EFFECTS OF SOCIAL PROBLEM SOLVING PROGRAMME IN THE TREATMENT OF COGNITIVE DEFICIENCY AMONG MALE SECONDARY SCHOOL STUDENTS

BY

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DECLARATION

I, Saidu Abubakar, hereby declare that this thesis is a record of my own research work. It has never been presented in any previous application for a higher degree. All quotations are indicated by quotation marks or indentations and the sources of information are specifically acknowledged by means of references.

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25/9/2000
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CERTIFICATION

This thesis entitled "The Effects of Social Problem Solving Programme in the Treatment of Social Cognitive Deficiency Among Male Secondary School Students", by **Saidu Abubakar** meets the regulations governing the award of the degree of Doctor of Philosophy (Guidance and Counselling) of Ahmadu Bello University, Zaria and is approved for its contribution to knowledge and literary presentation.

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ABSTRACT

The main purpose of this study was to determine the effectiveness of social problem solving skills programme in the treatment of social cognitive deficiency among male secondary school students.

The quasi-experimental equivalent control group design was adopted for this study. Three male schools in Sokoto metropolis were randomly selected, pre-tested, and assigned to two experimental conditions, namely: treatment and control groups. The treatment group was made up of two schools and had a sample size of 105 students, while the third school served as the control school and had a sub-total sample size of 64 students

The treatment sessions were based on 12 treatment modules constructed for this study. These modules focused on particular topics considered necessary in promoting social cognitive ability. For each of the two treatment schools, there were three contact periods per week and each contact or treatment session was centered on a particular treatment module. Treatment session mainly involved direct instructions, discussions and assignments and this researcher himself led all such sessions. In all, treatment lasted for four weeks. The "t" test for independent samples was used to test three of the null hypotheses for this study, while the fourth hypothesis was tested with the Mann-Whitney "u" test.

Results of analyses on data collected led to the rejection of all four null hypotheses. Significant differences were found between the treatment and control groups in their posttest mean scores on all research variables. The

treatment group obtained significantly high posttest mean scores on Social Information Processing Skill Scores (SIPSS) and Social Reasoning and Interpersonal Understanding (SRIU) factors, and lower posttest mean scores on attitudes and Personal Social psychological Problems Index (PSPPI). This means that treatment has yielded significant increases in participants' ability to solve social problems presented in hypothetical situations and to reason at higher levels in interpersonal dilemma situations compared to the control group.

Although, the increases were assessed mainly on students' responses to hypothetical social and moral dilemma situations, discussions of the results seem to suggest that obtained results also have significant implications for participants' ability to solve real life personal, social and psychological problems. Increases or high scores on SIPSS and SRIU seem to point to better ability to solve personal, social and psychological problems, while low scores tend to indicate poor ability to solve such problems and hence greater susceptibility to real life personal, social and psychological problems.

Several recommendations were also made based on the findings of the study. This include the need for intensive guidance and counselling based intervention programme to be mounted in male boarding schools within Sokoto Metropolis in order to remedy the relatively high prevalence of social cognitive deficiency. It was also recommended that more attention be paid to social and cultural factors, particularly, beliefs in superstitions, indiscriminate use of proverbs and maladaptive interpretation of the belief in predestination because these seem to have negative influence on their social cognitive skills.

Finally, it was also recommended that similar researches be conducted on social cognitive skills, particularly, those that would include female samples, rural schools and other ethnic groups in Nigeria because these have not been fully covered in the present study.

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ABBREVIATIONS AND FIGURES

ATSPS	Attitudes towards social problem solving
AST	Alternative Solutions to social problems
CSP	Causes of Social Problems
LSRIU	Level of Social Reasoning and Interpersonal Understanding
PCSP	Possible Consequences of Social Problems
PDAS	Possible Difficulties Associated with Alternatives and Solutions (to social problems).
PSPPI	Personal, Social and Psychological Problems Index
RCBA	Reasons for Choice of Best Alternatives.
RCSP	Recognition and Comprehension of Social Problems
SCAT	Social Cognitive Assessment Test
SPSS	Social Problem Solving Scores
SIPSS	Social Information Processing Skills Scores
SISP	Sources of Information on Social Problems
SPM	Standard Progressive Matrices
SRIU	Social Reasoning and Interpersonal Understanding
SRO	Social Reasoning Orientation

Figure 3.1: Equivalent Control Group Design

DEFINITION OF TERMS

The following definitions constitute the operational meanings of the terms against which they appeared throughout this study.

ABILITY:

This is defined as the currently available power to perform something. In this study, an individual's mean score on the SCAT measured ability.

COGNITION:

This refers to any process for becoming aware of an object or thinking about an object or a situation. The ability to become aware of social and interpersonal relations presented in hypothetical situations was considered an aspect of cognition in this study.

COMPETENCE:

This is the ability to deal effectively with the requirements and possibilities for different situations. In this study, high scoreson the different social and moral dilemmas were considered as inductive of competence.

PROBLEM SOLVING SKILLS:

These refer to the ability to diagnose the features of social problem, identify cause and frame hypotheses. Others are generating and testing alternatives, determining possible obstacles to solutions, developing and implementing plans.

SOCIAL COGNITION:

Basically, this refers to how individuals think or understand the relationship between themselves and the social objects of knowledge. In this study, social cognition was measured in terms of an individual's ability to detect the problems in the moral and inter personal problems on the SCAT.

SOCIAL COGNITION SKILLS:

These refer to the ability to understand self and others and the interlocking relationships thereof, the ability to demonstrate accurate empathy in a particular situation, knowing what to say and how to act in problematic social or moral situation, and having a grasp of moral principles. High scores on SIPSS and SRIU on the SCAT indicate high social cognitive skills or ability.

SOCIAL COGNITIVE DEFICITS:

These refer to inability to co-ordinate social perspectives, inaccurate empathy in interpersonal relationship, inability to process social information effectively and a poor understanding of moral principles. In this study, social cognitive deficits refer to low scores on the social cognitive test for SIPSS and SRIU factors and high scores on PSPPI and ATSPS.

SOCIAL INFORMATION PROCESSING SKILLS/SOCIAL PROBLEMS SOLVING SKILLS:

These include the ability to search for and interpret social cues, generate alternative solutions, decide on an optimal response

and enact the chosen response in problematic social situations. These skills also rely on a certain degree of cognitive self-control and the ability to inhibit hostile or inappropriate social responding. For this study, scores on the social information-processing test give a measure of participants' social information processing skills (SIPSS) or social problem solving skills (SPSS)

CHAPTER 1

INTRODUCTION

1.1 Background to the Problem

Perhaps, the most consistent characteristic of life in the real world is that we are faced with one type of problem or the other, at virtually every given point in time. Some of these problems are quite common in nature and have readily available solutions, while others are very difficult, complex and complicated just as are the solutions to them. For yet others, we have to calculate the certainty or probability of their occurrences, the likely magnitude with which they may present themselves, and the solutions (if any) to them. But, these complexities not withstanding, the ability to successfully solve or find solutions to these problems has been identified for the past several years and is still held as a major distinctive attribute of a well adapted person (Schue, 1980; Dominowski, 1990; National Advisory Mental Health Council, 1996;).

This is why problem-solving and management approaches are at the core of many specialized helping and social work professions which aim at assisting individuals prevent, manage and resolve their troubles. For example, one of the often stated goals of counselling is to develop the personal decision making and problem solving abilities of its clients (Jones (1976); Heppener & Frazier 1992). Moreover, as Krumboltz and Thoresen (1976) have long pointed out, the concern is not merely with finding solutions to today's problems but also with teaching methods and techniques that people can use to solve future problems. Recently, Guerra (1993) also made similar observations; "teaching teenagers the cognitive skills necessary to inhibit impulsive behaviour and solve social problems can provide a solid foundation for effective social interaction" (p.7) In addition, NAMHC

(1996:182) emphatically stated that "the key to human intelligent behaviour lies in the capacity for thinking, reasoning and problem-solving..." (p.182).

Unfortunately, despite this tremendous importance of problem solving skills, much remains to be done. Egan (1986) made this point quite clearly when he said; although "talk about the importance of problem solving is everywhere, review the curricula of our primary, secondary and higher level schools and you will find that talk outstrips practice" (p.8). Similarly, Heppener and Peterson (1982) observed that "researchers within counselling have not develop a technology for helping clients with regard to problem-solving and decision-making" (p.66)

The main reason for this situation, according to Egan (1986), was the belief that problem solving skills are picked up through experience. To some extent this might be true. For example, research reports have pointed out, among others, that some evidence exist about differences in cognitive capacity across childhood and adolescence, in such areas as knowledge base, strategy used, and meta-cognitive abilities (Guerra, 1993). She further points out that processes that are highly important at one developmental period may be less significant at others. Implicitly therefore, some problem solving skills can be acquired as part of normal human development and experience. However, the presence of ineffective or unsuccessful problem solvers in schools (Egan, 1986), the presence of personality maladjusted students as noted by the National Policy on Education, (1981:48), a long list of behaviour problems in Nigerian Schools (Akinboye, 1987, Chukwu, 1987:137), all strongly indicate that problem solving skills picked up as a function of normal human developmental processes are not adequate to assist individuals become successful problem solvers.

D'Zurrilla and Goldfried (1971) articulated one of the earliest theoretical models of social problems solving. They formulated a five-step process of solving personal and social problems for adults. They proposed that to solve any personal or social problem, an individual must first, identify a situation as problematic, second, generate a variety of possible solutions; third, evaluate the consequences of previously generated solutions; fourth, decide on an optimal response; and finally, enact the chosen strategy. An adult who was deficient in these cognitive skills was believed to be at risk for a range of psychological problems.

This model has since been modified and applied to children's social behaviour by many other researchers. From such studies, according to Guerra (1993), evidence suggests that alternative solution and consequential thinking are the cognitive skills that best predict behaviour adjustment for children, and that the remaining social cognitive skills gain importance during middle childhood and adolescence. These researchers also found significant relationship between biases and deficits in processing information and problem behaviour in children.

