are some samples of the items:

PART 1: BIOLOGY

Instruction: Answer all questions in this section.

1. For normal growth plants require----- in very little quantity.
 - a. Scarce element b. Micro elements c. Trace elements d. Test nutrients
2. Oxygen is the byproduct of -----
 - a. Respiration b. Combustion c. Photosynthesis d. Transpiration.

PART II: ENGLISH LANGUAGE

Instruction: You are to answer all the questions in this section.

Choose the word or phrase that is **nearly opposite in meaning** to the word underlined in questions 1-10.

1. He **extinguished** the fire as he saw it threatening to burn the house.
 - a. Kindled b. Fanned c. Switched d. Put off
2. Since the accused pleaded **guilty**, the judge insisted that he should be pardoned.
 - a. Ignorant b. Innocent c. Free d. Guiltless.

PART III: MATHEMETICS

Instruction: answer all questions.

1. Find the range of the set of the following value: 3, 8, 9, 0, -5, 7, 1, -2
 - a. 11 b. 9 c. 14 d. -11 e. 4
2. Express in standard form 0.0003456

- a. 34.56×10^8 b. 3.456×10^7 c. 3.456×10^{-4} d. 3456×10^4 e. 345.6×10^{-4}

3.6 Validity of the instruments

The validity of a test represents “the truth of the measure, the degree to which the test is capable of achieving a predictive goal (Byrne and Kelley, 1981). This is important to ensure that the effectiveness of any data gathering procedure is achieved.

For this study, the procedure was to have the face validity of the instruments- the face validity of test refers to how the instrument appears to measure what it purports to measure (Aiken, 1988). The face validity of the study instruments were established by giving them to 3 test-construction specialists, all of whom certified the face validity.

3.7 Reliability of the instruments

The term reliability refers to the consistency of scores obtained by the same person on repeated administration of the same test or with different sets of equivalent items (Anastasi, 1976). Even though, EDEISQ which is one of the instruments has already been tested for its reliability, it was necessary to test it again in the Nigerian setting.

A pilot study was carried out to determine the test-retest reliability index of the instruments. The Exploring and Developing Emotional Intelligence skills Questionnaire (EDEISQ) and Achievement Test were administered to thirty participants randomly selected from SSS3 students of Okota Senior Secondary School in Education District VI of Lagos State were used for the pilot study. The

interval between the first and the second administration was three weeks. The correlation between the two set of scores was determined using Pearson's Product Moment Correlation method. Results of the Correlation are given below:

Table 3: Test Re-Test Reliability Estimate of the Research Instruments

Instrument	Variable	N	Test Position	\bar{X}	SD	r_n
Achievement Test	Performance	30	1 st	29.6	4.5	0.64
	Achievement		2 nd	29.8	5.5	
EDEIS	EQ Scale	30	1 st	139	13.4	0.81
			2 nd	140	16.8	
	Interpersonal	30	1 st	29.6	4.6	0.66
			2 nd	30.1	4.4	
	Leadership	30	1 st	42.2	7.2	0.78
			2 nd	43.2	9.1	
	Self – Management	30	1 st	45.3	5.7	0.76
			2 nd	44.9	8.4	
	Intrapersonal	30	1 st	22.8	4.9	0.69
			2 nd	23.2	4.6	

3.8 Appointment and training of research assistants

For the collection of data, the researcher appointed 2 research assistants. These assistants were 2 postgraduate students of the University of Lagos, trained in two sessions of one hour each. These training sessions covered the following areas:

- Orientation with the instrument and the value of emotional intelligence skills on academic achievement.
- Successful administration of the instrument to ensure that students responded honestly, openly and accurately.

3.9 Procedure for data collection and permission to conduct research

With a letter of introduction from the Department of Educational Foundations, University of Lagos, the researcher sought and got permission from the principals of the selected schools used for the study. The purpose of the study and the benefits to be derived though not in detail were discussed and explained. The principals granted the permission and allowed the use of any of the classrooms during reading/prep hour. The researcher was introduced to the Vice Principals (academics) and Class Teachers in each of the schools who assisted throughout the period of the study.

3.10 Procedure for data analysis

The data were analysed hypothesis by hypothesis as shown below.

Hypothesis 1:

There is no significant difference in post-test scores on emotional intelligence skills of participants exposed to Emotional Learning System, Peer Mentoring and Control group.

Independent Variable: Emotional Learning System and Peer Mentoring

Dependent Variable: Emotional Intelligence Skills

Statistical tool: Analysis of covariance

Hypothesis 2:

There is no significant difference in post test scores on academic achievement of participants exposed to Emotional Learning System, Peer Mentoring and control group.

Independent Variable: Emotional Learning System and Peer Mentoring

Dependent Variable: Achievement Test.

Statistical tool: Analysis of Covariance

Hypothesis 3:

There is no significant gender difference in post test scores on emotional intelligence skills due to experimental conditions of participants.

Independent Variable: Emotional Learning System and Peer Mentoring

Dependent Variable: Gender information on participants' emotional intelligence skills

Statistical tool: Analysis of Covariance.

Hypothesis 4:

There is no significant difference in post test scores on interpersonal skills of participants in the two experimental groups and the control group.

Independent Variable: Emotional Learning System and Peer Mentoring

Dependent Variable: Interpersonal Skills.

Statistical tool: Analysis of covariance.

Hypothesis 5:

There is no significant difference in post test scores on leadership skills of participants in the two experimental groups and the control group.

Independent Variable: Emotional Learning System and Peer Mentoring

Dependent Variable: Leadership skills.

Statistical tool: Analysis of covariance.

Hypothesis 6:

There is no significant difference in post test scores on self-management skills of participants in the two experimental groups and the control group.

Independent Variable: Emotional Learning System and Peer Mentoring

Dependent Variable: Self- management skills.

Statistical tool: Analysis of covariance.

Hypothesis 7:

There is no significant difference in post test scores on intrapersonal skills of participants in the two experimental groups and the control group.

Independent Variable: Emotional Learning System and Peer Mentoring

Dependent Variable: Intrapersonal skills.

Statistical tool: Analysis of covariance.

Hypothesis 8:

There is no significant relationship between emotional intelligence skills and academic achievement among senior secondary school.

Independent Variable: Emotional Learning System and Peer Mentoring

Dependent Variable: Emotional Intelligence skills and Achievement Test

Statistical tool: Pearson product moment coefficient (r).

3.11 Treatment package: procedure

The intervention programme for emotional intelligence was carried out in three phases:

Phase I: Pre –Treatment assessment

Pre-treatment assessment instrument -Exploring and Developing Emotional Intelligence Skills Questionnaire (EDEISQ) and the Achievement Test were administered to the participants by the researcher to help determine each participant's level of emotional intelligence and academic performance.

Phase II: Treatment

The intervention programme was carried out over a period of 10 weeks. One week each was used for both the pre-test and post-test. The treatments consisted of Emotional learning system and Peer mentoring techniques. Participants in the two treatment groups were exposed to one hour thirty minutes of training/discussion once per week for 8 consecutive weeks. The control group did not receive any treatment. However, they were exposed to the Emotional learning system two weeks after the treatments were concluded so that the control group could benefit from the research because it was the treatment that worked better.

Phase III: Post Treatment assessment:

At the end of the treatment, the research Instruments (EDEISQ and Achievement Test) were administered again to both the treatment groups and control group to know the effects of the treatment on the participants.

Treatment 1: Emotional learning system

The aim of this treatment is to use its step-by-step process to help participants become more emotionally reflective and constructive in their thinking. Once an individual becomes emotionally reflective and constructive, the choice of behaviour is positive. The emotional learning system helps individuals to balance their feelings and thoughts to produce intentional behaviours that are called emotional intelligence skills. This system also uses person-centred assessment, reflection, constructive thinking, and skill development lessons to guide student learning. The five-step learning processes are: Step A (Self-Assessment: Explore) which requires that one develops an intentional self-assessment habit. Step B (Self-Awareness: Identify) which involves the process of identifying one's experience and labelling the emotion. Step C (Self-Knowledge: Understand) which involves insight and understanding of an emotion that allows one to make a choice about behaviours. Step D (Self-Development: Learn) which involves learning various ways to improve one's behaviour and experience positive outcomes. Step E (Self-Improvement: Apply and Model) which requires that one practice emotional intelligent behaviour to achieve personal success.

SESSION 1: Establishment of relationship

The researcher focused on relationship building and creating a healthy and supportive learning environment for students. The key activities for this session were the following:

- Identification of group goals and objectives of the exercise.

- Duration of the exercise and rules of engagement
- Responsibilities of members were given.
- Checked scoring, response patterns, skill levels and developed a group skills profile for the class as a whole.

SESSION 2: Teaching the emotional system

Presentation to the participants focused on:

What is an emotion?

- What is the difference between a thought and a feeling?
- What are primary emotions?
- What is emotional intelligence?
- Breaking the emotional reactivity habit.
- High achievement and self-directed learning.

Learning activities were carried out based on the following activity worksheet:

- What are the emotions that we feel? (Appendix 1)
- Label these emotions. (Appendix 2)
- An emotionally intelligent student's characteristics.(appendix 3)

SESSION 3: Teaching how to develop an emotionally healthy mind.

Presentation to the participants focused on:

- The Emotional Learning System (ELS) – explore, identify, understand, learn, apply and model.
- Applying the ELS

- Learning strategy – self-directed coaching.
- School success factors.

Learning activities were on the activity worksheets.

- School success factors.(Appendix 4)
- Applying the ELS.(Appendix 5)

SESSION 4: Teaching how to develop self-management skills.

Focus was on developing an understanding of self-management as intelligent self-direction in career and life dimensions. Applying ELS, the following was carried out:

- A. Explore: this activity was carried out by participants in the first phase through the administration of the pre-assessment test by using EDEISQ.
- B. Identify: current level of development was identified by each participant assessing pre-test scores on the self management skills. Participants who had low scores were given more attention.
- C. Understand: the researcher explained in details the self-management skills, focusing on the following:
 - Meaning and function of Drive strength
 - Meaning and function of Commitment ethics
 - Meaning and function of Time management
 - Meaning and function of Positive change
- D. Learn: the process entailed recognizing and intentionally learning how to use these components.
- E. Apply and Model: the practical application of the components are as follows:

- Drive strength – in line with the goal statement written by all the participants, a worksheet with a checklist as a guide for each goal set (Appendix 6) was provided and used to check goal.
- Commitment ethic - using the worksheet (Appendix 7) participants were asked to inventory most important achievements of the past that produced positive feelings and describe any important value represented by each achievement. The commitment ethic calendar for high personal achievement was made available for the participants and they were taught how to use it as checklist.(Appendix 8)
- Time management – participants were detailed to set aside 15 minutes (early morning or evening), list five important personal meaningful goals that they wished to accomplish daily on worksheet provided (Appendix 9). Using the time-watch (Appendix 10) to organize their daily activities and intentionally follow these activities for academic success.
- Positive change – participants were instructed to describe on a sheet of paper, a behaviour that they felt they should change. For each of the identified behaviour, the steps outlined on the sheet (Appendix 11) were followed and discussed.

At the end of the session the participants were allowed to take home the activity worksheets as assignments.

SESSION 5: Teaching how to develop Interpersonal Skills

The researcher began the session by reviewing the previous session's assignments. Focus on this session was on developing an understanding of communication styles, patterns and identifying problem areas of behaviour. Applying the ELS, the following activities were carried out:

- A. Explore: this activity was carried out by participants in the first phase through the administration of the pre-assessment test by using EDEISQ.
- B. Identify: participants current levels of development were identified by recalling pre-test scores on the interpersonal skills. Participants who had low scores were given more attention.
- C. Understand: the researcher explained details of interpersonal skills based on the components:
 - Meaning and function of Assertive Communication
 - Meaning and function of Anger management
 - Meaning and function of Anxiety management
- D. Learn: participants were taught how to recognize and intentionally know how to use these components.
- E. Apply and Model: the practical application of the components were as follows:
 - Assertion – participants were taught how they could always try to use the first person singular pronoun (I), describe events or situations that are connected to their thought and describe it clearly. Also, they should let the other person know what they want to have happened instead of what is currently the case.

- Anger management: this concept was explained and participants were assigned to practice anger control and time-out skills using worksheet – (Appendix 12) that was provided.
- Anxiety management: the researcher explained anxiety and the participants were taught how to manage it by allowing them to describe a recent incident or situation when they deferred to someone else and what they thought they should have done using the guided format in the handout provided. (Appendix 13).

At the end of the session the participants were allowed to take home the activity worksheets as assignments.

SESSION 6: Teaching how to develop leadership skills

The researcher began the session by reviewing previous session's assignments. Focus on this session was on developing and understanding of personal leadership skills. In applying the ELS the following activities were carried out:

- A. Explore: this activity was carried out by participants in the first phase through the administration of the pre-assessment test by using EDEISQ.
- B. Identify: participants' current levels of development were identified by recalling pre-test scores on the leadership skill. Participants who had low scores were given more attention.
- C. Understanding: researcher explained in details the various components in leadership skills in line with the following to the participants:
 - Meaning and function of Social awareness.

- Meaning and function of Empathy.
- Meaning and function of Decision-making.
- Meaning and function of Positive influence.

D. Learn: participants were taught the importance of recognizing and intentionally learning how to use these skills.

E. Apply and model: the practical application of the components were as follows:

- Social awareness –as part of social awareness, participants were taught the following steps as practical guidelines for intentional behaviour when listening actively:
 - Make eye contact with the speaker
 - Make a conscious decision not to interpret, judge or advise the speaker
 - Put aside your own thoughts and focus on the other person
 - Use questions to clarify where you don't understand.
- Empathy – using a worksheet (Appendix 14) which was given by the researcher to the participants, four statements were made and the participants were expected to determine the feeling underlying each statement.
- Decision-making – based on a worksheet (Appendix 15) provided by the researcher the participants were taught to select a problem that was important to them and attempted to resolve the problem with others and asked for feedback and suggestions.
- Positive influence – participants were each asked to develop a mission statement that was unique and meaningful to them, including their most important beliefs which ignite leadership competence skills.