Other studies have extended these research efforts to adolescents. For example, Dodge; Price, Bachoriski & Newman, (1990), have developed social problem solving models for aggressive and aggressive-delinquent adolescents. From this study, aggressive and aggressive delinquents have been found to be more likely than their less aggressive counterparts to adopt hostile goals, and are also less likely to seek additional information, generate alternative solutions, and choose non-aggressively. In short, individuals who

are deficient in social problem solving skills are more likely to be aggressive and less successful in problem solving.

A major weakness of all these attempts to extend social problem solving skills to the various segments of the population has been the emphasis on the social problem solving skills to the neglect of other factors particularly those that affect the "machine" that does the processing (i.e. the problem solver himself). For example, it is an established fact that cognitive processes interact with affective processes and behaviour (Heppener & Frazier, 1992). Also, there is the fact that an individual's belief system greatly determines his social behaviour (Guerra, 1993), including his social problem solving. Thus, there is the need for social problem solving models to pay greater attention to those inhibitory traits of the problem solver. Some recent models of social problem solving are increasingly giving these factors more consideration. An example of these attempts is the work Slabby and Guerra (1990) who developed a social problem solving intervention programme for incarcerated male and female adolescent delinquents. The focus of this programme is to increase participant's social information processing skills and to modify beliefs that support the use of aggression across a range of social situations.

Although the recent efforts are impressive, more can still be done. For example, NAMHC (1996) stated that the socio-cultural environment of people, how they live, what they value, what they do - has a significant effect on the intellectual skill developed by the individuals. Thus, since social problem solving skills are essentially intellectual skills, it is imperative that a

consideration of the socio-cultural environment of the target population must be made in order to achieve more effective and permanent results. This is particularly so in view of the fact that much of the earlier researches and existing intervention models were developed and conducted in the United States of America and other developed societies. On the local scene, there seems to be dearth of research and intervention models on social problem solving.

1.2 Statement of the Problem

Several studies have reported the prevalence of personal, social psychological and other forms of behaviour problems among secondary school students. Okon (1984,1986) for example, has reported several types of problems facing secondary school students ranging from personal to interpersonal social and psychological problems. Mukolu (1997), also found personal social related problems such as social isolation and neglect by peers among students in Command Secondary Schools in Nigeria.

Chukwu (1987) also reported several types of behaviour problems, which seem to be typical of reported problems Secondary School Students in various parts of this country.

In general, the assessment instruments employed by most of these studies tended to emphasize the "out-ward" or "observable" manifestations of such problems, rather than the internal and perhaps the more serious causes. Although Bakare's (1977) Student Problem Inventory has sections on personal, psychological problems, it works with students' own rating of these

problems which does not say much about the particular social cognitive skills causing such problems.

The identification of the particular cognitive deficits causing personal social problems is however, only one side of the problem. An even more serious problem which counselling research does not seem to emphasize, especially in Nigeria is the specific steps and techniques Secondary Schools students would require in solving such classes of problems.

Furthermore, even among existing models, background literature seems to suggest that a lot could still be done to increase the efficacy of social problem solving models and programmes. Most of the existing models for example, tended to focus just on the discrete social problem solving skills to the neglect of other factors such as the excitatory, inhibitory and social cognitive competencies that affect individual's ability to solve social problems. There is also the need for social problem solving skill programmes to control for socio-cultural variables in the life of individuals because these also tend to have influences on people's ability to solve social problems.

This study was conducted to examine the effectiveness of social problem skills programme on a sample of senior secondary II students who were considered to be deficient in these skills. However, because of the issues raised above, and particularly the recommendations made by Fenton (1978); Guerra (1993); NAMHC (1996), and Neisar et al., (1996), the present programme included modules on social information process skills, as well as, other social cognitive skills and concerns which were considered necessary for achieving optimal success in solving personal, social and psychological problems.

1.3 Research Questions

The following research questions were raised for the present study: -

(1) Would treatment in social problem solving skills programme yield any positive result for a sample of students considered deficient in social information processing skills?

(2) Would treatment in social problem solving skills programme produce any positive result for a sample of students considered to be functioning at lower levels of social reasoning and interpersonal understanding?

(3) Could treatment in social problem solving skills lead to any significant reductions in the number of items considered as negative attitudes and behaviours towards social problem solving?

(4) Could treatment in social problem solving programme lead to any significant reductions in the number of items considered as problems on real life personal, social and psychological problems index?

1.4 Objectives of the Study

The study was conducted to achieve the following objectives: -

(1) Construct relevant social problem solving skills programme to be used in the treatment of social cognitive deficiency among senior secondary II students.

(2) Examine the effectiveness of the social problem solving skills programme in the treatment of deficiency in social information processing, social reasoning and interpersonal understanding skills.

(3) Determine whether treatment in social problem solving skills programme could lead to reductions in negative attitudes towards social problem solving?

(4) Find out whether treatment in social problem solving programme could lead to any significant reduction in the number of items considered as difficulties on a real life personal social and psychological problem index.

1.5 Assumptions

This study was based on the following assumptions that: -

(1) There are specific social information processing, social reasoning and interpersonal understanding skills which individuals could be taught to recognize and apply appropriately through social problem solving skills treatment programme.

(2) Individuals who are deficient in these skills will experience more difficulty in their ability to solve hypothetical personal, social and psychological problems, while those who have acquired significant amounts of these skills will have less difficulty in solving such problems.

(3) It is possible to obtain significant reductions in negative attitudes towards social problem solving through treatment programmes designed for this purpose.

1.6 Null Hypotheses

The following null hypotheses were tested in order to achieve the objectives of this study: -

HO_1: There is no significant difference between the post test mean scores of the treatment and control groups on measures of social information processing skills (SIPSS).

HO_2: There is no significant difference between the post test mean scores for the treatment and control groups on measures of social reasoning and interpersonal understanding (SRIU).

HO_3: There is no significant difference between the posttest means on attitude for the treatment and control groups.

HO_4: There is no significant difference between the post test mean scores for the treatment and control groups on the personal, social and psychological problems index (PSPPI).

1.7 Significance of the Study

This study is significant for several reasons. First, it is particularly relevant to the goals and objectives of secondary education as stated in the **New National Policy on Education** (revised, 1981:16). Two of the objectives of secondary education, as stated by the document are; "to equip students to live effectively in our modern age of science and technology", and to "raise a generation of people who can think for themselves". Perhaps, one of the best ways of achieving these objectives is through teaching students effective problem solving skills. Watts (1992:16) for example, stated that some of the virtues of problem solving are that it:-

1. encourages youngsters to take ownership of a task;
2. encourages decision-making and many social skills;
3. provides relevance in real life context;
4. is a vehicle for teaching many scientific skills

5. is a form of both active learning and discovery learning;

6. allows cross-curricular activity, to mention just a few.

Guerra, (1993) also enunciated that: 'adolescents' social competence can be promoted by providing activities that foster cognitive development in social problem solving skills in terms of both general enhancement activities and specific clinical interventions". (p.58)

Recently, NAHMC (1996) in it's "new approach to intelligence", stated that although individuals may differ in how much they know, the most significant differences seem to relate to people's ability to plan how to solve a new problem, to decide about alternative approaches to that solution, and to monitor progress towards solution. Clearly then, research efforts in problem solving, particularly those that involve constructing practical teachable modules or units, can go a long way in providing the needed tools to develop students' ability to "think for themselves" or to paraphrase Clark and Palm (1990), become "autonomous problem solvers".

Another important reason for this study is the need for locally adapted social problem solving model that would address the major socio-cultural factors, which can influence the social problem solving process. This is particularly so considering recent research findings which strongly relate the social-cultural environment of the individual as important determinant of his/her cognitive functioning and capacity. For example, NAMHC (1995) reports a study, which found that in Denmark, the rate at which social cultural factors affect recovery (two years after the first episode of schizophrenia) was 6 percent, but in Nigeria it was 58 percent.

The study also has important implications for the national economy. For example, NAMHC (1995) reported that despite the striking progress achieved by the mental health professionals in the United States of America in understanding the origins of mental disorders, and developing more powerful ways to diagnose, treat and prevent them, mental disorders of all types cost that nation an estimated 148 billion dollars. This figure, the report continues, includes treatment of 67 billion dollars – that is 10% of the total annual direct cost of health-care in the same country. Although such estimates are not available for Nigeria, one will expect that the figure may not be anything proportionately less than the figures for the United States of America. This is especially so considering the fact that Nigeria has not attained the excellent level of health care facilities achieved by the Western European countries nor have we achieved the scientific and technical fits in research and therapeutic models for mental health. Moreover, with such an alarming statistics as those cited above with regards to how socio-cultural factors affect mental health, it might be safe to conclude that the cost to the economy (both financial and human) will be proportionately higher than the figures for the United States of America.

However, through research efforts such as this, it is hoped that these heavy human and financial losses can be reduced to the bearest minimum. This is because "autonomous problem solvers" are more likely to achieve better mental health, adopt positive mental attitude to life and become self-actualising and productive individuals.

Another significance of the study is its directed relevance to the students themselves. Numerous studies have reported various kinds of social maladjustment problems among secondary school students in Nigeria. The National Policy on Education (Revised, 1981) for instance, has acknowledged the incidence of personality maladjusted students. Abubakar (1989) reported poor career planning abilities and unrealistic life plans among secondary students in Sokoto State. Chukwu (1987:147) also reported a relatively high incidence of sexual promiscuity, fighting, alcoholism, bullying and rebellious acts among secondary school students in Imo State and that these problems are mainly caused by "failure to complete developmental tasks and growth problems". Okon (1984) also reported very high percentage of numerous types of problems that secondary students in forms 3, 4 and 5 are facing. Such problems according to him, include lack of sufficient time for reading (65/73/32 percent for forms 3, 4, and 5 respectively). Worrying about ill treatment in the school (47/42/32 percent for forms 3, 4, and 5 respectively), worrying about what to believe, to mention just a few.

No doubt, it is appropriate to adduce that, in addition to other factors mentioned by the authors, these problems are also caused and/or perpetuated by lack of social problem solving skills. Consequently, teaching students these skills is one of the surest ways of assisting them to manage their problems more successfully.

Finally, it is hoped that this research will stimulate more counselling research in the area of human problem solving in Nigeria, as well as provide textbooks writers and curriculum designers in guidance and counselling, with

some material to consult in their efforts to provide reliable literature on topics related to social problem solving.

1.8 Delimitations of the Study

To ensure effective control on both experimental variables and participants, the following delimitations were considered necessary;

1. The study was delimited to only 4 weeks (3 contact hours per week) of instruction, modelling discussion and practice in social problem solving skills adopted for this study. There was, however, no treatment of whatever kind for the control group (except the pre-tests and post-test to be administered on them).
2. The study was also delimited to students at the senior secondary school II level in two male boarding secondary schools within Sokoto metropolis, so as to ensure firm control of experimental variables and conditions.
3. Although, there are many social problems solving skills intervention models, this study was delimited to only the outline employed by this researcher. This measure was taken to ensure that the modules designed for this study were given full attention and adequate practice during treatment sessions.
4. Similarly, although there are other methods of assessing social cognitive skill deficits, assessment and classification or categorisation of deficits was delimited only to the outline adopted by this researcher. This

was considered necessary because existing models do not seem to fit the objectives of the present study.

Summary

One of the often-stated goals of Counselling is the development of the personal problem solving and decision-making abilities of its clients. This is because such skills are generally believed to be the most important determinants of success in solving the myriad of problems and challenges that people face in everyday life. Even though initially there had not been enough systematic counselling researches on problem solving, yet there is reason to believe based on current literature, which some progress has been made in the past two decades.

However, despite these recent successes more could still be done. This is particularly so at the local level where there seems to be virtual dearth of relevant social problem solving skill enhancement programmes, in-spite of the critical need for such materials. This study was specifically designed to determine the effectiveness of social problem solving skills programme on a sample of senior secondary II students considered to be experiencing serious deficiency in such skills.

CHAPTER 2

REVIEW OF RELATED LITERATURE

2.1 Introduction

The purpose of this study was to determine the effects of social problem solving programme in the treatment of social cognitive deficiency. Consequently, an attempt was made in this chapter to review related literature on the following major areas.

(I) Definition and nature of social problem solving;

(II) The major stages of social problem solving process,

(III) Strategies for solving personal social problems,

(IV) Theoretical approaches in the study of problem solving,

(V) Factors affecting problem solving.

(VI) The nature and approaches to social cognition,

(VII) Types of social cognitive skills,

(VIII) Assessment strategies for social cognitive skills,

(IX) Related empirical studies.

2.2 Social Problem Solving.

2.2.1 Definition of Problem Solving

Problem solving is one of the most complex activities that human beings engage in. It often calls for all the cognitive facilities for information comprehension, remembering, reasoning and decision-making. In fact, based on their "arbitrary" division of the subject matter, Radford and Burton

(1978) stated that problem solving has perhaps the best claim to be considered synonymous with thinking itself. Anderson (1993) also makes a case for problem solving as "the structure that organises human thought". Beyond these general agreements however, authors have differed in their definition of problem solving and furthermore, each definition tends to reflect some theoretical biases or inclinations.

Anderson (1993), Galton (1970), and Davis (1966) all identify problem solving as a learning process by which the learner discovers the combination of previously learned rules (often in form of stimulus-response bonds or associations), that can be applied to achieve a solution. The process often leads to or results into new learning. For the Gestalt psychologists, problem solving is the attainment of a sudden insight into a problem (Stevenson, 1993). Some of the processes leading to this "sudden in-sight", according to them, are selective perception and fantasy thinking.

From the information processing tradition, problem . solving is often defined as the process of "selecting", "traversing" or "moving" through a problem space to find one of a rare set of paths with preferred properties (Newell and Simon, 1972, Green, 1988). Thus, the major concern of the information processing theorists in problem solving is to chart the sequence of events from the statement of the problem to its final solution.

For clinicians and social workers, problem solving refers to the process of overcoming difficulties encountered in the attainment of an objective. It seeks to release tension and restore the organism to a state of inner equilibrium through adjustment to circumstance or alleviation of hindrances

(Bingham, 1968, Watson and Tharp, 1985). This process of overcoming difficulties often consist of a set of sequential steps that minimise negative emotional under currents, while maximising the identification, evaluation and implementation of optional solutions (Bellack, Morrison, and Mueser (1992).

Distinctions are also made between domain specific and general problem solving. The argument for domain specific problem solving states that, people tend to encode the concrete specifics of a problem rather than its more abstract generalities. Hence problem solving by analogy (that is, applying general problem solving principles to specific problems), is unlikely to be the basis of problem solving (Hegarty, Mayer, and Monk (1995). On the other hand, those who support the idea of general problem solving skills argue that there are indeed, some general cognitive skills which are capable of "building in", generalisations to a wide variety of situations (Dominowski, 1990, Guerra, 1993;). Newell and Simon's general problem solver is an example of this approach.

Another distinction that can be made with regard to the nature of problem solving is that between productive and reproductive problem solving (Scandura, 1977; Stevenson, 1993;). Based on his work on higher order rules in problem solving, Scandura (1977), acknowledged the existence of some basis for Wertheimer's (1945) classification of problem solving into reproductive and productive. Reproductive problem solving refers to selecting rules from past solutions to solve all other problem like them. Productive problem solving on the other hand involved identifying parallels

among successive applications of rules to problem situations to solve a set of problems larger than originally envisioned.

Finally, one of the common ways of discussing the nature of problem solving found in the literature, is to distinguish between successful or expert, and unsuccessful or novice problem solvers. Mcguinnes (1990; 302) for example, stated that "conclusions from meta cognitive studies indicate that expert or mature problem solvers differ from novice or unsuccessful problem solvers because they have greater knowledge about when and how to use their cognitive resources". Moreover, they also have a larger repertoire of responses and a high probability of making the right selection. On their part, Whimbey and Lochead (1982), and Shure and Spivack (1978), identified several characteristics or attributes typically associated with good and bad problem solver. Good problem solvers, they believe, tend to have positive attitude, concern for accurate understanding problems, avoiding guessing to mention just a few. Poor problem solvers, on the other hand, tend to lack these attitudes.

From this brief discussion on definitions of problem solving, it is apparent that there are many views and conceptions of the complex activity called problem solving. However, there seems to be a general agreement (except in the case of the gestalt psychologist), that it is a process that is made up of certain steps or stages. In the next segment of the review, an attempt is made to identify these steps or stages particularly those that are relevant for social problem solving.

2.2.2 **The Social Problem Solving Process**

The major stages or steps including the following: -

1. **Recognition or Identifying Problem**

One is said to have a problem when he/she wants something and does not know immediately what series of actions he/she can perform to achieve the goal (Stevenson, 1992; Watts, 1992). The desired object may be very tangible (e.g. a banana to eat) or abstract (such as developing a theory). It may be specific (that particular banana) or general (something to relieve hunger). Problems may also be simple and routine as preparing a meal for dinner, or as complex as developing an elegant new work of art. Problems may also be emotional in content.

Problems can also be identified in terms of their level of difficulty. Watts (1992:9), for example, identified the following levels of problem difficulty.

Level 1 - Solver already knows solution.

Level 2 - Solver already knows rules for obtaining solution

Level 3 - Solver learns correct solution during that task

Level 4 - Solver has to select and evaluate operations for obtaining a Solution

Level 5 - Solver has to reformulate problem and/or produce some unusual Method of solution.

Level 6 - Solver has to realise that problem exists.

Kosonen and Winne (1995) defined problem in terms of format rather than domain, because according to them, the latter connotes different subject

areas. From their perspective, problems can be said to be of three major kinds; probabilistic, objective and subjective. In probabilistic format, random variation in a sample of data is obvious in the problem presentation (e.g. there is explicit mention of a random sampling procedure). In the objective format, an objective qualitative metric rather than random variation (e.g. pounds as opposed to how fat a person is), is used to describe data. While in subjective format data from a sample are not reliably measured (e.g. how "funny" a situation is), and it is not explicit whether random sampling has been used to select cases.

The importance of recognising a situation as problematic is that awareness of the existence of the problem often produces greater sensitivity to, and realisation of the need to solve it. This is why the most difficult problems are those that we are not aware of their existence because without such recognition or acceptance of the problem as real, we never make any effort to solve it. In a sense therefore, all the other stages of the problem solving process are dependent on the first stage.

Some of the frequently used method of assisting people to recognise social problems are encouraging them to ask questions, observing what is going on around one's environment, paying attention to the inner happening inside ones self now and always (Harris, 1977). Priestley (1978) recommends the use of sentence completion and problem checklist to assist individuals recognise or identify their problems. Sentence completion exercises simply involve asking individuals to supply answers to the following question (as honestly as they can).

"My best problem is....."

Additional information could be added by supplying answers to a further sentence.

"I also have problems with....."

Although answers might sometimes be naïve and incomplete, such exercises often do provide a basis for further processing and proving

ii) **Interpreting or Analysing Problems**

Analysing problems involve breaking them down into smaller and less intimidating parts. It also involves identifying in all the possible consequences to self, others and society as a result of failure to solve it. Theoretically, one of the basic activities involved in interpreting or analysing a problem is that of creating a mental model image or picture of that problem. According to Green (1988), the mind makes use of a wide variety of representations or picture of the various elements of problem, which are sometimes not available to our conscious memory. The mind might use visual images, graphs or hierarchical trees to achieve this.

In more practical terms, Priestley (1978) recommends the use of the 5-h system, pattern notes, ranking, to mention just a few, to analyse the various aspects of a problem. The 3 – 5-w-h system for example, assist people to determine the scope of the problem by asking, in relation to any problem. What?, Who?, Where?, When?, Why, and How?