At the end of the session the participants were allowed to take home the activity worksheets as assignments.

SESSION 7: Teaching how to develop intrapersonal skills

The researcher began the session by reviewing previous session assignments. Focus on this session was on developing and understanding of intrapersonal growth as an essential process of managing life stress. In applying the ELS the following activities were carried out:

- A. Explore: this activity was carried out by participants in the first session through the administration of the pre-assessment test by using EDEISQ.
- B. Identify: participants' current levels of development were identified by recalling pre-test scores on the intrapersonal skills. Participants who had low scores were given more attention.
- C. Understand: researcher explained in details the various components, focusing on the following:
 - Meaning and function of self-esteem
 - Meaning and function of stress, personal stressor and stress management.
- D. Learn: the researcher helped the participants to recognize and intentionally learn these components.
- E. Apply and Model: practical application in this process were explained as follows:
 - Self-esteem – the researcher goes through cognitive restructuring process work sheet (Appendix 16) with participants after which they were allowed

to go through the worksheet by themselves and respond to the cognitive restructuring exercise on the worksheet (Appendix 17).

- Stress management: personal stressors were identified by participants by using the identifying personal stressor worksheet (Appendix 18) with the guide of the researcher. A write-up on the positive imagery relaxation (Appendix 19) was handed out to participants. The researcher read through and explained the write-up. After the explanation the researcher developed an example in the class and participants were instructed and guided to create their own positive imagery.

At the end of the session the participants were allowed to take home the activity worksheets as assignments.

SESSION 8: Review and termination of treatment

The researcher began the session by reviewing previous session's assignments. The researcher gave general overview of the entire treatment with the aid of Appendix 20 (on emotional curriculum attitudes and behaviours). The aim of the treatment which is to improve the intentional habit (emotional intelligence) was emphasized. All participants with specific needs were attended to and they were informed that the next session of the programme would be in a weeks' time. This was for the post-test assessment test.

Treatment 2: Peer mentoring

The objective of Peer mentoring programme is to help both mentors and mentees, develop and advance their interpersonal, leadership, self-management and

intrapersonal skills. Peer mentoring is also aimed at increasing participants' self-esteem and academic self-efficacy, as well as general satisfaction with their academic programme. While the effects listed above fall under a psychosocial category. There are also many academic benefits of peer mentoring; such as positively influencing the career choices students make, their perseverance in following their educational goals, and their achievement in education.

SESSION 1: Establishment of relationship

The researcher focused on relationship building and creating a healthy and supportive learning environment for students. The key activities for this session were the following:

- Identification of group goals and objectives of the exercise.
- Duration of the exercise and rules of engagement
- Responsibilities of members are given
- Check scoring, response patterns, skill levels and develop a group skills profile for the class as a whole.

SESSION 2: Explaining the emotional system

Presentation to the participants focused on: What is an emotion?

- What is the difference between a thought and a feeling?
- What are primary emotions?
- What is emotional intelligence?
- Breaking the emotional reactivity habit.
- High achievement and self-directed learning.

Learning activities were carried out based on the following activity worksheet:

- What are the emotions that we feel? (Appendix 1)
- Label these emotions.(Appendix 2)
- An emotionally intelligent student's characteristics.(Appendix 3)

SESSION 3: Establishing peer mentoring groups (case formulation)

Ten sub-groups were formed and ten mentors (participants who scored above average) were selected based on the pre-test score sheet. The researcher ensured that each of the ten mentors was assigned to each group. This approach guaranteed a fair distribution of mentor and mentee materials among the groups throughout the treatment period. The roles of the mentees were clearly articulated as follows:

1. Treat the mentorship as professional development (an undertaking that requires serious commitment of time and effort.
2. Don't avoid your mentor
3. Show receptivity to your mentor's advise
4. Don't interpret critical views of your performance/progress as a personal attack

Also the roles of the mentors were state as follows:

1. Encourage your mentee colleague to become involved in discussions and activities
2. Don't do all the talking, because mentoring requires more of active and careful listening.
3. Don't over-formalize the mentorship.

Researcher gave guidelines to mentors for session 4 for proper focus.

SESSION 4: Discussion in groups on self-management skills.

Based on the researcher's guidelines, the mentor moderated group discussion along the following line:

- Determining the group members' current approaches to academic work.
- Broadening the group members' knowledge of how to apply the strategies discussed by themselves academically
- Encourage group members' to think about issues that can affect their academic performance
- Encourage group members to plan ahead and to use the strategies that enhance their performance.
- Emphasize that approaches to learning and interactions with others can also help in performing well academically.
- Group members should mention some negative behaviours that inhibit success and ways they can be eliminated.

At the end of this session, Participants were asked to meet daily outside the formal session to share their experiences and mentor (Appendix 21)/mentee (Appendix 22) worksheets were shared out for use during their daily meetings. The researcher gave guidelines to the mentors for session 5 for proper focus.

SESSION 5: Discussion in groups on interpersonal skills.

Participants returned worksheets from the previous session to the researcher.

Along the researchers' guidelines the mentors moderated their groups' discussion based on the following:

- Encouraging the mentees to be cooperative with their peers in the school.
- Managing the balance between competition, cooperation and individualism
- Emphasizing that there is strength in diversity and in forming supportive relationships with other students and teachers.
- Raising the group members' awareness of their interaction with others and encouraging openness in learning from these experiences.
- Increasing the group members' confidence, comfortableness and sense of belongingness in the school.
- Developing an understanding of how they could successfully operate within the system (e.g., having knowledge of their rights and how to approach people in the system).

At the end of this session, Participants were asked to meet daily outside the formal session to share their experiences and mentor (Appendix 21)/mentee (Appendix 22) worksheets were shared out for use during their daily meetings.

The researcher gave guidelines for session 6 to the mentors for proper focus.

SESSION 6: Discussion in groups on leadership skills.

Participants returned worksheets from the previous session to the researcher.

Based on the guidelines given by the researcher to the mentors for this session, the group discussion focused on:

- Importance of active listening and learning – to do less of the talking during discussions with other students.
- Understanding problems in terms of ineffective solution and not in terms of barriers to happiness.

- Raising group awareness to accept the fact that living means having problems, identifying them and proffering solutions.
- Realizing that all decisions cannot always be right.
- Develop the consciousness of wanting to affect your fellow students positively e.g by assisting them in class assignments, organizing subject group discussions and reminding subject teachers of teaching periods.

At the end of this session, Participants were asked to meet daily outside the formal session to share their experiences and mentor (Appendix 21)/mentee (Appendix 22) worksheets were shared out for use during their daily meetings. The researcher gave guidelines for the next session for proper focus.

SESSION 7: Discussion in groups on intrapersonal skills.

Participants returned worksheets from the previous session to the researcher. Intrapersonal skills focusing on the guidelines given by the researcher to the mentors, the following were discussed:

- Allowing the group members to state actions that affected their self-esteem in school among peers and with teachers.
- Discuss strategies that assisted the group members with improving their self-esteem and encouraged them to utilize these strategies.
- Mentors stated methods they have used to reduce stress in school. Other coping strategies were shared in the groups and mentees were encouraged to practice the strategies they could use without any assistance.

At the end of this session, Participants were asked to meet daily outside the formal session to share their experiences and mentor (Appendix 21)/mentee (Appendix 22) worksheets were shared out for use during their daily meetings.

SESSION 8: Review and termination of treatment

This final session was a plenary session (coming together of all the groups).

Experiences were shared by mentees, while mentors were asked to assess the mentees to see if the planned improvement had taken place based on the various skills. The researcher informed participants that the next session of the programme will be in a week's time. This was for the post-test assessment test.

CHAPTER FOUR

RESULTS OF DATA ANALYSIS

4.0 Introduction

This chapter presents the results obtained from various statistical analyses carried out in the study. Eight null hypotheses were formulated to guide the study. The data collected using the various instruments were analysed using descriptive statistics such as mean scores, standard deviation and mean deviation. While inferential statistics such as Fisher's protected t-test was used for pair-wise comparison of group means appropriate for each hypothesis. All hypotheses were tested using Analysis of Covariance (ANCOVA) at 0.05 level of significance. The results obtained from the various statistical analyses carried out are presented below:

4.1 Test of hypotheses

Hypothesis One

Hypothesis one in the null form states that there is no significant difference in post test scores on emotional intelligence skills among participants exposed to emotional learning system, peer mentoring and control group. The data were analyzed using Analysis of Covariance statistic and the result of the analysis is as presented in Tables 4, 5 and 6 respectively.

Table 4: Descriptive data on emotional intelligence skills across experimental groups.

		Pre- test		Post – test		
Group	N	\bar{X}	SD	\bar{X}	SD	MD
Emotional Learning						
System	55	148.32	18.74	172.26	19.79	23.94
Peer Mentoring	51	150.96	16.54	161.18	17.73	10.22
Control	50	148.68	17.35	148.58	17.65	0.10

Table 4 shows the pre-test and post-test scores of participants in the three experimental groups. It was noted that the participants exposed to emotional learning system had the highest post-test score on emotional intelligence ($\bar{X} = 172.26$ and $SD = 19.79$) followed by participants exposed to peer mentoring ($\bar{X} = 161.00$ and $SD = 17.73$) while the control group had the lowest post test score of $\bar{X} = 148.70$ and $SD = 17.65$. As to whether significant difference exists in post test score in emotional intelligence due to experimental conditions; the result of the analysis is presented in Table 5.

Table 5: Analysis of Covariance on influence of experimental conditions on emotional intelligence skills

	Sum of Squares	Degrees of freedom	Mean of Squares	F-ratio
Sources of Variation				
Model	45153.51	3	15051.17	107.08
Covariate	364.65	1	364.65	2.59
Exp. Conditions	17856.14	2	8928.06	63.50*
Within Group	21510.39	152	140.59	
Total	66663.90	155		

*P < 0.05; df = 2 & 152; Critical F = 3.05

From table 5, it could be observed that a calculated F-value of 63.50 resulted as the difference in emotional intelligence skills due to experimental conditions. Thus, calculated F-value is significant since it is higher than the critical F-value of 3.05 given 2 and 152 degree of freedom at 0.05 level of significance. Consequently, the null hypothesis was rejected and the alternative hypothesis which states that there is a significant difference in post-test scores on emotional intelligence skills among participants exposed to emotional learning system, peer mentoring and control group.

Further analysis of data was done using Fisher's Protected t-test technique wherein pair wise comparison of the group means was done to determine whether

significant difference in emotional intelligence skills exist across the groups and the trend of the difference. The result of the analysis is presented in Table 6.

Table 6: Fisher's Protected t – test on difference in emotional intelligence skills across groups

	EmotionalLearning	PeerMentoring	Control
Group	n = 55	n = 51	n = 50
EmotionalLearning			
System	172.26 ^a	4.88 ^c	10.20 ^c
Peer Mentoring	11.26 ^b	161.00 ^a	5.19 ^c
Control	23.56 ^b	12.30 ^b	148.70 ^a

^aGroup means are in the diagonal; ^bdifference in group means is below the diagonal; ^cProtected t-values are above the diagonal. $P < 0.05$

The result from table 6 shows that participants exposed to emotional learning system significantly have higher emotional intelligence skills than either those exposed to peer mentoring ($t = 4.88$; $df = 104$; critical $t = 1.98$; $P < 0.05$) or those in the control group ($t = 10.20$; $df = 103$; critical $t = 1.98$; $P < 0.05$) respectively. Similarly, participants who received peer mentoring treatment significantly have higher emotional intelligence skills than those who are in control group ($t = 5.19$; $df = 99$; Critical $t = 2.00$; $P < 0.05$).

Hypothesis Two

Hypothesis two in the null form states that there is no significant difference in post test scores in academic achievement of participants exposed to emotional learning system, peer mentoring and control group. The data was analyzed using Analysis of Covariance statistics and the result of the analysis is as reported in Tables 7, 8 and 9 respectively.

Table 7: Descriptive data on influence of experimental conditions on academic achievement

		Pre-test		Post-test		
Group	N	\bar{X}	SD	\bar{X}	SD	MD
Emotional Learning						
System	55	27.68	5.92	36.51	5.37	8.83
Peer Mentoring	51	26.97	7.46	30.04	6.06	3.07
Control	50	26.81	6.44	26.22	6.27	0.59

Table 7 shows that adolescents exposed to emotional learning system had the highest post test score mean(\bar{X}) = 36.51 and SD = 5.37; followed by those exposed to peer mentoring (\bar{X} = 30.04 and SD = 6.06) while the control group had the least mean score of \bar{X} = 26.22 and SD = 6.27. To determine whether significant difference in academic achievement exist among the groups, analysis of covariance (ANCOVA) statistics was done. The result of the analysis is as presented in table 8.

Table 8: Analysis of Covariance on influence of experimental conditions on academic achievement.

Sources of Variation	Sum of Squares	Degree of freedom	Mean of Squares	F– ratio
Model	4187.64	3	1395.88	53.52
Covariate	473.92	1	473.92	18.05
Exp. Condition	1587.1	2	793.55	30.23*
Within Group	3989.92	152	26.25	
Total	8177.56	155		

*P < 0.05; df = 2 & 152; Critical F = 3.05

From table 8 it could be observed that a calculated F-value of 30.23 resulted as the difference in academic achievement due to experimental conditions. Thus, calculated F-value is significant since it is greater than the critical value F-value of 3.05 given 2 and 152 degrees of freedom at 0.05 level of significance. This leads to the rejection of the null hypothesis.

Further analysis was done using Fisher's protected t-test to determine which group differs from the other on academic achievement and the trend of the difference. The pair-wise comparison of the group means is as presented in Table 9.