This means asking oneself, what is the problem? Who does it affect (is it me, my friend, wife etc.) Where does it happen (at home or ih the school)? When did it begin? Why does it happen (is it my own laziness or

unwillingness to solve or do something about it? And how could it be tackled? Through this procedure, individuals will be able to analyse many parts of the problem, which are hitherto unclear or suppressed.

iii) **Generating or Determining Possible Solutions**

In theory, determining possible solutions or alternatives to problems essentially involves selecting operators for a particular problem space. An operator is an action that transforms one state into another state. For any problem solving situations, there by yielding a variety of subsequent states (Stevenson, 1992; Newell & Simon, 1972). Selecting an operator for a particular problem-solving situation often involves the application of foresight (i.e. a problem solver must answer the question: which of the several alternative operators shall apply next in building this path towards the goal?) Although this stage sometimes includes determining the strategy and the obstacles to be faced in solving the problem, these are not discussed here. (They are discussed in a separate sub-section).

One of the most frequently used method of assisting people to generate solutions and alternatives to a problem (In fact in all the stages of social problem solving process), is brain storming. (Priestley, 1978; Watts, 1992). The major aim of any brainstorming exercise is to generate as many ideas as possible on a given topic. The basic rules for brain storing are:-

(i) Suspend judgement : The value of the ideas can be sorted out later;

(ii) Aim for quantity not quality. That is, produce as many ideas as possible at the initial stage.

(iii) Let the mind wander-wild and quirky ideas can be turned out to be winners.

(iv) Build on the ideas of others – respond to what is already written up, add to it, expand it.

A re-run can be carried at a later time to dig out other ideas that have not been that have not been identified at the first attempt.

(iv) *Gathering or searching for Information or Data*

Reliable data or information is an important component of the problem solving process. Information can widen and deepen the quality of decision making (i.e. selection of optimal solution). In some problem solving situations all the information that is required may be easily and readily accessible to the problem solver.

However, in many problem-solving situations, information is not always freely available, while in yet other situations particularly personal social problem information required is often scanty. To make matters worst, some individual lack the skill to extract relevant information to solve their problems. Other additional sources of difficulty include information sampling errors and biases (Tversky 1976, Ariel 1992, Heppener and Frazier 1992). To ensure that relevant and reliable information is gathered, individuals must painstakingly track down and sniff out all the information they can get to achieve this. Priestley, (1978) recommend the following:-

(i) The use of case studies, which illustrated the information – getting process

(ii) Asking group members or other significant persons in his/her life.

(iii) Visiting specific areas which might contain desired information e.g. libraries.

For some authors (e.g. Egan, 1986, Bingham, 1968), scrutinizing and organising information is a separate stage of the problem solving process while others (Dumas, 1992, Bellack, et al, (1992), it is part of the information gathering stage. At whatever, stage it is situated, information synthesis is an important stage of the process, and if adequately done, it can create new awareness, evolve new considerations and may often necessitate re-arranging what is already known about the problem. It may also lead to a changed viewpoint and provide choices not apparent in the original formulation.

(v) Selecting or choosing the most suitable solution

If all the previous stages have been carefully and adequately done, the solver is often faced with many alternatives or potential solutions all or most of which might be used to solve the problem, this calls for evaluation and decision making skills. Evaluation or decision making, with regards to problem solving, demands thinking through each solution with all its implications, and anticipating its possible outcomes and effects. It also demands being aware and taking into account personal biases and prejudices that may influence the choice of a final solution. Some of the processes, skills and methods of selecting final solutions one discussed in some detail below under decision making and problem solving.

(vi) Implementing or applying the Solution into Action

The goals of the problem solving process will not be attained until the solution has been put into action. This is why it is often said that identifying, clarifying, analysing and generating solutions to problems are next to worthless if the solutions are not applied. That is, the problem solving process is never complete without applying the selected solution to solve the problem.

One of the most important activities involves in this stage of the problem solving cycle, is identifying the restraining and facilitating forces in the course of implementing the solution into action. Restraining forces can come from within the problem solvers themselves, from others, and from the social systems of their lives. Similarly, the facilitating forces or resources in implementing solutions can some from others persons places or things in the environment of the problem solver.

Some of the practical methods of assisting individuals to implement their solution are force-field analysis, use of check or think steps, training solvers to be assertive, use of self contracts, evaluation feedback information and making use of the principles of behaviour (such as self rewards and self punishment or sanctions?) (Egan, 1986; Priestley, 1978). The force-field analysis essentially involves identifying factors that could facilitate and restrain the attainment of a solution, and then identifying ways of strengthening and reducing these factors respectively it thus involves the use of the principles of brain storming as discussed above. Think or check steps are essentially question steps, which problem solvers are required to supply answers to. There are three of these steps.

(i) Before check steps:- Questions under this step include, is it clear in my mind that I want this solution? Do I have any reservations or fears about this alternation?

(ii) During Check Steps:- Questions under this category include, am I experiencing any difficulties as a result of this plan? What are the negative forces that have developed as a result of this plan?

(iii) After Check Steps:- How am I feeling as a result of the plan implementation? Am I feeling depressed or defeated? What is the lesson gained as a result of the action plan. No doubt, these steps are simple and easy to use. They can also be of immense help in the process of putting solutions into action.

Use of self-contract is another helpful method in putting solution into action particularly with solutions that might take longer time to achieve. Self contract or making contract with oneself is essentially, similar with other forms of contract, although in this case both the contractor and the client, are the self. They could be oral or written and should include rewards and sanctions appropriate for the desired behaviour. They could be reviewed at a later time and revised if necessary. It should be as specific as possible, and must indicate the time when it is to be reviewed.

In sum, the problem solving process is never complete with the implementation stage. When this stage is carefully carried out, the problem solvers gets a renewed confidence in self, gets a sense of accomplishment and relief of the circumstances that warranted the entire process in the first place.

(vii) Evaluation

Evaluation is another important step in the problem solving process. Although it is discussed as the last stage of the problem solving process in this review, it is involved in all the stages of the problem solving process (Egan, 1986). The problem solver is expected to, assess the quality, adequacy and effectiveness of the activities carried out in that stage. That is, a solver is expected to evaluate the quality, adequacy and effectiveness of the steps in clarification, analysis, generation and selection of solutions. He is also expected to asses the quantity and quality of the information gathered, strategies and action steps taken or adopted in solving the problem. It is in this way that evaluation is often described as the "centre" or "thread" (Egan, 1986; Priesley, 1978), which runs through the whole process.

There are two major types of evaluation in the problem solving process. These are; ongoing and summative evaluations. Ongoing evaluation, according to Egan (1986) is much more positive. This is because it helps both client and helper to learn from what they have been doing, celebrate what has been going well, and correct what is deficient. Summative evaluation on the other hand, is often judgmental and involves asking questions such as have the solutions satisfactorily reduce or overcome the difficulty around which the problem was constituted? Are there implications for new problem situations? Is the solution consistent with all aspects of the problem?

The review in this sub section briefly dealt with the stages or steps of the problem solving process. The review has, among others, highlighted the

need for further review on topics such as strategies for solving problems, decision making, and competencies for choosing or selecting among alternatives.

2.2.3 **Strategies for Solving Problem**

Anderson (1993) simply defines problem solving method as "the principles used for selecting operators"(p.37). The method chosen can vary from blind search to executing an algorithm that is guaranteed to find a minimum step solution. Before a discussion of the problem solving methods, it might not be out of place here to mention that the particular method a problem solver uses is partly a measure of his intelligence, level of training received, the goal(s) of the problem solver, the nature of the problem itself and the task environment (Newell & Simon, 1972:847). These factors and others are discussed fully under factors affecting problem solving.

In theory, there are two major categories of methods or strategies for solving problems. These are algorithms and heuristics. An algorithm is an orderly sequence of instructions for solving problems. Algorithms have also been defined as "sets of rules, which if followed, will automatically generate the correct solution (Lindsay & Norman, 1977:555). The rules for multiplication for example, are an algorithm because if used/followed properly there will always be a right answer. One of the merits of algorithms is that it reduces the problem-solving task to a series of comparatively simple operations. These operations are usually choices between alternatives and hence can be used for simple real life problem solving situations. For

example, an algorithm can be set out diagrammatically so that the subject is faced at each stage with two clear alternatives. In therapeutic situations this can be very helpful in getting individuals to face up two alternatives.

Unfortunately, despite the tremendous advantage of algorithms in guaranteeing the correct solution to problems, they are not helpful in many complex, ill-structured real life problem situations. This is because the appropriate algorithms have not been discovered for such problems, and may perhaps never be discovered since they do not exist (Lindsay & Norman, 1977:555). Thus, for the many and more complex everyday problems in our social world, heuristic search methods are the only option.

Heuristic search involves looking at a large portion of the problem space at first, and then (by applying relevant information gained about the problem) narrow down the search area until it becomes more manageable (Malim 1994:156). According to Malim (1994) and Newell and Simon (1972), three major categories of problem solving methods based or derived from heuristic search can be identified. These are:-

(i) Means – ends analysis

(ii) Planning strategies

(iii) Backward searching

(i) **Means-Ends Analysis**

Although not all-human problem solving is organised by means ends analysis, Anderson (1993:38) has opined that it has played the largest role in accounting for human problem solving behaviour. According to him means-ends analysis are used in academic problem solving, in puzzles (like the

Tower of Honoi), in personal problems, in every day problem solving; to mention just a few. In fact, according to him, means ends analysis seems to be an innate part of the cognitive machinery of humans and other primates. In simple terms, means-ends analysis refers to the process of breaking down problems into smaller elements. After that each of these sub-problems (or elements) are dealt with by identifying the sub-goal or sub ends, while not forgetting the grand ends. The basic cycle, according to Anderson (1993) "is to look for the biggest difference between the current state and the goal -state and then try to reduce that difference". (p,38). The problem solver then makes a sub-goal of eliminating that difference.

For example, if the goal of a problem solver is to reduce lateness to school and he thinks that the biggest sub problem in this regard in developing a good time table that will ensure not going to bed late. He will first make a sub-goal of removing or solving this sub-problem. In this case, the problem solver is no longer working on the "original" or "grand goal", but on the sub-goal. It is important at this juncture to note that goals can refer either to the difficulties to be surmounted or gaps in information and specification to be filled (Newell & Simon, 1972:839). In both cases, their continued existence simply implies that there must be a continuing effort to reach that goal.

Anderson (1993:38) observed that means ends analysis can also be lead to optimal problem solving in novel situations. Perhaps because it uses information about the relation between the working forward and working backward terminals (these concepts shall be discussed in detail shortly),

thereby imposing "a far more powerful directionality on the search than other procedures".

The major features of means ends analysis can be identified as focus on eliminating a single large difference, the selection of operators by what differences they reduce, and the sub-gaoling of the pre-conditions of the operator (if they are not met in the current state). In other words, the major steps involved in means ends analysis are setting a high level goal, looking for a method that could reduce or eliminate the difference, setting a goal; the application of that method; and then recursively applying means-ends analysis to the attainment of this goal.

(ii) **Planning Strategy**

The planning strategy is a heuristic search method, which involves disregarding some aspects of a problem to make it simpler (Malim, 1994:158). Once the simpler problem has been solved, the complications are then re-introduced. For instance, when dealing with the Hobbits and orcs problem, a solver might disregard the viciousness of the orces in the first instance and concentrate upon getting all the creatures across on a boat which would only take two at a time. Only after a solution to this problem has been found would the more complicated one be tackled.

According to Newell and Simon (1972:428), this procedure acts as antidote to the limitations of means-ends analysis in seeing only one step a head. The planning strategy consists, among others, of the following steps:-

(i) Abstracting by omitting certain details of the original objects and operations.

(ii) Forming the corresponding problem in the abstract problem space.

(iii) Translating the plan back into the original problem space and executing it.

The advantages of the planning strategy over other methods are:-

(i) It is usually a simpler problem solving method especially because it has fewer steps.

(ii) It may reduce the problem difficulty.

(iii) It also enables the solver to replace the larger more difficult problem by smaller more manageable problems.

Planning strategy, like means-ends analysis, is also used in problem solving situations. For example, we often make analogies (i.e. using an earlier problem to compare with that being solved), and problem isomorphs (i.e. sets of problems with the same structures and solutions but with different details and contexts). Learning from the past experiences or plans can be a valuable source of experience in planing for a current problem. Such experiences could highlight the reasons that lead to successes and failures of problems that are similar to the one under consideration and hence avoid the shortcomings. Heppener and Frazier (1992:163), cautioned that extrapolating from past experiences may sometimes have negative effects. For example, a recent failure in an exam may be highly available to an individual, such that when asked to judge the probability of passing an up coming exam, he may judge the probability of failure as being higher than it actually is.

However, there are other more serious limitations of the planning heuristic. For example, according to Newell and Simon, (1972:432) a plan may turn out to be illusory that it may prove impossible to carry out. Also, the planning strategy, like other heuristic search methods, offers no guarantees that it will always work. Since the planning strategy is based on abstraction, one way to improve on its efficacy is to ensure good abstraction.

(i) **Backward Searching**.

The idea of backward search suggests that there is a working forward method. This is indeed so. In forward search one simply tries out some methods of attack and decides whether progress has been made. It works only with current state of the problem. In fact, working forward assumes its name from the current state, to select operators to be executed next. It does not, for example, involve evaluative information and hence it is not a good method. In real life situation, one could expect that only immature or novice problem solvers would often make use of this method because they lack enough training and experience to define the complications of the problem as well as the skills of exploring alternatives.

Backward search involves starting from the desired solution and then working backwards from there. The search then continues by asking what is the preview step that has been taken to arrive at the desired state. Then from that step, backward search continuously asking what previous steps "have been taken" prior to this one, and so on.

However, where a problem solver is confused about what the desired solution is, then this method might pose serious problems. Furthermore, many people (especially young persons) find it difficult to reverse information or rules, and hence may not be able to adequately identify the steps in a backward reversing manner.

Perhaps, it is because of these complications associated with backward search method as well as, the weaknesses of the planning strategy on the one hand, and the fact that means-ends analysis (in addition it's simplicity to comprehend and apply) can also lead to optimal problem solving, even in novel situations (Anderson, 1993), that it has been the method of choice in many problem solving programmes. Newell and Simon's General problem solver, for example, employs the means ends procedure as the basic strategy for solving problems. Also, Shure and Spivack's (1978) means-ends problem solving procedure for children, as the name implies, also adopted this method for their subjects (who were children of pre-school and Kindergarten age). All these suggest among others the suitability and relevance of the means-ends procedure for many problem-solving situations and to all categories of persons.

The major processes or activities subsumed under strategies for solving problems can be summarised as:-

(i) Identifying the Goal or End, as well as other sub-goals (if any).

(ii) Identifying the means and other sub-means to achieve these goals.

(iii) determining possible obstacles or difficulties in the achievement or choosing the best alternative or solution.

(iv) implementing or applying the prefered solution to solve the problem.

2.2.4 Theoretical Perspectives on Human Problem Solving

There are at least four identifiable perspectives or approaches to the study of human problem solving. Each of these approaches seems to emanate from a different school of thought. First, is the critical thinking approach which originates from discussions in formal logic and applied philosophy.

Second, the psychometric or individual differences approach, which centres mostly on the "g" factor in problem solving.

Third, is the content approach, which tends to be domain specific, and it emphases content or subject such as Mathematical, Scientific and Physics problem solving. Last, is the cognitive or process approach which seems to be concerned with the cognitive processes in problem solving.

Before the advent of behaviourism in the early twentieth century, logicism was the major contributor to the science or laws of thinking and reasoning. Piaget (1965) for example, stated that adults solve problems according to the principles of hypotheco-deductive logic. That is, people have general mental ability to logical conclusions about problems of life through reasoning or inferences to yield correct solutions.

The advances in behaviourism particularly in the middle of this century reduced the importance of logicism in explaining complex human behaviour

(Green, 1988:133; Scandura, 1977:1). This greatly affected the importance of formal rules of logic in the study of problem and high order rules in general. However, there seems to be a renewed interest in the critical thinking approach perhaps as a result of the "revolution" in philosophy in general, and in particular due to successes of the critical thinking movement in the early 80s.

Critical or effective thinking, according to Moore, et al., (1985), is made up of five distinctive phases, namely:-

(i) Recognising and defining problems

(ii) Gathering information

(iii) Forming tentative conclusions

(iv) Testing tentative conclusions

(v) Evaluation and decision making

They further noted that each of these phases is strongly affected by solvers "frame of reference", which refers to the organised body of knowledge, belief and experiences with which the problem solver interprets and understands new experiences. Consequently, training in effective thinking skills should emphasise, in addition to five skills, the social consequences of behaviour both at the individual and societal levels.

Problem solving from the point of view of the individual differences approach, amounts to identifying test measures that correlate with problem solving ability. Research effort in this area tends focus on searching for appropriate measures of memory, reasoning and other intellectual abilities.

The individual (or psychometric approach as it is sometimes referred to), is based on the assumption that complex human behaviour (including problem solving) has a genetic and or general intellectual base (Scandura, 1977:17). In order to determine the basic underlying factors involved in intellectual activities, numerous factor-analytic studies have been conducted. For example, Guildford, et al., (1960) cited in Radford and Buton (1978), in their factory analytic study of problem solving concluded that any account of intellectual abilities must deal with these three classes of variables, the activities or operations performed, the materials or content on which operations are performed and the product which is the result of operations.

Content approaches tend to focus on identifying specific competencies that are sufficient for solving particular classes of problem (Scandura, 1977:12). This approach is more common with subject matter or domain specific problem solving such as mathematical problem solving, scientific problem solving, artificial problem solving, to mention just a few. Artificial intelligence and computer simulation approaches are included in this category because they share the same concern with the subject matter specialist in determining the content and underlying competencies associated with problem solving.

Because, content approaches seems be to be more interested in the results of analysing classes of problem, they tend to be less concerned about the developmental competencies, biological factors and effective conditions of the problem solvers. However, more recent content oriented researches into problem solving have also examined the processes involved in constructing

problem representation as well as solution processes like problem solving strategies (e.g. comprehension of Arithmetic word problems; A comparism of successful and unsuccessful problem solvers" by Hegarty, et al., 1995).

Another distinct tradition within the content approach to problem solving focuses on developing the kinds of capabilities and processes necessary for solving particular classes of problems (commonly referred to as shut-cuts or heuristics). One of the classic works in this regard is that of Polya (1962), who developed four problem solving heuristics which have greatly influenced problem solving theory and research. The four phases of problem solving according to to Polya (1962) are:-

(1) Understanding the problem

(2) Devising a plan

(3) Implement Plan

(4) Looking back

These steps have been adopted not only in geometric problem solving (the primary concern of Polya), but by many researchers in the field of social problem solving, and particularly by clinical and counselling psychologists. For example, the interpersonal problem solving model developed by Dzrulla and Goldfried (1970) cited in chapter one of this work, is a product of Poyla's heuristics.

However, although heuristics are a quick and useful way of reducing the vast amount of available data to manageable size, the use of heuristic approach to problem solving has been criticised. For example, according to Scandura (1977:166), although Polya's work had provided a foundation on which many subsequent researches on problem solving had been based,

heuristics provide little more than general hints, and (they) leave much we need to know in order to solve specific problems. Furthermore, Heppener and Frazier, (1992:162) also observed that heuristics, in essence, are "a satisfying real rather than an optimizing approach", to the complex tasks involved in problem solving.

Finally, cognitive psychologists tend to be interested in uncovering the internal or intrinsic nature of the problem solving process. Thus, a major concern is on the general processes involved in solving problems, not just how to solve a particular problem. Specifically, problem solving research from this tradition have examine the general strategies for solving problems, such as methods of understanding and assessing problems, methods of information retrieval, memory and how it influences problem solving, solution procedures and evaluation of goal (Scandura, 1977:11; Mcguinnes, 1990).

In order to understand such underlaying processes, pschologists have employed different types of strategies. For example, they have had subjects verbalize their thoughts as they attempt to solve problems. These records are then analysed to see if useful rules or hypothesis can be formulated to explain how people solve problems. Some of the popular methods in this regards are self assessment questionnaires, pre and post experimental questioning about the strategies used to complete cognitive tasks and concurrent thinking aloud protocols from which components of self regulation can be observed (Mcguiness, 199:302). There are two sub-approaches within the cognitive processes approach. These are the learning theory and the information processing approaches.