Table 9: Fisher's Protected t – test on difference in academic achievement across groups

	Emotional	Peer	
	Learning	Mentoring	Control
Group	n = 55	n = 51	n = 50
Emotional	Learning		
System	36.51 ^a	-3.82 ^c	2.65 ^c
Peer Mentoring	6.47 ^b	30.04 ^a	6.34 ^c
Control	10.29 ^b	3.82 ^b	26.22 ^a

^aGroup means are in diagonal, ^bdifference in group means are below diagonal, ^cProtected t - values are above the diagonal. $P < 0.05$

Table 9 shows that participants exposed to emotional learning system significantly have higher academic achievement than those exposed to peer mentoring system ($t = -3.82$; $df = 104$; critical $t = 1.98$; $P < 0.05$). Participants exposed to emotional learning system significantly have higher academic achievement than the control group ($t = 2.65$; $df = 103$; critical $t = 1.98$; $P < 0.05$). Again participants exposed to peer mentoring system significantly have higher academic achievement than the Control group ($t = 6.34$; $df = 99$; critical $t = 1.98$; $P < 0.05$).

Hypothesis Three

Hypothesis three in the null form states that there is no significant gender difference in post-test scores on emotional intelligence skills due to experimental conditions of

participants. The hypothesis was tested using analysis of covariance statistics and the results of the analysis are as presented in Tables 10 and 11.

Table 10: Descriptive data on gender difference in the effect of experimental conditions on emotional intelligence skills.

			Pre-test		Post – test		
Group	Gender	N	X	SD	X	SD	MD
Emotional Learning							
System	Female	27	148.95	17.99	173.8	12.6	24.85
	Male	28	147.69	19.49	170.2	25.33	22.51
	Total	55	148.32	18.74	172.3	19.79	23.98
Peer Mentoring	Female	33	151.62	15.68	159.1	20.3	7.48
	Male	18	150.3	17.40	164.4	11.38	14.08
	Total	51	150.96	16.54	161	17.73	10.04
Control	Female	30	147.88	16.38	152.3	17.21	4.42
	Male	20	149.48	18.32	143.3	17.32	6.18
	Total	50	148.68	17.35	148.7	17.65	0.02

Table 10 shows that among participants exposed to emotional learning system, females had the highest mean score of 173.82 and standard deviation of 12.60 while males had mean (\bar{X}) score of 170.22 and standard deviation of 25.33. For those exposed to peer mentoring the males had higher mean(\bar{X}) score of 164.44 and standard deviation of 11.38, while the females had mean (\bar{X}) score of 159.12 and

standard deviation of 20.30. For the control group, females had mean (\bar{X}) score of 152.30 and standard deviation of 17.21 whereas, the males had the mean (\bar{X}) score of 143.30 and standard deviation of 17.30.

To determine whether gender differences exist on emotional intelligence skills of participants, analysis of covariance was done. The result of the analysis is presented in Table 11.

Table 11: Analysis of Covariance to test gender difference in the influence of experimental condition on emotional intelligence skills of participants.

	Sum of Squares	Degrees of Freedom	Mean of Squares	F – ratio
Sources of Variation				
Model	16172.70	6	2695.45	8.01
Covariate	507.60	1	507.60	1.50
Exp. Conditions	14948.06	2	7474.03	22.20*
Gender	382.68	1	382.68	1.14
Exp. Cond/Gender	1235.88	2	617.94	1.84
Within Group(error)	50491.20	149	336.61	
Total	6666.39	155		

*P < 0.05; df = 2 & 149; Critical F = 3.05

From table 11, it could be observed that a calculated F-value of 1.14 resulted as the influence of gender on emotional intelligence skills of participants. Thus calculated F-value is not significant since it is less than the critical F-value of 3.05 given 2 and

149 degrees of freedom at 0.05 level of significance. This led to the acceptance of the null hypothesis.

Hypothesis Four

Hypothesis four in the null form states that there is no significant difference in post test scores on interpersonal skills of participants in the experimental groups.

The hypothesis was tested using analysis of covariance statistics and the result of the analysis is as presented in Tables 12 and 13.

Table 12: Descriptive data on influence of experimental condition on interpersonal skills among participants.

		Pre-test		Post-test		
Group	N	\bar{X}	SD	\bar{X}	SD	MD
Emotional Learning						
System	55	31.88	6.75	30.51	7.69	1.37
Peer Mentoring	51	30.77	8.63	33.31	9.88	2.54
Control	50	30.89	9.42	31.98	8.56	1.09

Table 12 shows that the participants exposed to emotional learning system had the least post test score on interpersonal skills ($\bar{X} = 30.51$ and standard deviation of 7.69), followed by control group ($\bar{X} = 31.98$ and standard deviation of 8.56) while those exposed to peer mentoring had the highest mean(\bar{X}) score of 33.31 and standard deviation 9.88 on interpersonal skills.

To determine whether significant difference in interpersonal skills exist due to experimental conditions, analysis of covariance statistics was done. The result of the analysis is presented in Table 13.

Table 13: Analysis of Covariance on influence of experimental condition on interpersonal skills.

	Sum of squares	Degree of freedom	Mean of Squares	F – ratio
Sources of Variation				
Model	433.27	3	144.42	4.07
Covariate	93.73	1	93.73	2.65
Exp. Conditions	175.29	2	87.65	2.47*
Within Group	5397.09	152	35.51	
Total	5830.36	155		

*P < 0.05; df = 2 & 152; Critical F = 3.05

Table 13 shows that a calculated F-value of 2.47 resulted as the difference in interpersonal skills due to experimental conditions. Thus calculated F-value is not significant since it is less than the critical value of 3.05 given 2 and 152 degrees of freedom at 0.05 level of significance. Consequently, the null hypothesis was accepted.

Hypothesis Five

Hypothesis five, in the null form, states that there is no significant difference in post test scores on leadership skills of participants in the experimental groups.

The hypothesis was tested using analysis of Covariance statistics and the result of the analysis is as presented in Tables 14, 15 & 16 respectively.

Table 14: Descriptive data on influence of experimental conditions on leadership skills among participants.

		Pre-test		Post-test		
Group	N	\bar{X}	SD	\bar{X}	SD	MD
Emotional Learning						
System	55	46.26	11.85	59.62	10.45	13.36
Peer Mentoring	51	48.02	6.41	51.77	10.09	3.75
Control	50	47.33	7.98	47.22	9.19	0.1

Table 14 shows that participants exposed to emotional learning system had the highest post test mean(\bar{X}) score of 59.62 and standard deviation of 10.45, followed by those exposed to peer monitoring (\bar{X} = 51.73 and standard deviation of 10.09). The control group had the lowest mean (\bar{X}) score of 47.22 and standard deviation of 9.19.

To determine whether significant difference in leadership skills exist due to experimental conditions, analysis of covariance statistics was done. The result of the analysis is as presented in Table 15.

Table 15: Analysis of covariance on influence of experimental conditions on leadership skills among participants.

	Sum of squares	Degree of freedom	Mean of Squares	F – ratio
Sources of Variation				
Model	4156.34	2	2078.17	21.02
Covariate	283.32	1	283.32	2.86
Exp. Conditions	4156.34	2	2078.17	21.02*
Within Group	15124.74	152	98.85	
Total	19281.08	155		

*P < 0.05; df = 2 & 152; Critical F = 3.05

Table 15 shows that a calculated F-value of 21.02 resulted as the difference in leadership skills of participants due to experimental conditions. Thus, calculated F-value is significant since it is higher than the critical F-value of 3.05 given 2 and 152 degrees of freedom at 0.05 level of significance. Consequently, the null hypothesis was rejected.

Further analysis of data was done; using Fisher's protected t-test to do a pair-wise comparison of the group means to determine which group differs from the other on leadership skills and the trend of the difference. The result of the analysis is presented in Table 16.

Table 16: Fisher's Protected t-test analysis of influence of experimental conditions on leadership skills.

	Emotional Learning	Peer Mentoring	Control
Group	n = 55	n = 51	n = 50
Emotional Learning system	59.62 ^a	4.55 ^c	3.30 ^c
Peer mentoring	7.85 ^b	51.77 ^a	7.85 ^c
Control	12.40 ^b	4.55 ^b	47.22 ^a

^aGroup means are in the diagonal; ^bdifference in group means is below the diagonal; ^cProtected t-values are above the diagonal. $P < 0.05$

Table 16 shows that participants exposed to emotional learning system ($t = 4.55$; $df = 104$; critical $t = 1.98$; $p < 0.05$) significantly exhibit higher leadership skills than those exposed to peer mentoring or the control group ($t = 7.85$; $df = 103$; critical $t = 1.98$; $p < 0.05$). Similarly, those who received peer mentoring treatment have higher leadership skills than those in the control group. ($t = 3.30$; $df = 99$; critical $t = 1.98$; $p < 0.05$)

Hypothesis Six

Hypothesis Six, also in the null form, states that there is no significant difference in the post-test scores on self-management skills of participants in the experimental groups.

The hypothesis was tested using analysis of Covariance statistics and the result of the analysis is as presented in Tables 17, 18 and 19 respectively.

Table 17: Descriptive data on influence of experimental conditions on self-management skills among participants

		Pre-test		Post-test		
Group	N	\bar{X}	SD	\bar{X}	SD	MD
Emotional Learning						
System	55	47.39	9.88	57.27	8.26	9.88
Peer Mentoring	51	48.16	11.35	52.45	9.55	4.29
Control	50	46.88	8.44	45.06	5.85	1.82

Table 17 shows that participants exposed to emotional learning system had the highest post test mean(\bar{X}) score of 57.27 and standard deviation of 8.26 followed by participants exposed to peer mentoring with a mean (\bar{X}) of 52.45 and standard deviation of 9.55. The control group had the lowest mean score(\bar{X}) of 45.06 and standard deviation of 5.85.

To determine whether significant difference in self-management skills exist due to experimental conditions, analysis of covariance statistics was done. The result of the analysis is as presented in Table 18.

Table 18: Analysis of Covariance on influence of experimental conditions on Self-management skills among participants.

	Sum of squares	Degree of freedom	Mean of Squares	F – ratio
Sources of Variation				
Model	3940.23	2	1970.12	30.4
Covariate	572.36	1	572.36	8.83
Exp. Conditions	3940.23	2	1970.12	30.4*
Within Group	9916.36	152	64.81	
Total	13856.59	155		

*P < 0.05; df = 2 & 152; Critical F = 3.05

Table 18 shows that a calculated F-value of 30.40 resulted as the difference in self-management skills of participants due to experimental conditions. Thus calculated F-value is significant since it is higher than the critical F-value of 3.05 given 2 and 152 degrees of freedom at 0.05 level of significance. Consequently the null hypothesis was rejected.

Further analysis of data was done; using Fisher's protected t-test to do a pair-wise comparison of the group means to determine which group differs from the other on self-management skills and the trend of the difference. The result of the analysis is as presented in Table 19.

Table: 19 Fisher's Protected t-test analysis of influence of experimental Conditions on self-management skills.

	Emotional	Peer	
	Learning	Mentoring	Control
Group	n = 55	n = 51	n = 50
Emotional	Learning		
system	57.27 ^a	-2.57 ^c	-7.39 ^c
Peer mentoring	4.82 ^b	52.45 ^a	-4.82 ^c
Control	12.21 ^b	7.39 ^b	45.06 ^a

^aGroup means are in the diagonal; ^bdifference in group means is below the diagonal; ^cProtected t-values are above the diagonal. $P < 0.05$

Table 19 shows that participants exposed to emotional learning system ($t = 2.57$; $df = 104$; critical $t = 1.98$; $p < 0.05$) significantly exhibit higher self-management skill than those exposed to peer mentoring or the control group ($t = 7.39$; $df = 103$; critical $t = 1.98$; $p < 0.05$). Similarly, those who received peer mentoring treatment have significantly higher self management skills than those in the control group ($t = 4.82$; $df = 99$; critical $t = 1.98$; $p < 0.05$).

Hypothesis Seven

Hypothesis seven, in the null form, stated that there is no significant difference in the post-test scores on intrapersonal skills of participants in the experimental groups.

The hypothesis was tested using analysis of Covariance statistics and the result of the analysis is as presented in Tables 20 and 21 respectively.

Table 20: Descriptive data on influence of experimental conditions on intrapersonal skills among participants.

		Pre – test		Post - test		
Group	N	\bar{X}	SD	\bar{X}	SD	MD
Emotional Learning						
System	55	22.79	5.83	24.86	4.62	2.07
Peer Mentoring	51	24.01	7.58	23.65	4.57	0.36
Control	50	23.58	6.11	24.32	4.64	0.74

Table 20 shows that the participants exposed to emotional learning system had the highest post-test mean(\bar{X}) score of 24.86 and standard deviation of 5.62. While those exposed to peer mentoring had the lowest post-test mean(\bar{X}) score of 23.65 and standard deviation of 4.57. The control group registered post-test mean (\bar{X}) score of 24.32 and standard deviation of 4.64.

To determine whether significant difference in intrapersonal skills exist due to experimental conditions, analysis of covariance statistics was done. The result of the analysis is as presented in Table 21.

Table 21: Analysis of Covariance on influence of experimental conditions on intrapersonal skills scores among participants.

	Sum of squares	Degree of freedom	Mean of Square	F – ratio
Sources of Variation				
Model	156.18	3	52.06	8.29
Covariate	33.68	1	33.68	1.78
Exp. Conditions	57.00	2	28.50	1.51*
Within Group	2863.43	152	18.84	
Total	3019.61	155		

*P < 0.05; df = 2 & 152; Critical F = 3.05

Table 21 shows that the calculated F-value of 1.51 which resulted as a result of the influence of experimental conditions on the post mean intrapersonal skills of the participants is lower than the critical F-value of 3.05 given 2 and 152 degrees of freedom at 0.05 level of significance. Consequently, the null hypothesis was accepted.

Hypothesis 8

Hypothesis eight in the null form states that there is no significant relationship between emotional intelligence skills and academic achievement among secondary school students. The hypothesis was tested using Pearson Product Moment

Correlation Coefficient statistics. The result of the analysis is as presented in Table 22.