The learning theory approach tends to focus on determining the variables that affect problem solutions, as well as, how problems solving skills are acquired (Anderson, 1993:35-41; Radford and Burton 1978:58). In one of the relatively early efforts in this regard for example, Duncan (1959) has identified many variables such as simple and sets, changes in relationships among the elements of a problem and the level of problem difficulty, aids to solution and certain characteristics of the subjects (for instance age, and reasoning ability) as some of the factors which may influence problem solving (cited in Radford and Burton, 1978:58).

In relation to how problem-solving skills are acquired, Kendler and Kendler (1962:120) depicted the traditional learning theory position on the issue when they stated that complex learning (including problem solving) can be accounted for by separate acquisition of stimulus-response bonds. In other words, complex behaviour such as problem solving can be regarded as comprising sets of chained stimulus-response associations and problem solutions as involving the association of response produced cues from one behaviour chain to an overt response belonging to another. In another more recent variant of this position, Anderson (1983, 1989) adopted the production rule as an analogous to the stimulus-respond bond to account for how the acquisition of complex skills (including problem solving) can be produced by the separate acquisition of these rules (cited in Anderson, 1993:35).

The learning theory approach has made explicit many factors related to problem solving behaviour. Of particular relevance to this study is the explication of how problem solving skills are acquired and improved upon. By

indicating that acquiring a skill is basically a function of the strength of its encoding and practice as a means of ensuring better and easier accessibility, it has provided a bridge to link problem solving and learning, which is of crucial importance to experimental studies such as this. On the other hand, the learning theory approach, in general, has neglected such factors as our emotions and affective conditions, as a whole, which as we have seen earlier on, can also affect problem solving.

The information processing approach to human problem solving views man as an organism with input and output devices as well as having an internal central processing unit which are important not only in processing information but in solving problems. Information processing approaches also share the belief that if learners (or solvers) are encouraged to externalize their thoughts processes, if they are exposed to better patterns of thinking through direct verbal explanation, discussion or modelling by expert thinkers , they will eventually internalise the new thought patterns and become better problem solvers (Guerra, 1993:56; Mcguiness 1990:304; Clark &Palm, 1990:332). This approach gained much of its prominence from the information processing revolution in the latter part of this century, and still remains perhaps the most popular approach in clinical and counselling psychological researches in problem solving.

With regards to social cognition, information processing theorists believe that the ability to understand the social world and to function effectively in it depends on certain skills. These are commonly refer to as social information processing skills (Guerra, 1993; Dodge & Frame, 1992). These skills are

similar to the steps of social problem solving identified by D'Zrulla and Goldfried, 1970. Since these skills are believed to be social cognitive in nature, more discussions are made on them in section on social cognitive skills later in this chapter.

The brief review in this section seems to suggest that although there are many theoretical perspectives on social problem solving, the ability to successfully solve problems have a strong cognitive base. However, the review has also shown that there are many disagreements about which skills are most crucial in promoting optimal social problem solving. Some of these factors are further discussed bellow.

2.2.6 Factors influencing social Problem Solving

Many factors seem to exert considerable influence on a person's ability to solve problems. Researchers have reported several of these factors some of which are reviewed bellow. One of the factors that seem to have a strong effect on social problem solving is the ability to make sound decisions. In fact, earlier literature on this issue seems to equate decision making with problem solving. For example Krumboltz and Thoresen (1976); Jannis and Mann (1975) have identified the following as the basic stages or steps of the decision-making process.

(i) Appraising the challenges (or problems).

(ii) Surveying alternatives.

(iii) Collecting information about the alternatives

(iv) Weighing alternatives.

(v) Commit term and effort

(vi) Deliberating about commitment.

(vii) Successively eliminate the least desirable until a tentative choice is made.

(viii) Adhering to choice.

Also, from those earlier literatures, decision-making and problem solving seem to share the same basic assumptions. That is, that an individual has several possible alternatives or courses of action among which to choose. In each of these alternatives, certain events can occur. These events have different values to the individual and different likelihood of their occurrences that can be estimated. If each possible event is multiplied by it's value to the person and its probability of happening, the person can determine the alternative, which is likely to have a greater sum of a value to him or her.

Even in more recent literature, this strong relationship between decision-making and problem solving seems to be maintained. For example Payne (1993) define decision making as the ability to traverse a problem space and select an optimal course of action, which is congruent to his unique situation. In general, theorists on problem solving seem to be more concerned with decision making as one of the major stages in problem solving particularly as it relates to selecting the best alternatives or solutions to problems. In this regard, theorists on decision-making have made several contributions.

According to Jannis and Mann (1975), for example, the difficulties and complications in estimating the quality of decisions vary between single

valued decisions and multiple valued decisions. In single valued decisions (i.e. those intended to achieve only one single objective such as making money or obtaining a large vote), it is simple to determine the quality of a decision. This is because in such situations we can simply calculate the amount of money produced, or the number of votes won. In multiple decision making, and other complex social decision making situations, it is difficult to obtain such a qualitative matrix. However, many attempts have been made to develop principles that would promote qualitative decision making in such difficult problem situations.

One of the earliest efforts in this regard, are the three criteria for good decision making proposed by Dilley (1967) (cited Jannis and Mann 1975). According to him, a good decision involves: -

(i) Choosing the alternatives whose expected outcomes has the highest product of expected probability and expected desirability.

(ii) Making decisions that are internally consistent with ones values motives and interests.

(iii) Accepting personal responsibility for decisions.

There are many such suggestions aimed at improving individual's decision-making skills. One of the most recent and highly relevant for personal, social and psychological problem situations are those suggested by Payne, (1993). These are: -

(i) The weighted additive (WADD) rule. Here, the decision-maker considers the values of each alternative on all the relevant attributes, and the relative importance or weights of the attributes to the decision-

maker. With the WADD rule, conflict among values is assumed to be confronted and resolved by explicitly considering the extent to which one is willing to trade off attribute values, or reflected by the relative importance or weights.

(ii) The equal weight (EQW) heuristic. In this heuristic, all the alternatives and all the attribute values for each alternative are examined. However, the EQW simplifies decision making by ignoring information about the relative importance or probability of each attribute. An overall value for each alternative is obtained by simply summarising the values for each attribute for that alternative.

(iii) The Satisfying (SAT) heuristic. Here, alternatives are considered one at a time in the order they occur on the set, then the value of each attribute of an alternative is compared to predefined cut off level. If any attribute value is below the cut off, then that alternative is rejected. If no alternative poses all the attribute of the cut off level, it is then relaxed and the process repeated until the alternative that reaches the cut off level is found.

(iv) The Lexicographic (LEX) heuristic. This procedure determines the most important attribute and then examines the values of all the alternatives on that attribute. The alternative with the best value on the most important attribute is selected. If two alternatives have tied values, the second most important attribute is considered, and so on, until the tie is broken.

(v) The elimination-by-aspects (EBA) heuristic. The first step in this heuristic is to determine the most important attribute both in terms of weight and importance. Then the cut off value of that attribute is retrieved, and all alternatives with values for that attribute below the cut off are eliminated. In other words, this strategy involves rejecting or eliminating alternatives that do not possess an aspect (the aspect) greater than or equal to the cut off level. The EBA process continues with the second most important attribute then third, and so on, until one alternative remains.

(vi) The majority of confirming dimensions (MCD) heuristics. This involves processing pairs of alternatives. The values of each of the two alternatives are compared on each attribute and the alternative with a majority of the inviting (better) attribute values is retained. The retained alternative is then compared with the next alternative among the set of alternatives. This process of pair-wise comparison is repeated until all alternatives are evaluated and the final winning alternative identified.

(vii) The frequency of good and bad features (FRQ) heuristic. With this strategy, the focus is on evaluating or choosing alternatives based simply upon counts of good and bad features the alternative possess. The decision-maker would first of all establish cut-offs for specifying good and bad features. He/she then counts the number of such features for each alternative. Obviously, the alternative with the highest

of the good feature and the least bad feature would be maintained as the chosen alternative.

Problem solving seems also to be influenced by the task environment itself. In general, the problem space gives us many clues into the structure, as well as, the type of information that may be relevant to solving it. Thus, the less information that can be extracted from the task environment the more the difficulty in solving such problems. This is one reason why personal social problem - solving tends to be very complex because the clues and bits of information that we need to solve them are usually not easy to determine.

Mental sets have also been found to influence problem solving. According to Malim (1994:161), mental sets may take any of the following forms: -

(i) **Set of operation**: This refers to a pre-conceived assumption that the problem will be solved by means of a particular operation or set of operations. This often blocks an individual's mind in such a way that he/she will not shift to an alternative pattern.

(ii) **Set of Function (or Functional Fixedness)**: refers to an assumption that the elements of a problem have a fixed function. Sheere (1963) in an experiment on the ring and peg problem, for example, shows that although none of his subjects were forbidden from taking down the string in the ring, none of them did so. This was held as pointing to the fact that subjects

have already developed a fix assumption about function (cited in Malim, 1994:162).

(iii) **Set of rule**: This refers to a pre-conceived notion that there are certain rules within the constraint of which the problem will have to be solved. In the popular draw a straight line across the nine dots problem , for instance , Malim (1994:162) also reports that individuals often make an implicit assumption that the straight line need to be within the square.

In more practical terms, the idea of mental sets tends to suggest the role of cognitive factors in relation to problem solving. Recent studies have established some connection between content of thought and social behaviour. One of the most commonly reported factors in this regard is a schema. Fisk and Taylor (1984) defines schemata as "a cognitive structure that represents organised knowledge about a concept which guides how people select, remember and make inferences about information in their environment (cited in Heppener & Frazier, 1992:158). According to them, Schemeta acquires these characteristics through two main processes in cognitive development namely assimilation and accommodation. For example, the young infant's relatively simple scheme of sucking and grasping is transformed into an integrated mental structure, the highest of which is known as the formal operational thinking.