Table 22: Relationship between emotional intelligence skills and academic achievement

Variables	N	\bar{X}	SD	df	Prob.	r-cal.	r-critical
Emotional Int. Skills	156	160.65	18.39	154	0.05	0.35	0.19
Academic Achievement	156	30.92	5.9				

$P < 0.05$; $df = 154$; $r - cal = 0.35$; $r - crit = 0.19$

Interpretation

From the table presented above, the calculated 'r' ($r - cal. = 0.35$) is significantly greater than the critical 'r' ($r - crit. = 0.19$) given 154 degree of freedom at 0.05 level of significance. As a result of this, the null hypothesis was rejected while the alternative hypothesis which states that there is a significant relationship between academic achievement and emotional intelligence skills was accepted.

4.2 Summary of Findings

1. The findings showed that Emotional Learning System was more effective than Peer Mentoring in enhancing emotional intelligence skills among participants.
2. Higher level of improvement in academic achievement was obtained by participants exposed to Emotional Learning System than those exposed to Peer mentoring and Control group.
3. The study shows that there is no significant gender difference on emotional intelligence skills among participants.

4. The findings showed that the level of interpersonal skills among the participants was not significant.
5. Leadership skills were significantly high among participants exposed to Emotional Learning System than participants in Peer Mentoring and Control group.
6. Emotional Learning System was effective in enhancing Self-management skills of participants than peer mentoring and control group.
7. The study shows that intrapersonal skills of participants were not significantly enhanced by exposure to Emotional Learning System, Peer Mentoring or Control group.
8. There is a significant relationship between emotional intelligence skills and academic achievement among participants in experimental groups.

CHAPTER FIVE

DISCUSSION OF FINDINGS, SUMMARY AND CONCLUSION, CONTRIBUTIONS TO KNOWLEDGE, RECOMMENDATIONS, AND SUGGESTIONS FOR FURTHER RESEARCH.

5.0 Introduction

The study investigated the impact of intervention programmes on emotional intelligence skills and academic achievement of senior secondary schools in Lagos, Nigeria.

This chapter presents the discussion of the results of the statistical analyses presented in chapter four and offers plausible interpretations of the findings. The discussions of the findings may either affirm or negate some of the research findings earlier reviewed. The chapter also highlighted the contributions to knowledge, recommendations and suggestions for further studies.

5.1 Discussion of findings

Hypothesis one stated that there will be no significant difference in post-test scores on emotional intelligence skills among participants exposed to Emotional Learning System, Peer mentoring and control group. The result of the analysis shows that participants in emotional learning system group had the highest post-test scores followed by those in peer mentoring group and lastly, the control group. Further analysis was made to determine whether significant difference existed in post-test score in emotional intelligence skills due to experimental conditions. The result of the analysis shows a significant difference in the post-test scores.

Consequently, the null hypothesis was rejected. Further analysis was done using Fisher's protected t-test to determine if significant difference in emotional intelligence skills exists across the groups and the trend of the difference. The result shows that participants exposed to emotional learning system significantly had higher emotional intelligence skills than either those exposed to peer mentoring or those in the control group respectively. The most probable reason for this result is because emotional learning system is a better structured programme when compared with peer mentoring which has been successfully applied severally across socio-spatial and demographic spectrum.

The findings supports that of other researchers who found that emotional learning system helped participants make positive change in attitudes, conceive and apply behaviours that consequently bring about improvement in emotional intelligence(Nelson, Jin and Wang ,2002; Boyle, 2003; Williams, 2004; Smith,2004; Nelson and Low, 2005; Potter,2005; Nelson et al,2007).

The result aligns with the findings of Potter (2005) in a study on the impact of an emotional intelligence intervention program on freshmen students, in which he concluded that emotional learning system as an intervention program appeared to have short-term and long term impact on student behaviour. The program focused on leadership skills, interpersonal skills, self management skills and intrapersonal skills. The within analysis conducted with the intervention group demonstrated significant changes in the time between pre-test and post-test for the total scales scores. The logical assumption is that the emotional intervention program helped participants make positive changes in attitudes, conception and behaviours that are

related to student success, during the critical transition period from high school to college and beyond.

Also, Nelson et al (2007) affirmed the findings in a study on emotional intelligence: a transformative theory and applied model of positive personal change. The results revealed that emotional learning system had a significant positive influence on emotional intelligence skills and that there was no significant gender difference.

Boyle (2003) who analysed the Javelina EI Program on emotional intelligence skills development training, student achievement and retention involving academic terms of Fall 2002, Fall 2003 and Spring 2004 in which a total of 2,498 students participated, reported that Emotional learning system model which was applied showed positive increase in emotional intelligence skills, retention and students academic achievement which is in line with the findings of this study.

Hypothesis Two stated that there will be no significant difference in post-test scores on academic achievement of participants exposed to emotional learning system, peer mentoring and control group. The result of the analysis shows that the emotional learning system group had the highest post-test scores followed by the peer mentoring group, while the control group had the lowest scores. Hence, the null hypothesis was rejected.

Further analysis was carried out using Fisher's protected t-test to determine which group differ from the other on academic achievement and the trend of the difference. The pair-wise comparison of the group mean was done and the results showed that participants in emotional learning system group significantly had higher

scores in academic achievement than those in peer mentoring and control groups. Again the reason for this outcome is not far-fetched; emotional learning system is a very comprehensive programme of intervention that inculcates elements that positively impact on the academic performance of participants.

This result is in agreement with that of researchers that found emotional learning system as significant in mental health and school achievement of Chinese high school and college students (Nelson, Jin and Wang, 2002). In the study, the role of emotional learning system in emotional intelligence in school achievement and mental health was examined. Results suggest that: (1) Significant differences were identified in selected emotional intelligence skill scales when educational level, gender and location variables were considered, (2) Drive Strength, time management and commitment ethics are significant predictors of school achievement, (3) Emotional intelligence skills were significant predictors of mental health and school achievement of Chinese High school and college students.

It is also in line with the findings of other researchers (Stottlemeyer, 2002; Williams, 2004; Smith, 2006) which revealed that emotional learning system had a positive influence on retention and students academic achievement. This equally supports the findings of other researchers who agree that a significant relationship exists between emotional intelligence and academic achievement (Abisamra, 2000; Stottlemeyer, 2002; Aremu, Tella and Tella, 2005; Edun and Akanji, 2008; Adeoye and Emeke, 2010).

Edun & Akanji (2008) also corroborated the findings in their work on perceived self-efficacy, academic self-regulation and emotional intelligence as predictor of academic performance in junior secondary school in which they posited that when emotional intelligence was entered into the regression model due to the strength of its relationship with academic performance of students, there was a significant prediction of students' performance, which showed that emotional intelligence alone accounted for 63.7% of the variance in academic performance of students.

Report by Aremu, Tella & Tella (2005) on the relationship among emotional intelligence, parental involvement and academic achievement of secondary school students in Ibadan, Nigeria, supports this finding revealing that both emotional intelligence and parental involvement could predict academic achievement. There was also a significant positive relationship between emotional intelligence and academic achievement.

The finding also agree with Parker et al (2005) in their study on academic achievement and emotional intelligence: predicting the successful transition from high school to university. The study was on 1,426 first-year students attending four different universities. Results revealed that academically successful students had significantly higher levels of several different emotional and social competences. These findings suggest that emotional intelligence plays an important role in the academic achievement of students and the successful transition from high school to university.

Hypothesis three stated that there will be no significant gender difference in post-test scores on emotional intelligence skills due to experimental conditions of participants. The results showed that there was no significant gender difference in post-test scores on emotional intelligence skills due to experimental conditions of participants. This led to the acceptance of the null hypothesis. The plausible reason for this outcome lies in fact that though, superficially men may differ from women emotionally; their innate capacity to respond to treatment aimed at enhancing specific emotional intelligence skills may be the same.

This result supports the findings of some researchers which revealed that emotional intelligence was not gender specific (Stottlemeyer, 2002; Ogunyemi, 2007). On the other hand the finding contradicts that of some other researchers which revealed that strong pattern in emotional intelligence competencies are closely linked to gender differences (Fowler,2002; Stottlemeyer,2002; Vela,2003; Katyal and Awasthi,2005 and Sanchez-Nunez, Fernandez-Berrocal, Montanes and Latorre,2008).

This finding was in line with the findings of Ogunyemi (2007) on Nurturing leaders' emotional intelligence through brainstorming and emotional mastery training programmes: Implication for human resources management, in which it revealed among other things, that there is no significant effect of gender on participant emotional intelligent skills. This implies that participants' emotional intelligence skills are not gender specific.

It also supports the findings of Vela (2003) who carried out a study on the role of emotional intelligence in the academic achievement of first year college students. The results suggest that students with high levels of emotional intelligence tend to be more successful in their academic achievement. His comparison on gender significance revealed that based on the correlation and multiple regression analyses; there was no significant gender difference in the emotional intelligence skills.

However, the finding contradicts the finding of Stottlemeyer (2002) on the assessment of emotional intelligence and the Implications for education. The study examined the role of emotional intelligence in academic achievement. Data indicates that females have higher scores in emotional skills and academic achievement than males. Results suggest that gender difference in academic achievement may be influenced by emotional intelligence.

Hypothesis four stated that there will be no significant difference in post-test scores on interpersonal skills of participants in the experimental groups. The result of the analysis shows that there is no significant difference in interpersonal skills due to experimental conditions. Consequently, the null hypothesis was accepted. This could have resulted from the fact that participants used for the study are individuals who have been interacting among themselves for the past three to six years and would therefore have evolved highest possible level of interpersonal relationships. Consequently, any programme introduced to enhance interpersonal skills among such people with closely knit relationship will produce very marginal and insignificant effect.

This result contradicts the findings of other researchers who submit that parents, friends, peers, teachers, mentors and other professionals have positive influence in students' emotions and the quality of interpersonal relationship in life, strongly affects one's ability to develop (Stottlemyer, 2002; Vela, 2003; Nelson and Low, 2003, Boyle, 2003 and Potter, 2005). Thus, they agree that exposure to emotional learning system has indicated positive significant influence on interpersonal skills.

The findings is also at variance with the study of Nelson & Low (2005) on the use of training techniques (Emotional Learning System and Group Counselling)and compared its effectiveness on interpersonal communication skills, study habits, attitudes and academic achievement of twenty three female and sixteen male students. Students who participated in emotional learning system technique showed better level of interpersonal communication skills and improved grade point averages.

Hypothesis five stated that there will be no significant difference in post-test scores on leadership skills of participants in the experimental groups. The result of the analysis shows difference in leadership skills of participants due to experimental condition. Hence the null hypothesis was rejected.

The probable reason for this result could be because the participants are still in their formative age leadership-wise and have a lot of room and potential for leadership training and development. Any exposure to any intervention programme like emotional learning system and peer mentoring aimed at enhancing the leadership component of their emotional intelligence skills will certainly have a significant effect.

Further analysis using Fisher's protected t-test was done to determine which group differs from the other and the trend of the difference. The results of the pair-wise comparison of the group show that participants exposed to emotional learning system significantly differed with higher scores from those exposed to peer mentoring, while control group had the lowest score. This buttressed the earlier findings of researchers that emotional learning system, enables individuals to acknowledge individual differences and be able to effectively and accurately communicate the differing viewpoints (Townsend and Beghardt, 1997; Nelson and Low, 2003; Potter, 2005). This finding reinforces the views of Nelson and Low (2003) that the skill of leadership is a set of personal and goal directed behaviours that have positive consequences which develop and gain momentum to positively influence other people. They also stated that leadership is self-directed, based on internal values and characteristics that are observable by others and interpreted as self-confident behaviours. These observable and meaningful behaviours have a significant impact on others which draw them to follow and model behaviours.

Further analysis showed that peer mentoring group participants also exhibited improved leadership skills as a result of the treatment condition though not as much as those exposed to emotional learning system. Studies by some researchers lend credence to this finding. Kram (1980) in a study grouped peer mentoring into two broad categories: career functions and psychosocial functions and reported a range of benefits of the psychosocial functions. They affected level of performance and increased sense of competence in leadership, interpersonal skill and self worth,

while, Burke (1984) reported positive increase in self confidence, interpersonal relationship and leadership as some of the most valuable outcomes for mentees.

Hypothesis Six stated that there will be no significant difference in the post-test scores on self-management skills of participants in the experimental groups. The results of the analysis show that participants exposed to the emotional learning system had a higher mean score of 57.27, followed by participants exposed to peer mentoring with a mean score 52.45 and control group with 45.06. Further analysis to determine whether significant difference exist due to the experimental condition showed that there was a significant difference in the post-test scores due to experimental conditions. Consequently, the null hypothesis was rejected. This outcome is not unexpected given that the study participants are still in their formative age of self-discovery. Exposure to intervention programmes like emotional learning system and peer mentoring has only helped to fast track the process.

Fisher's protected t-test was used to determine which group differ from the other on self-management skills and the trend of difference. The pair-wise comparison carried out showed that participants exposed to the emotional learning system exhibited higher self-management skills, followed by participants exposed to peer mentoring, and then, the control group.

This finding is in sync with the findings of other researchers that the level of self-management skills are central to high-achieving and productive students, who learn how to motivate themselves, learn valuable time management skills, complete tasks and never give up, and are flexible to positively adjust to an ever changing

environment, through exposure to emotional learning system (Nelson and Low, 2003; Diperna, 2000; Stottlemyer, 2002).

Affirming this finding, is the finding of Stottlemyer (2002) in a study on assessment of emotional intelligence and the implications for education. The study was to determine the effectiveness of the emotional learning system. Results revealed a significant positive correlation between emotional learning system and leadership skills, self-management skills, interpersonal skills, intrapersonal skills (emotional intelligence skills). Similarly, Potter (2005) in a study on the impact of an emotional intelligence intervention program on freshmen students, concluded that emotional learning system as an intervention program, appeared to have short-term and long term impact on student behaviour. The program focused on leadership skills, interpersonal skills, self management skills and intrapersonal skills. The within analysis conducted with the intervention group demonstrated significant changes in the time between pre-test and post-test for the total scales scores. The logical assumption is that the emotional intervention program helped participants make positive changes in attitudes, conception and behaviours that are related to student success, during the critical transition period from high school to college and beyond.

Hypothesis seven stated that there will be no significant difference in the post test scores on intrapersonal skills of participants in the experimental groups. The results of the analysis showed that the participant exposed to peer mentoring had the highest mean score of 24.01 and a standard deviation of 7.58, followed by participants in emotional learning system group with mean score of 22.79 and a

standard deviation of 5.83, while the control group registered a mean score of 23.58 and standard deviation of 6.11.

Further analysis of the result showed that there was no significant difference in the post-test scores due to the influence of experimental conditions. This led to the acceptance of the null hypothesis. The probable reason for this outcome could be because elements of intrapersonal skills are developed over a long period of time. Eight-week period of exposure to treatment using emotional learning system and peer mentoring may not be sufficient to record accretion in the intrapersonal skills of participants.

This finding does not align with the findings of some other studies, where intrapersonal skills was considered to be a critical skill which enable individual to develop feelings of self-worth and self confidence, to produce inner drive for success and this can be developed more systematically in the individual through the emotional learning system.(Karcher, 2005; Nelson and Nelson, 2003). This finding is in contrast with the findings of Nelson & Nelson (2003) in their study on emotional intelligence skills: Significant factors in freshmen achievement and retention. Their results indicated a positive significant influence of emotional learning system on emotional intelligence skills, academic achievement and retention.

Similarly, this finding contradicts the findings by Karcher (2005) in a study on the effect of peer mentoring and high school mentors' attendance on their younger mentees' interpersonal skills, intrapersonal skills and connectedness. In this randomized study of 73 Caucasian rural youths, multiple analyses of covariance revealed that connectedness to school and parents at posttest were significantly greater for mentees than for the comparison group. Regression analyses revealed

that positive changes in interpersonal skills, intrapersonal skills, and behavioural competence were highly related to mentoring. Working with 500 participants, Fowler (2002) observed that the principal benefits in mentoring are interpersonal and intrapersonal skills, leadership, self management, relationships and productivity.

Hypothesis eight stated that there will be no significant relationship between emotional intelligence skills and academic achievement among senior secondary school students. The result of the analysis showed that relationship between emotional intelligence and academic achievement was significant. This led to the rejection of the null hypothesis. The foregoing outcome is not unexpected as it is a trite knowledge that the level of a person's emotional intelligence influences academic ability.

This result supports the findings of other researchers who agree that a significant relationship exists between emotional intelligence and academic achievement (Abisamra, 2000; Stottlemeyer, 2002; Aremu, Tella and Tella, 2005; Edun and Akanji, 2008; Adeoye and Emeke, 2010).

The result aligns with the findings of Edun & Akanji (2008) in a study on the perceived self-efficacy, academic self-regulation and emotional intelligence as predictor of academic performance in junior secondary school and posited that when emotional intelligence was entered into the regression model due to the strength of its relationship with academic performance of students, there was a significant prediction of students' performance. This showed that emotional intelligence alone accounted for 63.7% of the variance in academic performance of students.

Adeoye and Emeke (2010) also corroborated the findings in their work on emotional intelligence and self efficacy as determinants of academic achievement in English language among students in Oyo state senior secondary schools in which they

posited that students exposed to emotional intelligence training performed better in English language achievement test than those in self efficacy training and control group. Emotional intelligence training had a more significant impact on students' academic achievement.

It also supports the findings of Drago (2004) in his study on the relationship between emotional intelligence and academic achievement in non-traditional college students. The results demonstrated that emotional intelligence is significantly related to student GPA scores, student cognitive ability scores and student age. Overall, the results suggest that academic achievement is related to students' ability to recognise, use and manage their emotions.

5.2 Summary and conclusion

The study was on the impact of intervention programmes (Emotional Learning System and Peer mentoring) on emotional intelligence skills and academic achievement of senior secondary school students in Lagos, Nigeria. It was carried out to determine the impact of emotional learning system and peer mentoring in developing emotional intelligence skills and enhancing academic achievement of senior secondary school students.

Two hundred and forty students were assessed for the study. A total of 156 who were identified as having low emotional intelligence and academic achievement were used. The data for the study were obtained using two instruments. Eight research hypotheses were analysed using ANCOVA, Pearson Product Moment Correlation Coefficient and descriptive statistics. All the hypotheses were tested at 0.05 level of

significance. Results from the analysis of data indicated that five out of the eight null hypotheses tested were rejected, while three were accepted.

The study revealed that both treatment techniques were efficacious in enhancing the level of emotional intelligence skills and in turn affects the academic achievement of the students. Further evidence revealed that emotional learning system was more effective in improving emotional intelligence skills and academic achievement than the peer mentoring technique. It is also apparent from the study that there is a relationship between emotional intelligence skills and academic achievement. The conclusion suggests that a student's level of emotional intelligence skills affects his or her academic achievement. Thus there is the need to inculcate the development of emotional intelligence skills into the school curriculum. This is considered important because of its impact in improving the academic achievement of students.

Finally, it is envisaged that the frontier of this study will be advanced by further studies on emotional intelligence skills and academic achievement by educational psychologists and other researchers in Nigeria.

5.3 Contributions to knowledge

1. The study revealed that Emotional Learning System and Peer Mentoring techniques were both effective in improving the level of emotional intelligence skills such as interpersonal, leadership, self-management and intrapersonal skills in the different categories examined. Instructively the effectiveness of these instruments and the associated treatment programme in Nigerian environment is proven.

2. The study has exposed the fact that a student's academic achievement could be enhanced through emotional intelligence skills training based on the use of Emotional Learning System and Peer Mentoring techniques which will lead to high academic achievement.
3. The study has identified the critical positive relationship between emotional intelligence skills and academic achievement such that developing emotional intelligence skills of a student will lead to the enhancement of his/her academic achievement.
4. Critical to the study is a novel revelation that portrays emotional intelligence skills as potent. Implicitly, emotional intelligence skills could be learnt and taught in the class room to equip learners with intrapersonal, self-management, leadership and interpersonal skills with the intent of improving the personal, academic and career success of students.
5. The adaptation of the research instrument – Exploring and Developing Emotional Intelligence Skills Questionnaire (EDEISQ) for use in Nigeria addresses the problem of dearth of affective measures for use by researchers in measurement of emotional intelligence skills in Nigeria.
6. The study has demonstrated that the enhancement of emotional intelligence skills could also fast track the development of relevant psychosocial behaviour that could help to address the various psychosocial problems plaguing the society especially the academic community.

7. Intervention techniques that have been employed for the treatment of poor academic achievement in our schools have focused on the cognitive training but the current study has helped in the treatment of poor academic achievement of students based on affective training.

5.4 Recommendations

Based on the findings of the study, the following recommendations are made:

1. Results of this study on emotional intelligence should provide the basis for a conceptual shift in learning and student success. Managers of education at secondary education level should consider emotional intelligence skills as a factor in predicting student's success and hence the need to assess this dimension of the student's overall assessment.
2. Educators at secondary level have often emphasised intellectual intelligence in preparing their students for life success. This has often produced suboptimal result. The suggestion here is for them to develop appropriate intervention programmes that will facilitate effective and seamless transition of their students to all round success at tertiary level of learning.
3. It is crucial that learning environments are student-centred and capable of nourishing the development of emotional intelligence skills that is considered the strongest predictor of student success.
4. Curriculum experts should utilize the data and analyses presented in this study to develop an affective instructional curriculum that incorporates

interpersonal, leadership, self-management and intrapersonal skills with the objective of enhancing personal and career success of students.

5. With the pressures of standardized testing, education professionals are faced with many challenges that directly impact the success of their students; balanced combination of experiential mind and cognitive mind in training secondary school students will facilitate the identification, recognition and development of their emotional skills which will in turn contribute to their personal, academic and career success.
6. Emotional Learning System and Peer mentoring were found to be very efficacious in enhancing the level of emotional intelligence skills and academic achievement. These programmes should be adopted to assist students in coping with academic challenges.
7. Inclusion of this education based model – Emotional Intelligence Skills in teacher education at all levels should be explored.

5.5 Suggestions for further research

The following suggestions are made as a result of the findings emanating from this study.

1. Practical research at primary school level should be carried out to define the impact of intervention programmes similar to one used in this study.
2. Multiple outcome criteria might be a consideration for future studies. Since the desired result or outcome is student success, a multiple outcome could

include a focus on school type, class rank, retention and other quantitative data.

3. This present research which focused on the impact of intervention programmes on emotional intelligence skills and academic achievement of senior secondary school students in Lagos, Nigeria could be replicated in other states of the Nigerian federation.
4. Further studies could also investigate the effectiveness of the treatment among students of tertiary institutions with specific emphasis on freshmen.
5. Researchers could investigate the effect of other intervention techniques relative to the two intervention techniques employed in enhancing emotional intelligence skills and academic achievement in this study.
6. Intensive, long term and broad-based intervention programmes should be developed and implemented.

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Appendix 1.

What Are The Emotions That We Feel?

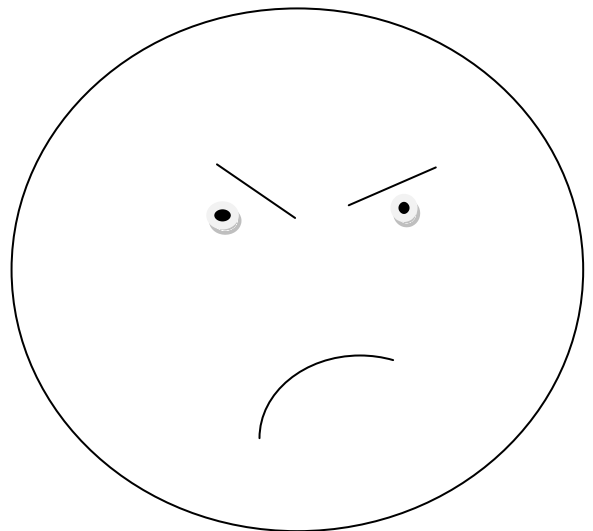
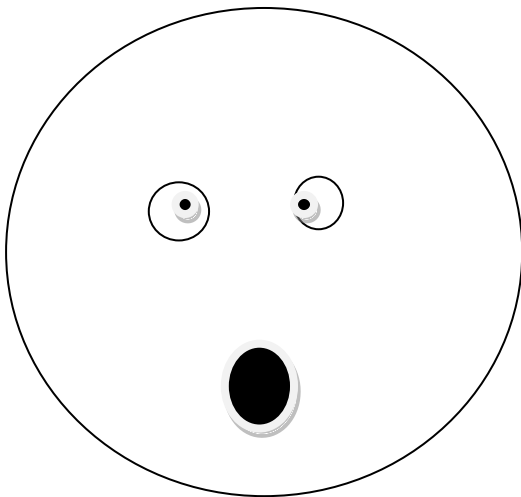
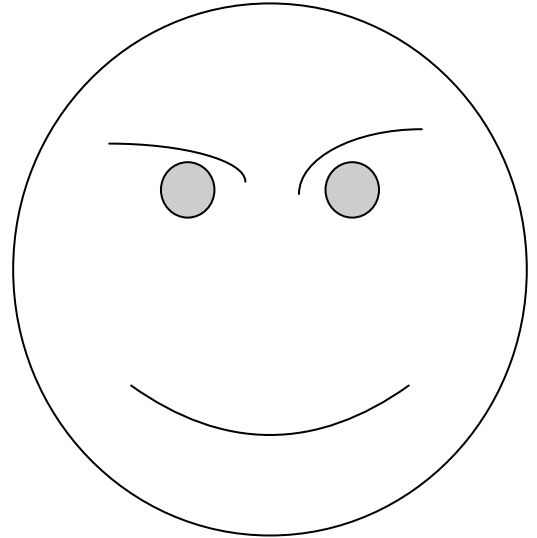
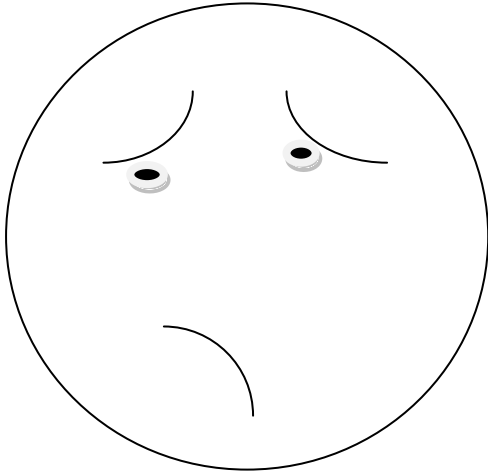
Circle all of those words that identify emotions.

Anxiety	Pride	Anger	Pity	Contentment
Love	Excited	Tension	Satisfied	Depressed
Hostility	Devoted	Fear	Embarrassed	Thrilled
Melancholy	Friendliness	Revenge	Laughter	Kind
Despair	Annoyed	Sadness	Happiness	Jealous
Worry	Confused	Apprehensive	Dread	Delight
Envy	Gloomy	Irritable	Concerned	Sorrow
Outrage	Anguish	Bliss	Panic	Shy
Frustration	Joy	Startled	Stress	Hate
Grief	Shame	Infatuation	Boredom	Content
Nervous	Loneliness	Trusting	Envy	

How many words did you circle?

Appendix 2.

Label These Emotions



Appendix 3.