Although schemata can help people make sense out of the vast amount of information available to them, schemata guided information processing can also lead to various errors and biases. For example, research

evidence suggests that people tend to seek information that is consistent with their prior belief known as confirmatory hypothesis testing (Heppener and Frazier, 1992:158). Furthermore, people tend to maintain these beliefs well beyond what is justifiable even when the information used to establish them have been discredited. In the area of social information processing, such beliefs have also been identified.

For example, a belief that a particular behaviour will lead to a desired outcome (or militate against it) can serve to motivate (or inhibit, as the case may be), a person toward that behaviour. Moreover, this also implies (particularly if the belief is strong) that it may also interfere with consideration of other response options. In the domain of aggressive behaviour, for example, it has been established that aggressive adolescents (who continue to believe that aggression increases status and self-esteem) are more likely to behave aggressively. It also leads to lack of consideration of other responses and other consequences no matter how well trained in these skills and individual may be (Slabby & Guerra, 1988).

Similarly, researchers have also identified attitudinal orientations as factors that can greatly affect ability to achieve successful problem solving. Rotter (1978), in his discussion on the generalised expectancies for problem solving clearly indicated that the most important attitudinal orientation is the expectancy that one can affect in part what happens to oneself. Another important expectancy in this regard is the orientation towards constantly seeking alternatives to problem solution. Heppener and Peterson (1982), on their part, identified several positive and negative self-perception, feeling and

personal behaviour control orientations typically associated with problem solving. These were then grouped into three major categories namely, problem solving confidence, approach avoidance and personal control.

Finally, problem solving may also be influenced by socio-cultural variables. According to Bingham (1968) for instance, an individual's value system may define the proportion of a problem, govern his/her actions in dealing with it, or even prevent him from recognising a problem. On his part, Egan (1986) noted that cultural values and norms are the largest and most controlling of the systems because they provide and impose "blueprints on behaviour" blueprints which might be enhancing or limiting. Neisser, et al (1996), stated those socio-cultural variables especially with regards to how people live, what they value and what they to have a significant effect on the intellectual skills developed by individuals.

Although these have not been fully studied, religious beliefs and affiliation may have some considerable influence. Meador, et al., (1992), opined that religious affiliation often reflects a discrete set of beliefs on which a person's view of the world is based. They stated further that attitudes and patterns of behaviours both interpersonal and intra-personal often arise from the particular belief system prescribed by one's religious affiliation. Also, according to Idler (1987), religious involvement could affect internal cognitive processes as well as provide a context for interpretation of behaviour that allow individuals to make sense of and cope with their worldly experiences.

The best way to determine how religion affiliation and involvement affect social behaviour, according to Levin and Schiller (1987), is to examine

particular beliefs and practices. For the area to be studied, one of the religious beliefs that could possibly have an operative or controlling relevance for problem solving is the belief in predestination. Predestination means that all things and all events are preordained by God from all eternity (Rauf, 1956). Although the belief in predestination per se, does not have direct limiting effect, it could have a paralysing consequence on conduct when an individual tries to infer what God has predestined without waiting for the result (John Stuat Mill, cited in Gould, 1990). Result of the pilot study seems to suggest that secondary students in this area tend to make such.

For example, statements such as "that is the will of Allah, "that is what God has destined", what God has destined there is nothing (or no one) to change it", have appeared in some students' responses to the hypothetical problems of this research instrument.

Another socio-cultural variable, which could affect social problem solving, is belief in superstitions and taboos. Superstitions are beliefs in omens, and cultural signs, taboos founded on custom or social convention particularly in form of certain persons, things and performance of certain actions. Cole and Scribe (1974) have observed that such beliefs, are common among many African societies. Also, based on the result of the pilot study conducted for this research, many students seem not only to be aware of many superstitious beliefs, but also have some regards for them. Some students for example, responded strongly agreed to the question "do you think superstitious beliefs in your community should be adhere to?" Also,

when asked to give examples of the most familiar and most commonly observed superstitious beliefs? Many students indicated the following:

(i) If a person sweeps, (his room, compound etc) during the night, he/she sweeps away his/her luck;

(ii) If a person should bite his/her tongue as he eats or speaks, somebody, somewhere is maligning him;

(iii) One who shaves his head on Saturdays will perpetually be or remain in debts.

Although, the exact relationship between these beliefs and social problem solving have not been fully studied, it seems reasonable to believe that persons who attach any significance to such irrational beliefs are likely to be inhibited in problem solving situations where such "prohibited" activities are involved.

Another socio-cultural variable that might influence optimal problem solving, are adages, proverbs and idioms. In African societies Kirk-Greene (1966), opines that they occupy an important position and often serve as "striking example of argument by analogy, regulate attitude of one member of the family to another, and in short, are accomplishments of "sophisticated learning". Ipaye (1987) also stated that proverbs, adages, idioms and wise sayings among many traditional Nigerian societies, are often used to guide, counsel, admonish, and provoke thought. Many other authors particularly with regards to Hausa proverbs (Yunusa, 1985; Ibrahim, 1982; Tudun-wada, 1982) have also made similar comments.

While it may be true that some proverbs may contain these admonishing and thought provoking messages, others dot not seem to have such qualities. In fact, based on a critical examination of some proverbs (particularly Hausa proverbs) it might as well be argued that some of them are inimical to optimal problem solving. Some examples of such proverbs are:

(i) "A bar kaza cikin gashinta" (i.e. leave the hen in it's feathers).

(ii) "Da mugun rawa gwamma kin tashi (meaning, rather than dance poorly, it is better not to stand up - not to make any effort at all).

(iii) Babu wata dabara ga mai shiga rijiya" (that is, there is nothing else for the person who enters the well).

(iv) Komi ta Banjama (fanjama) banjam (meaning, what will happen, let it happen – I do not give a damn to whatever consequences).

Source of proverbs and their meaning (Kirk-Greene, 1966).

Again, although, the relationship between such common sayings and optimal social problem solving behaviour has not been fully studied, it is plausible to believe that individuals who adopt the "attitudes" or "counsels" in the first two proverbs are less likely to examine the full meaning and ramifications of their problems. On the other hand, the third and fourth proverbs could greatly reduce the ability to consider the range of alternatives to problems. Result of the pilot study however seems to suggest that many students consider all Hausa proverbs as thought provoking and containing "words of advice and wisdom".

The review in this sub-section centred on factors influencing social problem solving. From the review, such factors include the ability to make sound decisions, mental sets or attitude, nature of the problem itself, and the possible influences of the socio-cultural environment. To achieve optimal levels in problem solving, it is necessary to control these factors.

2.3 Social Cognitive Skills

2.3.1 Definitions and Theoretical Perspectives on Social Cognition

One of the earliest definitions of social cognition identifies it as "the study of how children of different ages construct a relationship between themselves and social object of knowledge (Barker & Newson, 1979: 20). This process of constructing knowledge about the social world is intrinsically social in nature, rather than a cognitive structure applied to the social content (Selman, 1980:14). Its study, according to Butterworth (1983:14), consist both in the investigation of the social content of children's mind and theories of the acquisition of objective knowledge itself.

This tendency to define social cognition as an intrinsically social process is still retained in the more recent definitions of the term. For example, Vasta at el., (1992) defined it as the study of "children's knowledge about people and social processes, as well as, the influence of social processes on children's cognitive development. Cosmides and Tooby (1996:166), in their domain specific theory of social cognition identified it as " a large collection of functionally specialised interrelated modules that collectively guide thought and behaviour with respect to the evolutionary

recurrent and persistent problems posed by ecological and social environment. Guerra (1993) described it as "how individuals think about themselves, others and social relations".

On the whole, these definitions seem to suggest that social cognition has certain features that makes it distinct from non-social or physical cognition. These features have been identified by Vasta, et al., (1992) as:

1. People have motives and intentions that may lead them to choose a particular behaviour or another sometimes in ways that are difficult to predict.
2. People have feelings and emotions that influence their behaviours which often at times are important components of these behaviours
3. People, unlike inanimate things, interact that is, when acted upon, people act back. Perhaps, it is because of these distinctive characteristics involved in social cognition that Gardner (1983) in his multiple theory of intelligence proposed the notion of personal intelligence (i.e. the ability to understand self, others and the social world), as a distinct type of intellectual ability.

However, beyond these general characteristics, there are many theoretical differences about the levels and ways of to explain how people acquire and construct the social object of knowledge and interpersonal relationships. The structuralists (i.e. Piagetian and information processing theorists), for example, maintain that human beings have innate capacities which influence the kind of interactive experiences that they will have and which determine the reciprocal effects of these experiences upon self and

others, and future experiences. In effect the individual structures his/her own social cognitive development, while at the same time being shaped by previously acquired structures.

For the behaviourists, knowledge about the social object of life is acquired mainly through social learning processes such as observation, imitation, modelling, reinforcement, punishment, to mention but just a few. Thus, the family, the social class, the institution and the culture into which one is born determine to a greater extent, how and what knowledge of self and others that he/she acquires (or in the words of Vygosky) "the tools or skills for intellectual adoption". For the Psychoanalyst, the interpersonal interactions built up, modified and sustained from infancy onward (which are kept at the unconscious level), provide the core of the experiences that shape knowledge about self and interpersonal relationships. Because these theoretical differences are also reflected in many of the social cognitive competencies or skills reviewed below, further discussions on theoretical differences are also included in the discussions in that sub-section.

2.3.2 Social Cognitive Competencies or Skills

Theorists on social cognition have identified several competencies or abilities considered necessary in promoting social competencies. These competencies or abilities however tend to reflect the theoretical differences on social cognition which were briefly highlighted upon in the discussion above. For example, with regards to moral development, the structural developmentalist tends to be more interested in the development of moral

reasoning (i.e., how individuals think about what they and others do on moral issues and principles). The social learning theorists seem to focus on moral conduct (i.e. which social-environmental forces influence behaviour in moral situations). For the ethologists, the main concern is on identifying patterns of social behaviour in other species that may be relevant to patterns on human moral development. Such concerns have led them to be more concerned with the development of altruism and aggression in social situations.