An Emotionally Intelligent Student's Characteristics

Emotionally Reactive Student	Emotionally Intelligent
Overwhelmed too often	Resilient
Reactive to stress stress	Proactive, planned responses to
Emotionally driven behaviour	Intentional reflective behaviour
Self-doubting	Self-confident
Deficit and weakness focused	Strength focused
Resistant to change	Flexible; open to change
Aggressive, nonassertive communicator	Assertive communicator
Performance decreases under stress	Performance improves under stress
Pessimistic, sarcastic, negative focus	Relies on positive habits
Continually makes the same mistakes	Learns from experience

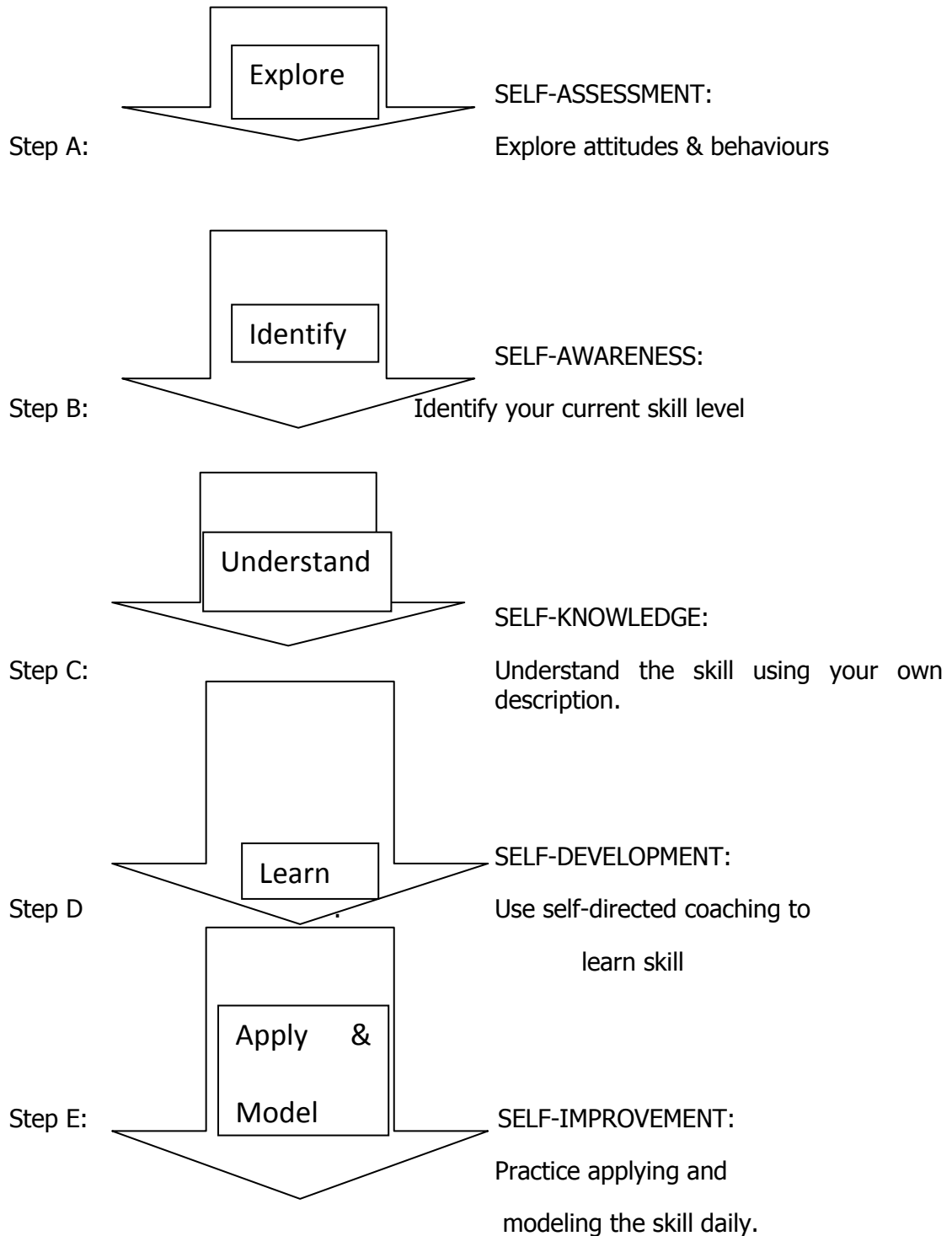
Appendix 4.

School Success Factors

- ☐ Establish a positive, supportive relationship with a person who is interested in you and your success
- ☐ Know how to locate and access school resources
- ☐ Establish meaningful personal goals related to successful school completion
- ☐ Create a daily schedule and track your progress
- ☐ Commit to your primary “career” by being a good student
- ☐ Identify, maximize, and expand your personal learning style
- ☐ Initiate contact with teachers and high-achieving students
- ☐ Develop critical thinking skills
- ☐ Know how and where to get information
- ☐ Improve your writing and speaking skills
- ☐ Learn the career life-planning process and visit the school counsellor
- ☐ Build friendships with peers who are committed to academic and career success
- ☐ Learn, practice, and strengthen assertive communication skills
- ☐ Get involved in school organization that supports your interest
- ☐ Improve your physical wellness skills
- ☐ Become computer literate and build your word-processing skills
- ☐ Attend all classes
- ☐ Increase your personal expectations with each success

Appendix 5.

Applying the Emotional Learning System



Appendix 6.

Worksheet on Goal Checklist on Drive Strength

Using the goal statement that you prepared, complete the checklist:

Yes No

☐ ☐ **Does the goal fit my personal values and belief system?**

☐ ☐ **Is the goal important to me? Do I really want to do it?**

☐ ☐ **Is the goal specific and presented without an alternative?**
Does it

Describe a behaviour well enough so that I know exactly what
to

do?

☐ ☐ **Is the goal tangible? Can I visualize the goal?**

☐ ☐ **Is the goal achievable? Am I capable of doing the goal**
behaviour?

☐ ☐ **Is the goal measurable by some criteria?**

☐ ☐ **Have I set a specific target date to accomplish the goal?**

Appendix 7.

Commitment Ethic Inventory

As a way of increasing and strengthening your commitment Ethic, inventory your most important achievements of the past. Everyone has this positive history-memories of times and events when we felt proud, special, and positive.

List three positive achievements (events) from your past that produced feelings of pride and self-appreciation, and then describe any important values represented by each achievement.

Positive achievements:

1.

2.

3.

Important values represented by my achievements:

1.

2.

3.

Using this information from the past, set three new goals. These goals should be ones that will produce results that bring positive feelings and a sense of pride.

1.

2.

3.

Commit yourself to completing these goals by specific date as a way to experience the rewards of an increased commitment ethic. Check for hesitations. Do not commit to goals that you do not value. Decide which goal has the highest priority for you now, complete that one first, and enjoy the benefits of your energy.

Appendix 8.

Commitment Ethic calendar

Month----- Year -----

EI Skills Focus:

Goal Achievement

Motivating yourself and directing energy to achieve meaningful personal goals. The ability to focus on goal-directed behaviours leading to high achievement.

S	M	T	W	T	F	S
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Appendix 9.

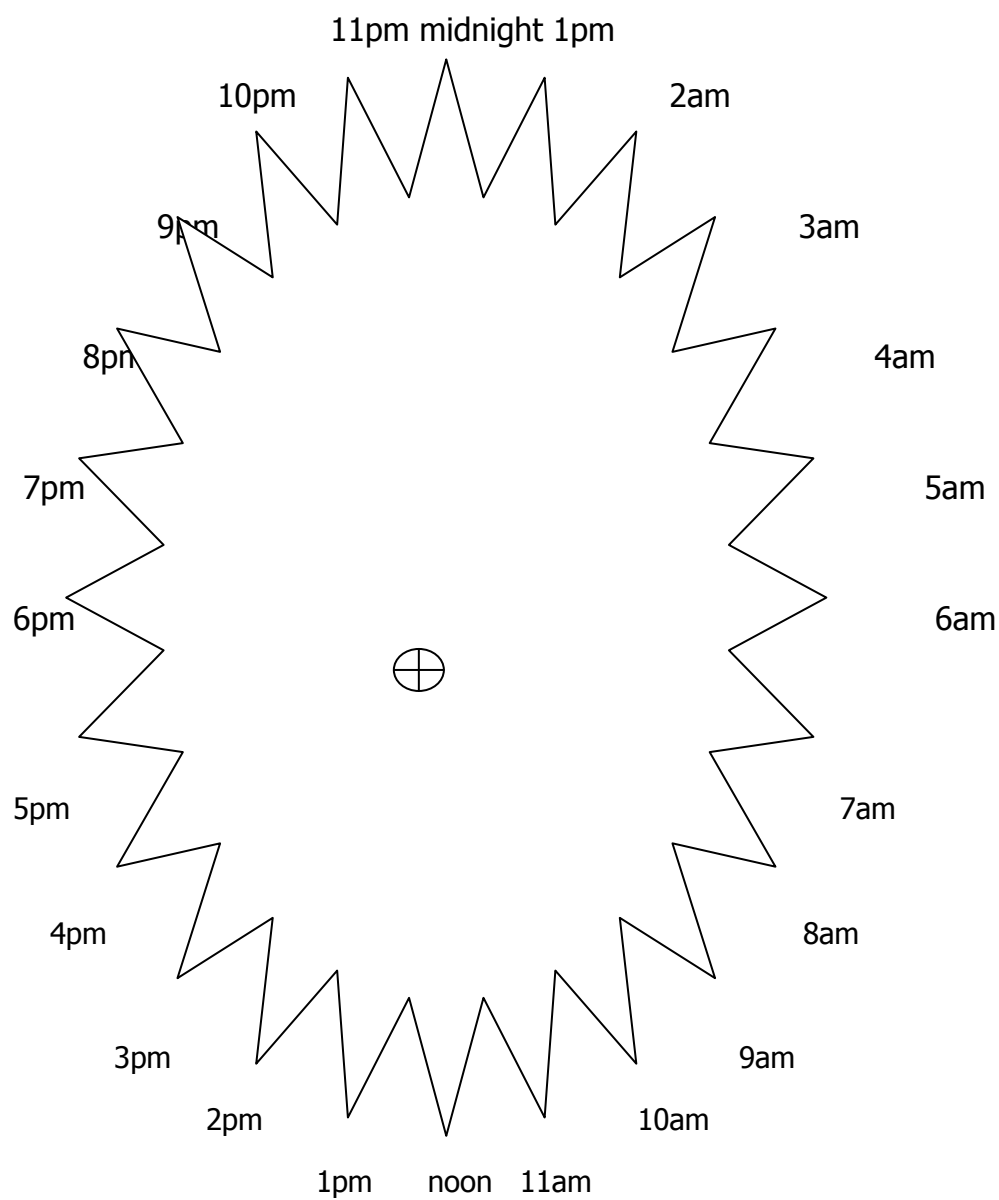
Time Management worksheet

Set aside 15 minutes (in the evening). List 5 important personal activities that you want to accomplish the next day. Focus on personally meaningful activities that you can accomplish with in a day.

1. _____
2. _____
3. _____
4. _____
5. _____

Appendix 10.

Time Watch



-
- Complete the Time watch to see how you use your time.

Appendix 11.

The Positive Change Process

<u>Steps</u>	<u>Change Process</u>
Step 1	Identify (target) a specific behaviour for change
Step 2	Initiate an internal dialogue to check your conscious willingness to change. Is this an area I want to change to feel more comfortable? Am I willing to change?
Step 3	State the desired change specifically and in line with your personal values: what I specifically want change is how I
Step 4	Identify the internal (within yourself) or external event (stressor) that seems to elicit (cause) the behaviour you want to change.
Step 5	Identify your thoughts, attitudes, or beliefs in relation to stressor (cognitive component).
Step 6	Describe, clarify, and assess your emotional reaction to the stressor (emotional component)
Step 7	Identify, dispute, and challenge self-defeating and irrational beliefs; check catastrophic thinking and critical self-talk.
Step 8	Use your personal resources to create rational beliefs and substitute these for the irrational beliefs identified in step 7. Develop and practice personally helpful self-statements. Use the Emotional Learning System to develop constructive and critical thinking.
Step 9	Implement and practice the process of cognitive restructuring when dealing with personal stressors in your daily living. Focus on task and set a specific behavioural goal to handle the problem (behavioural component).
Step 10	Select a specific skill training experience to reinforce and facilitate the new behaviour (e.g., stress management).

Appendix 12.

Anger Control

- STEP 1. When you experience frustration, annoyance, jealousy, say to yourself, "I am angry"
- STEP 2. Once you have accurately identified the emotion, say to yourself, "I create my own anger" (i.e., I am creating my anger with angry thinking).
- STEP 3. After you have realized that you are making yourself angry, say, "I accept responsibility for my anger".
- STEP 4. Next, ask yourself, "How do I want to express this anger in a way that I feel good about?"
- STEP 5. Ask yourself whether you need help from another person. If you are really angry, you should take a time-out –leave the anger-producing situation, take a walk, and give yourself time to think about what you want to do or say.

Time-Out

- Step 1. Leave the situation for a definite period of time, such as one hour. If another person is involved, explain how the time-out works and what you are doing. Tell the person when you will be back.
- Step 2. Do something physical such as going for a walk, working in the house or exercising briefly. The activity should be something that will work for you, but constructive – do not drink or take drugs.
- Step 3. Think about how you want to handle the situation. Brainstorm options and rehearse what you will say or do.
- Step 4. After sufficient time has passed, check your anger level. If you have thought through the situation and want to discuss it, let the other

persons know you are willing to talk about the problem. If your anger starts to escalate when you think about the situation, repeat the time-out procedure. Let the other person know that you need additional time to calm your elf and agree on a time to discuss the problem.

Appendix 13.

Anxiety Management format

How you communicate depends on the situation. Use the following guide to learn the process of changing your communication style. Describe a recent incident or situation where you deferred to someone else. Be specific.

When did it start?

How often does it occur?

Under what conditions?

Who is present?

What happens just prior?

What happens afterward?

What are you feeling about your nonassertive behaviour in this situation?

How could you act more assertively?

Predict the outcome of your assertive behaviour?

Appendix 14

Worksheet on Empathy

Following are four statements that people might make. Read each one and try to determine the feeling underlying the words. Using a single word or short phrase, identify the feelings that you think the statement conveys. Check your accuracy with your classmates or get feedback from friends.

1. My teachers are always on my back with some kind of hassle, and I'm fed up with the whole deal.

2. I'm overloaded with work at school, and I can't handle it anymore. I don't know what to do.

3. I am trying my best, and everyone is telling me that I have to do more. I am disappointed in myself and feel like a failure.

4. My teacher has asked me to take on more projects. I want to say yes, but I don't think I can take extra stress.

A person who has developed the Empathy skill is able to:

- *Practice active listening to really hear what another person is saying.
- *Be patient and understanding when another person is having strong feelings.
- *Accept differences in others, even when disagreeing with their ideas.
- *Have a good sense about what another person is feeling.
- *See things from the other person's point of view.
- *Communicate sensitivity and respect for the feelings of others.

Appendix 15.

Worksheet on Decision Making

To practice effective Decision Making, complete the following exercise. Select a problem that is important to you – pick one that requires an effective solution now. Share the problem that you are attempting to resolve with others and ask for feedback and suggestions. Then, answer each of the five questions.

1. Define your problem and state it specifically (e.g., controlling my anger).

2. Identify and outline your usual response in a specific situation (e.g., when my Teacher criticizes me, I get really angry and attack back).

3. List at least three options or possible solutions (e.g., I could ignore the criticism, I could tell her what I think and feel about the criticism, I could take a time-out and think about what I want to do and say).

4. Visualize the consequences of each of your three responses.

STRATEGY 1

POSITIVE CONSEQUENCES
CONSEQUENCES

NEGATIVE

STRATEGY 2

POSITIVE CONSEQUENCES
CONSEQUENCES

NEGATIVE

STRATEGY 3

POSITIVE CONSEQUENCES
CONSEQUENCES

NEGATIVE

5. Decide on the strategy with the best consequences, and evaluate your results.

Satisfactory ----- What happened?-----

Unsatisfactory ----- What happened?-----

When the problem occurs again, I have learned that:

And I will change my response by:

This is a systematic process for actively handling and resolving problems. You can return to this process many times as you encounter new problems. Learn to view problems as challenges and opportunities. Develop confidence and use a systematic, proactive process to respond to these challenges and opportunities.

Appendix 16.

Cognitive Restructuring Process

Steps	Self-Assessment Questions and Prerequisite Tasks for Change
<ol style="list-style-type: none"> 1. Identify the external event (Personal Stressor) 2. Identify your thoughts, beliefs, and behaviours, 3. Describe, clarify, and assess your emotional stressor. 4. Identify, dispute, and challenge irrational beliefs! Check catastrophic thinking and negative private monologues (critical self-talk). 5. Create rational beliefs and substitute for rational beliefs identified in Step 4. Develop and practice rational and personally helpful statements. 6. Implement and practice the process of cognitive restructuring when dealing with personal stressors in your daily living. Focus on the task and set a personal behavioral goal to handle the problem. 	<p>When? Where? What was I doing? Who was with me?</p> <p>I don't know what to study. I must do well, I'm stupid. There's no use studying anyway. I might as well give up and go to bed.</p> <p>Feelings: anxious, uptight, angry, confused, and helpless. Body Sensations: tight, tense.</p> <p>Examples of Core Irrational Beliefs:</p> <ol style="list-style-type: none"> 1. You must have sincere love and approval almost all of the time from significant people in your life. 2. You should be thoroughly competent, adequate, and perfect in everything you undertake. 3. Life is awful, terrible, or catastrophic when things do not go my way. <p>Examples of Rational Beliefs:</p> <ol style="list-style-type: none"> 1. I would like approval from significant others, but I do not need such approval to be a good person. 2. I can be successful without demanding perfection of myself. 3. I can make life enjoyable by changing how I handle frustration and stress. <p>I am scaring myself about failing when I really do not know what to study. I will talk to the teacher or classmate, make sure that I know what material will be covered, and study for a minimum of 8 hours for the exam.</p>

Appendix 17

Cognitive Restructuring Exercise

<ol style="list-style-type: none">1. Identify the external event (Personal Stressor)2. Identify your thoughts, beliefs, and behaviours,3. Describe, clarify, and assess your emotional stressor.4. Identify, dispute, and challenge irrational beliefs! Check catastrophic thinking and negative private monologues (critical self-talk).5. Create rational beliefs and substitute for rational beliefs identified in Step 4. Develop and practice rational and personally helpful statements.6. Implement and practice the process of cognitive restructuring when dealing with personal stressors in your daily living. Focus on the task and set a personal behavioral goal to handle the problem.	
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Appendix 18.

Identifying Personal Stressors

PART 1 Identify the Stressor Event	PART 2 Identify any Reactive Thoughts, Beliefs, and Behaviours	PART 3 Identify Any Bodily Sensations And Emotional Reactions
1. Date of event 2. Exact time 3. Location 4. What was I doing? 5. Who was with me?	6. What was I expecting to happen? 7. What images or memories came to mind? 8. What worries, concerns, or doubts did I have? 9. What was I saying to myself about the event? (Identify negative self-talk) 10. What major beliefs or assumptions were related to the event? (Personal Belief System} 11. What was I talking about? 12. What did I actually DO in reaction to the event?	13. What words (labels) best describe my bodily sensations and emotional reactions? SELF-ASSESSMENT STRESS LEVEL 14. How severe are the feelings of stress that I experienced from this event?

EXAMPLE

PART 1 Identify the Stressor Event	PART 2: Identify Any reactive thoughts, Beliefs, and Behaviours	PART 3: Identify any Bodily Sensations and Emotional Reactions
1. 12/12 2. 11.30 P.M. 3. Home in my room 4. Studying for final exam 5. By myself	6. I will study the wrong thing and fail like I did the last time. 7. I remember how angry and embarrassed I was when the last test was returned. 8. If I don't improve I will fail the test. 9. I'm stupid. There is no use in my studying anyway. 10. If I can't do well in anything, I am a failure. 11. Myself 12. Give up studying and went to bed.	13. Anxious, tense, angry 14. 4 – Severe stress.

Appendix 19.

Positive Imagery Relaxation

Seat or recline yourself comfortably. Get as comfortable as you can. Allow your eyes to close and relax ... Take in a slow breath.... Hold it for a few seconds

Release it slowly and notice the relaxed feeling change in your chest. Allow yourself to be calm, relaxed, and peaceful. With each breath, you become more deeply relaxed, quiet, and at peace with yourself.

Focus on the words I say, and allow your mind to create the images as I describe them. This is an exercise of positive imagery, a creation of pleasant thoughts and feelings, a way of relaxing completely and deeply.

'You are sitting comfortably on the shore of bar-beach. You look out at the blue water and watch as the white capped waves move toward the shore ...You are deeply relaxed and calm, finding peace with yourself.

You can feel warmth of the sun on your skin and the movement of the wind as your relaxation becomes deeper and deeper. In the distance you can hear the call of a sea bird and the sound of waves constantly meeting the shore.

The sky is a brilliant blue and the whiteness of cloud and the blueness of the sky contrast with the moving water. You are deeply relaxed and at peace with yourself, quiet and calm with comfortable feelings. Time passes quickly as you become more and more relaxed.

The sun is beginning to set and its fading light is red as it begins to disappear . You can feel a chill as the evening breeze blows cooler and the last rays of light from the sun are absorbed by the dark. The sound of the waves, the coolness of the breeze relax and calm you. You thoughts are calm, pleasant and peaceful. Be relaxed totally and enjoy the peaceful feelings and relaxation you have given yourself.'

At the count of three I want you to open your eyes feeling refreshed and full of energy. 1 – 2 – 3.

- ❖ Using your imagination and creativity write your own relaxation script. Pick a scene that you like best – one in which you feel peaceful, safe and relaxed.

Appendix 20.

The Emotional Curriculum Attitudes And Behaviours

- ☐ Achieve a balance between the cognitive and the emotional mind
- ☐ Develop active listening skills
- ☐ Identify and use your primary learning style
- ☐ Use school resources to improve your reading speed and comprehension
- ☐ Set personal goals (Drive Strength)
- ☐ Be organized, punctual, and dependable (Commitment Ethic and Time Management)
- ☐ Be assertive with yourself, friends, and teachers (Assertion)
- ☐ Effectively manage and express strong emotions (Stress Management)
- ☐ Appreciate and value difference (Empathy and Positive Influence)
- ☐ Focus on your Strengths (Self-Esteem)
- ☐ Establish and maintain healthy relationships (Social Awareness and Decision Making)
- ☐ Recognize and express emotions effectively (Anger and Anxiety Management)
- ☐ Be flexible (Positive Change)

Appendix 21

PEER MENTORING WORK SHEET MENTORS COPY

Basic Background Information

(Make sure you have all the information filled in below)

My mentee's names are:

My mentee's classes

Best time to call for meeting

Where should the meeting take place?

First meeting: Date_____

Objectives: •

Experience(s):

Second meeting: Date_____

Objectives: •

Experience(s):

Third meeting: Date_____

Objectives: •

Experience(s):

Fourth meeting: Date_____

Objectives: •

Experience(s):

Mentor's comments and observation

Appendix 22

PEER MENTORING WORK SHEET MENTEE'S COPY

Basic Background Information

(Make sure you have all the information filled in below)

My mentor's name is: _____

My mentor's class

Best time to call for meeting

Where should the meeting take place?

First meeting: Date _____

Objectives: •

Experience(s):

Second meeting: Date _____

Objectives: •

Experience(s):

Third meeting: Date _____

Objectives: •

Experience(s):

Fourth meeting: Date _____

Objectives: •

Experience(s):

Mentee's comments and observation

APPENDIX 23
EXPLORING AND DEVELOPING EMOTIONAL
INTELLIGENCE SKILLS
QUESTIONNAIRE
(EDEISQ)

Dear student,

This instrument is meant to explore the level of students' emotional intelligence skills. Kindly respond to these items as correctly and carefully as you can.

SECTION 1

Instructions: Please complete appropriately as applicable. All information given will remain strictly confidential.

PERSONAL DATA:

Identification Number: _____

Sex: Male: _____ Female: _____

Name of school: _____

Class: _____

SECTION 2

Instructions:

You will be completing an honest, personal assessment of current emotional abilities and skills in 4 separate and related parts. Your first response is your best response. Let your feelings decide the best response for you. Respond to each statement and tick (✓) your response.

M means most likely.

S means sometimes like.

L means least likely.

PART A: INTERPERSONAL SKILLS

Assertion		M	S	L
1	When I am really angry at someone, I usually feel some tension, but comfortable in expressing exactly what is on my mind.			
2	When I am really angry at someone, I usually act by expressing what is bothering me and working to resolve the problem.			
3	When someone is really angry at me, I usually feel tensioned and that I have the right to respond directly to the person.			
4	When someone is angry at me, I usually act by asking for explanation of the anger and dealing with the feeling in a straight forward manner.			
5	When I speak to someone who has authority over me, I usually feel comfortable and straight forward in my approach to the person.			
6	When I speak to someone who has authority over me, I usually act comfortably and at ease with the person			
7	When another person makes an important request from me, I usually feel comfortable about saying yes or no to the request.			
8	When another person makes an important request or demand of me, I usually act in line with my true feelings at the time and tell the person yes or no comfortably.			
9	When I am around a new group of people, I usually feel a little uneasy, but comfortable.			
10	When I am around a new group of people, I usually act in a relaxed manner by introducing myself to someone who looks interesting.			
TOTAL SCORE				
Anger Management				
1	When I am really angry at someone, I usually feel hostile and the need to verbally attack.			
2	When I am really angry at someone I usually act by angrily expressing myself or getting into an argument.			
3	When someone is angry at me I usually feel angry and hostile and the need to attack.			

4	When I am around a new group of people, I usually act by talking too much			
5	When I speak with someone who has authority over me I usually feel defensive or a need to develop a strategy to approach the person.			
6	When I speak with someone who has authority over me, I usually act aggressively or defensively with the person.			
7	When I make an important request or demand of another person I usually feel determined more about getting what I want than concerned about the feelings of others.			
8	When I make an important request or demand of a person I usually act forceful and overpowering in making the request.			
9	When I am around a new group of people I usually feel uncomfortable to get a conversation going.			
10	When someone is really angry at me, I usually act by showing my own anger by escalating the fight.			
	TOTAL SCORE			
	Anxiety Management			
1	When I am really angry at someone I usually feel anxious or confused about what to say.			
2	When I am really angry at someone, I usually act by avoiding saying anything to the person so as not to hurt his or her feeling.			
3	When someone is really angry at me, I usually feel confused and afraid, or the need to avoid him or her.			
4	When someone is really angry at me, I usually act by backing off, apologising or not really saying what I feel.			
5	When I speak with someone who has authority over me, I usually feel nervous about approaching the person.			
6	When I speak with someone who has authority over me, I usually act apologetically and uneasily with the person.			
7	When I make an important request or demand of another person, I usually feel anxious or reluctant about approaching him or her.			
8	When I make an important request or demand of another person, I usually act hesitantly or uncomfortably in making the request.			

9	When I am around a new group of people, I usually feel anxious or confused about how to start a conversation.			
10	When I am around a new group of people, I usually act cautiously and wait until somebody comes to talk to me.			
	TOTAL SCORE			

PART B: LEADERSHIP SKILLS

Social Awareness		M	S	L
1	My voice is clear and easily heard by others.			
2	My relationships with others are smooth and comfortable			
3	I am confident in my ability to be comfortable and effective in communicating with other people.			
4	I know when to talk and when to listen.			
5	I know how to ask a favour without imposing it.			
6	I know how close I can be to a person without making that person uncomfortable.			
7	I can tell how friendly I can be with a stranger.			
8	I am able to tell if it is alright to introduce myself or wait to be introduced.			
9	I am comfortable with all kinds of people.			
10	My ability to use my whole body (eyes, facial expression, voice tone and touch) makes communication with others easy for me.			
	TOTAL SCORE			
	Empathy			
1	I am a caring person and people seem to sense this in me.			
2	I understand and am patient with someone who is experiencing a lot of emotional problems.			
3	I am a warm and accepting person, and people are comfortable talking to me about their private matters.			

4	My friends tell me I am an understanding person.			
5	I feel the emotions of others as they feel them.			
6	I am considered to be a good listener.			
7	I accurately understand how a person feels when he or she is talking to me.			
8	When someone is telling me something important I concentrate the person and really hear him/her.			
9	I listen to and really understand another person's feeling.			
10	I accurately feels what another person feels			
	TOTAL SCORE			
	Decision Making			
1	I make a decision and act on it.			
2	I make my own decision independently and rarely ask for assistance from people.			
3	When involved in a group project, I suggest solutions which others accept.			
4	I am a good decision maker.			
5	My decisions are usually accepted as good by the persons affected.			
6	My friends ask for my help in making important decisions.			
7	I hardly regret the decisions I have made.			
8	I make decisions easily and with good result.			
9	I am decisive when a stressful situation calls for immediate decision.			
10	When faced with an important decision, I am not anxious that I will make a wrong choice.			
	TOTAL SCORE			
	Positive Influence			
1	I make strong and positive impact on majority of people I meet.			

2	I am persuasive without taking advantage of others.			
3	I feel comfortable about approaching another person with my ideas.			
4	When a group that I am in needs a spokesman I am usually elected.			
5	I 'take charge' of a situation when I need to.			
6	I am a convincing and believable person and my friends often ask me to 'talk to' somebody for them.			
7	My friends involve me in solving their problems.			
8	I am a good leader.			
9	I have a good ability to help others solve problems.			
10	I put others at ease in tense situation.			
	TOTAL SCORE			

PART C: SELF-MANAGEMENT SKILLS

Drive Strength		M	S	L
1	I set specific goals for my life.			
2	Despite the uncertainty of the future it pays to make plans.			
3	When involved in a task, I sometimes think how I will feel if I fail.			
4	I willingly undertake challenging projects that involves some risk of failure.			
5	I think more about success than failure when beginning a new task.			
6	I can keep my mind on a task for a long period of time.			
7	I do not give up easily when confronted with a difficult problem.			
8	I finish things that I start.			
9	I am an achiever.			
10	I am motivated more by the thought of success than by the thought of failure.			

	TOTAL SCORE			
	Time Management			
1	I organize my responsibilities into an efficient personal time schedule.			
2	I plan and complete my school works on schedule.			
3	I waste very little time.			
4	I know exactly how much time I need to complete assignments and projects.			
5	I am among the first to arrive at school events.			
6	I effectively work on several projects at the same time with good result.			
7	I control my responsibilities rather than being controlled by them.			
8	I am an effective and well organized person.			
9	I am able to manage my time well to avoid pressure.			
10	I set objectives for myself and successfully complete them within a specific time frame.			
	TOTAL SCORE			
	Commitment Ethic			
1	I am considered a dependable person.			
2	I do not procrastinate.			
3	When something needs to be done, people turn to me.			
4	I often work day and night on projects to meet a deadline that I have set for myself.			
5	When I decide to do something I carry through and do it.			
6	I am a hard worker even when I am not supervised.			
7	People admire my ability to accomplish what I set out to do.			
8	Even when I encounter difficulties, I complete my tasks.			
9	I rarely fail at anything I consider.			
10	In almost any area that I go into, I really do well.			

	TOTAL SCORE			
	Positive Change			
1	One of the things I need to change most is how I feel about myself as a person.			
2	One of the things I need to change most is the way I relate to my family.			
3	I am not satisfied with the way I manage my time.			
4	I need to change my school.			
5	I am not satisfied with my ability to handle problem or conflict.			
6	I am not satisfied with the amount of energy I put into being successful in life.			
7	I am not satisfied with my leadership ability.			
8	I am not satisfied with my decision making.			
9	One of the things I need to change most is the way I relate to other people.			
10	One of the things I need to change is the way I take care of my body.			
	TOTAL SCORE			

PART D: INTRAPERSONAL SKILLS

Self-Esteem		M	S	L
1	I am a cheerful person.			
2	My daily life is full of activities that keep me going.			
3	My feelings are not easily hurt.			
4	I am trustworthy and I comfortably depend upon myself.			
5	I would describe myself as a creative person.			
6	I effectively cope with the ups and downs of life.			
7	I am comfortable in revealing my weaknesses to my friends.			
8	I am excited about myself and I feel very comfortable with the			

	way I am as a person.			
9	I feel I am in control of my life.			
10	I am a self confident person.			
	TOTAL SCORE			
	Stress Management			
1	Even though I have studied I do not feel successful.			
2	I cannot find the time to really enjoy life the way I would like.			
3	My family and friends often encourage me to slow down and relax more.			
4	I am a tense person.			
5	I often want people to speak faster and find myself wanting to hurry them up.			
6	I am under so much stress that I can feel the tension in my body.			
7	My friends often say that I look worried and tensed up.			
8	I find it really difficult to let myself go and have fun.			
9	I am impatient with myself and others.			
10	In school I work under a great deal of tension.			
	TOTAL SCORE			

APPENDIX 24

ACHIEVEMENT TEST

SECTION ONE

PERSONAL DATA:

Identification Number: _____

Sex: Male: _____ Female: _____

Name of school: _____

Class: _____

SECTION TWO

PART 1: BIOLOGY Instruction: Answer all questions in this section

1. Which of the following is present in both a plant cell and an animal cell?
a. Cell membrane b. Cell vacuole c. Cell wall d. Chloroplast
2. Photosynthesis is a process by which
a. The sun's energy is used by living things
b. Green plants manufacture carbohydrate
c. The plants provides itself with all nutrients
d. Stored energy is released in green plants
3. For normal growths plants require----- in very little quantity.
b. Scarce element b. Micro elements c. Trace elements d. Test nutrients
4. Oxygen is the by product of -----
a.Respiration b. Combustion c. Photosynthesis d. Transpiration.
5. The micro-organisms that reduce the amount of nitrates are termed -----

- a. Nitrogen-fixing bacteria b. Denitrifying bacteria c. Nitrifying bacteria d. Symbiotic bacteria
- 6. The group of enzymes that act on carbohydrates are called-----
 - a. Amylases b. lipases c. ptyalin d. proteases
- 7. The plants that complete their life cycles in two growing seasons are known as-----
 - a. Annuals b. Annals c. Perennials d. Biennals
- 8. Which of the following methods is not used in preserving foods?
 - a. Smoking b. Canning c. Burning d. Salting
- 9. Which of the following water pollutants may lead to cholera?
 - a. Fertilizer b. Sewage c. Pesticide d. Moisture
- 10. A lichen is made up of -----which live in close association
 - a. Fungus and a green alga b. Fungus and rhizopus c. Moss and alga d. Fern and lich
- 11. The round worm which lives in the small intestine of a man is a type of ----- association.
 - a. Symbiosis b. Parasitism c. Carnivorous nutrition d. Holozoic nutritia
- 12. An ecosystem consist of -----
 - a. Non-living materials b. Abiotic and biotic components c. Producers and consumers d. Air, water and soil
- 13. Which of the following features makes fish to acquire buoyancy in an aquatic habitat?
 - a. streamline body b. Swim bladder c. Gills d. scales
- 14. Living things that are too small to be seen with the naked eyes are termed---
 - a. macro-organisms b. Micro-organisms c. Micro-bacteria d. Viruses
- 15. Typhoid fever is caused by -----
 - a. virus b. Bacteria c. Fungus d. Protozoa
- 16. An important vector in tropical Africa which transmits trypanosomiasis is -----

- a. tse-tse fly b. Housefly c. Mosquito d. Butterfly
17. One of the following micro-organisms is used in medicine in the production of Antibiotics.
- a. rhizopus b. Aspergillus c. Penicillium d. Paramecium
18. Which of the following instrument can be used to view micr-organism?
- a. binoculars b. Microscope c. Megascop d. Convex lens.
19. Insects which carry microbes from place to place are known as -----
- a. carriers b. Movers c. Microbias d. Bacteria
20. A purple coloration observed when using biuret test indicate that the food sample is --
- a. protein b. Starch c. Lipids d. vitamin

PART II: ENGLISH LANGUAGE

Instruction: You are to answer all the questions in this section.

Choose the word or phrase that is **nearly opposite in meaning** to the word underlined in questions 1-10.

1. He **extinguished** the fire as he saw it threatening to burn the house.

a. Kindled b. Fanned c. Switched d. Put off
2. Since the accused pleaded **guilty**, the judge insisted that he should be pardoned.

a. Ignorant b. Innocent c. Free d. Guiltless.
3. The employer was **tactless** with his comments to the workers.

a. Sober b. Cautious c. Helpless d. Careless.
4. Because of his hurting legs, he **ascended** the mountain slowly.

a. Moved to b. Abandoned c. Descended d. Touched down.
5. She gave the students **explicit** instructions.

- a. Confusing b. Simple c. Implicit d. Definite.
6. The story he told was **incredible** and nobody believed it.
a. Illogical b. Believable c. True d. False.
7. We prayed that the **austere** period will come to an end.
a. Bleak b. Easy c. Difficult d. Plenteous.
8. He has become unpopular because of his **dishonesty**.
a. Behaviour b. Rudeness c. Honesty d. Sincerity.
9. The panel took **unpopular** decision over the issue.
a. Acclaimed b. Accepted c. Unapproved d. Populous.
10. The judges' decision seems **irrevocable**.
a. Irresponsible b. Irrelevant c. Reversible d. Irregular.

Complete each of the following sentences in questions 11 – 20 with the correct alternatives from the list given (a-d).

11. The plane would have been _____ last year.
a. Grinded b. Ground c. Grounded d. Grind.
12. Isiaka was _____ deceived by the magician.
a. Being b. Been c. Beings d. Be.
13. Toyosi has _____ the idea of going overseas.
a. Bursts b. Burst c. Bursting d. Bursted
14. Your uncle is a sailor, _____ ?
a. Isn't it b. Wasn't it c. Isn't he d. Is he
15. We thought he has _____ hands with her.
a. Shakes b. Shook c. Shaken d. Shaked.
16. The man is used to _____ in the mornings.
a. Ran b. Run c. Runs d. Running.
17. Moji _____ to school nowadays.
a. Walk b. Walked c. Walking d. Walks.
18. Hassan is not as _____ as Kasali.
a. Learn b. Learnt c. Learned d. Learning.
19. Jane has not _____ any dress recently.

- a. Sowed b. Sew c. Sewn d. Sown.

20. The ladies shouted that they _____ been robbed

- a. Have b. Had c. Has d. Having.

PART III: MATHEMATICS

Instruction: answer all questions.

1. Find the range of the set of the following value: 3, 8, 9, 0, -5, 7, 1, -2

- a. 11 b. 9 c. 14 d. -11 e. 4

2. Express in standard form 0.0003456

- a. 34.56×10^8 b. 3.456×10^7 c. 3.456×10^{-4} d. 3456×10^4 e. 345.6×10^{-4}

3. Two triangles are said to be congruent if it is _____ equal (Abbreviation for sides and angles)

- a. SAS b. AAA c. none d. ASS e. RHS

4. Solve the equation $(y+5)(y-8) = 0$

- a. -5 or -8 b. 5 or -8 c. -5 or 8 d. 5 or 8 e. -5 or +8

5. $\tan 60^\circ$ is equivalent to ...

- a. $\frac{1}{2}$ b. $\frac{1}{\sqrt{2}}$ c. $\sqrt{3}$ d. $\frac{\sqrt{3}}{2}$ e. 1

6. Factorise, $ax - a + x - 1$

- a. $(x+1)(a+1)$ b. $(x-1)(a-1)$ c. $(a+1)(x-1)$ d. $(a-1)(x+1)$ e. $(ax-1)(x+1)$

7. What is the value of $x^2 + 2x - 2$, when $x = 1.8$

- a. -3.2 b. -2.4 c. 1.2 d. 1.8 e. 4.8

8. The height of a closed cylinder is equal to its radius r . Express the total surface area of the cylinder in terms of π and r .

- a. πr^2 b. $2\pi r^2$ c. $3\pi r^2$ d. $4\pi r^2$ e. $6\pi r^2$

9. The average speed in Km/h of a car which travels 72 km in 45mins is ...

- a. 45km/h b. 54km/h c. 64km/h d. 88km/h e. 96km/h

10. If $x = -7$ and $y = 3$, calculate the value of $2x^2y + y^2x$

- a. 221 b. 231 c. 200 d. 201 e. 241

11. Make x the subject of the formula $\sqrt{x/2} = a$

- a. $\sqrt{2}a$ b. $2a$ c. $2a^2$ d. $\sqrt{2}a^2$ e. $\sqrt{a^2}$

12. Express $4/x - y/3$ as a single fraction

- a. $4-y/3x$ b. $4x-3y/3x$ c. $4-y/x-3$ d. $3-x/3x$ e. $12-xy/3x$

13. If $7/2x - 4/3x = 13/12$ then $x =$

- a. -12 b. 0 c. 2 d. 3 e. 12

14. Which one is odd among the solid shape?

- a. Cuboid b. Cube c. Square d. Triangular prism e. square based pyramid

15. Simplify $125^{-2/3}$

- a. $1/5$ b. $1/25$ c. -5 d. -25 e. 0

16. Express 0.575 as a fraction in its lowest terms

a. $\frac{22}{40}$ b. $\frac{23}{40}$ c. $\frac{1}{40}$ d. 0.40 e. 0.4

17. Divide the sum of 3.19 and 2.39 by 3.6

a. 1.55 b. 15.5 c. 155 d. 0.155 e. 0.015

18. What is the coefficient of a in the expression $9a - 5a + 10a - 8a$?

a. 6 b. 8 c. 9 d. 10 e. 5

19. Multiply $(3 + a)$ by $(5 - 2a)$

a. $-2a^2 - 15 - a$ b. $-15 + a + 2a^2$ c. $2a^2 + 6a + 5$ d. $15 - a - 2a^2$ e. $15 + a + 2a^2$

20. Express 40cm as a percentage of 8m

a. 5% b. 8% c. 10% d. 20% e. 32%