These types of theoretical differences seem not only to shape the focus and design of research in the domain, but also the importance attached to them. These not withstanding, the social cognitive competencies or abilities that tend to have the widest research and clinical significance according to many authors such as (NAMHC, 1996; Guerra, 1993; Kadzin 1989; Tolan & Loebar, 1993; Vasta, et al., 1992; Doge, et al., 1990; Butterworth, 1983; Selman, 1980) to mention just a few, include: abilities for moral and social reasoning, social perspective taking, self understanding and social information processing. These are further discussed below.

Moral Reasoning

Perhaps, the most documented and well researched of all the social cognitive competencies is the ability for moral reasoning and judgement. Two general approaches on moral reasoning can be identified. The first approach can be termed as that, which focuses on typology of moral judgement while the second seem to emphasise stages or sequences in the development of moral reasoning. With regard to types of moral reasoning, researchers have identified several classifications. Among the earliest in this regard are the five

types of moral personality or character identified by Havighurst and Taba (1949). These are:

1. The social deviant (who are openly hostile to social norms).
2. The submissive (who regularly obey authority and social order).
3. The adaptive (who easily adapts to social situations).
4. The self-directed (who operates under self-recognised moral principles).
5. The unadjusted (who seems to be frustrated and discontented with social rules).

Macord and Macord (1960), identified five levels of conscience as follows: the unconscious inhibitory level (which seems to be thwarted by repressed feelings), the conscious inhibitory level (characterised by conscious moral of conflicts), the retrospective inhibitory level where (guilt seems to predominate moral judgements). The ideal prescriptive level where there is self-conscious adherence to idealised perceptions of morality is another. Wright (1968) also identified four dimensions of conscience. These are:

1. The non-moral man, who seems to care less about any notions of conscience or morality;
2. The autonomous man, who has the ability to reach independent conclusions.
3. The conscientious man, who displays great ability for moral flexibility and willingness to discuss reasonably in interpersonal interactions.
4. The conforming type who shows great sense of obligation to moral decision.

However, research on typology of moral judgement seems to have declined in significance with the gradual development of research on stages of moral judgement particularly that of Kohlberg (1969). This is not to say that he was the first to identify or look at moral judgement in terms of stages or levels. Kohlberg (1978) himself credited the pragmatist, John Dewey as the first individual to look at moral judgement in terms of three sequences. According to Dewey these sequence, are:

1. The pre-moral (where moral judgement seems to be motivated by biological and social impulses).
2. The conventional stage, (where moral judgement of individuals, are based on the standard of the group with little critical reflection).
3. The autonomous level (where the individuals' own thinking and judgement of what is good not necessarily based on standards or norms of his group typically guide moral behaviour (Kohlberg, 1978:36),

However, it was Piaget (1965) who is generally credited with actually defining these three stages in terms of longitudinal or developmental research data. The pre-moral stage Piaget found was commonly found among children ages 4 and below, where there is no sense of obligation to rules. The conventional or heterogamous stage was common with children between ages 4-8 and moral judgement take the form of literal, obedience to rules and equation of obligations with submission to power and punishment. The autonomous stage, which according to Piaget typically starts from 8-12 involve moral judgement based on consideration or reciprocity and exchange.

Kohlberg (1969) has extended, modified and refined Piaget's stages of moral development into six by further sub-dividing each of the three major levels into two sub stages (Guerra, 1993:48; Kohlberg, 1978:50-51; Bar-Tal 1976:16; Graham 1974:227). The concept of stages according to Kohlberg (1978:B: 37) as used by both Piaget and himself implies three main characteristics.

i. stages are structured wholes or organised systems of thought. In other words, an individual at level two of moral judgement predominantly or consistently reasons at that level;

ii. they are invariant sequence – that is they are the same for all individuals (except in extreme trauma) and movement is always forward; and

iii. they are hierarchical integration – that is they are qualitative transformations in reasoning reflecting a movement towards more mature reasoning based on universal principles of justice. These stages can further be discussed as follows.

The Pre-moral or Pre-conventional thinking

Represents the first level. Children at this level are responsive to cultural rules, and they are capable of evaluating labels such as good and bad, right and wrong, but view them in terms of pleasant or unpleasant consequences of action, or in terms of the physical power of those who impose the rules. That is, morality is defined in terms of external consequences to self. The first sub-stage is known as the punishment-and-obedience orientation. Individuals at this stage focus and seek to avoid

punishment. There is also an egocentric regard to superior power or prestige. The second sub-stage is the instrumental-relativist orientation. Right action consists of that which instrumentally satisfied one's own needs and occasionally the needs of others. Reciprocity, for example, takes the form of you scratch my back and I'll scratch yours. However, at both stages, actions are judged by their consequences rather than by the actor's intent. In general, these stages typify the reasoning of young children, although they may persist into adolescence and even adulthood for some others.

Level II is known as conventional role conformity, and it represents the moral reasoning or thinking of majority of people. At this level, morality is determined by considerations of others opinions and maintenance of the social order. Individuals at this level tend also to be oriented towards actively maintaining the expectations of their family, group or nation, etc. as a value in it's own right and with justifying these expectations or social norms. The first sub-stage under this level is known as the interpersonal concordance or good-boy-nice girl orientation. This is because good behaviour depends largely on whether others approve. It is also oriented towards pleasing and helping others. Stage 4 reasoning on the other hand, reflects a law and order orientation. That is, there is an orientation towards doing one's duty, showing respect for authority and maintaining the social order.

Kohlberg believed that individuals must attain Piaget's concrete operational stage before they can reason at the conventional level. Thus, this form of reasoning tends to emerge mostly during middle childhood and early adolescence.

Level 3 (known as autonomous or principled reasoning), represents post conventional morality because individuals at this level evaluate actions in terms of moral principles that have validity independent of the person(s) or society holding them. Stage 5 (i.e. the first sub-stage under this level) is known as the social contract, legalistic orientation. Moral reasoning shifts from law and order orientation typical of stage 4, to a social contract orientation, whereby individual rights supersede authority, and actions are evaluated in terms of the greatest good for the greatest number. Stage 6 reasoning invokes a consideration of universal ethical principles, whereby decisions are made on the basis of what would be fair for a person regardless of what position he or she is in. Kohlberg (1986) however, has removed stage six reasoning, because, according to him, it tends more theoretical than practical.

The highest stage of moral reasoning that most adolescents reach, according to Kohlberg (1969,1978), tend to indicate that females level off at stage 3. This gender differences according to Gilligan (1977) tend to indicate that females are simply less likely than males to invoke a morality of right and justice (in Guerra, 1993:51). On the contrary, she maintains, women's moral outlook involves a concern with maintaining relationships and sensitivity to not hurting others. Based on these differences, Gilligan (1977) offered a formative model of female moral development. In her model, women are said to evolve from a position of selfishness, to one of giving undue consideration to others, and finally to a position of involving an integration of both needs cited in (Guerra, 1993:51, Rothbart, Hanley & Albert, 1986:47).

Gilligan's theory has, however, also been criticised. Broughton (1978) for example noted that female subjects are often fluent in male moral language and that males also have the capacity for care considerations (cited in Rothbart, Hanley & Albert, 1986:647). The authors also reported a meta-analysis conducted by Walker (1984) of 108 studies using Kohlberg's measures, but which found very few sex differences in moral development.

Another area where Kolhbergs theory has received some research attention has to do with the relationship between moral judgement (or reasoning) and moral action (or behaviour). There seem to be some evidence (e.g, Kolhberg 1986, Vasta, et, al., 1993), that moral judgement is a necessary though not sufficient condition for good moral action. That is, although an individual may attain a very high level of moral development, it does not follow that he may necessarily behave or act according to the dictates of that stage. Kohlberg (1978: 39) for example, reported that up to 15 percent of students who have attained the principled orientation had cheated. This implies that factors additional to moral judgement are necessary for principled moral judgement to be translated into socially desirable behaviours. That is, although moral reasoning is important in solving real life personal social and interpersonal problems, other skills are needed.

Social Perspective Taking

The central focus of social perspective (or role) taking is to determine the emergence of the ability to take the perspective of another person and to co-ordinate it with one's own perspective or points of view. This is considered

crucial because how individuals think about other people particularly their peers, friends, family members, and older adults determine how they behave towards them. Here too, there are theoretical differences. For example, the social learning theorists believe that peers and other persons have three important influences on social behaviour:

i. the punishments and reinforcements we receive from other people tend to increase or decrease the likelihood of such behaviour occurring;

ii. peers and other persons in our social world often serve as models whose behaviours are subsequently copied or imitated; and

iii. peers and other persons also tend to serve as strong sources for an individuals self-efficacy judgements.

However, the structural-developmentalists particularly the work of Selman (1980) seems to have the greatest dominance in this regard.

Selman (1980:35-40) proposed five invariant sequence or stages in social perspective taking, the first two stages (namely undifferentiated and egocentric perspectives (ages 3-6 and 5-9 respectively), represent pre-conventional perspective taking and they correspond to Piaget's sensory motor and pre-operational stages, or Kohlberg's pre-moral level. Children at the first stage mainly display egocentric perspective of self, and tend to be unable to differentiate the perspective of others. In other words, children at this stage seem not to be capable of clearly differentiating between the physical and psychological characteristics of persons and relations. At stage

two, although children can differentiate between the physical and psychological characteristics of persons (e.g. a person is happy if he is laughing), they are still not capable of differentiating the thought, opinion and feeling states within individuals at the same time.

The third stage is known as reciprocal perspective taking (ages 7-12). It marks the beginning of the ability to put one's own point of view a side, and then take the perspective or role of another person (i.e. second person perspective). The child is thus aware that other people may have quite different feelings and thoughts. In addition individuals at this stage, tend to be aware that one can experience two opposing emotions (such as pleasure and displeasure) toward the same person or thing. However, role taking is still primary self-reflective. That is, individual at this level are not capable of considering multiple relations at the same time.

The fourth stage of Selman's approach is known as mutual perspective taking and it is believed to occur at about age 10 to 15. Individuals at this stage seem capable of taking a third-person perspective. That is they are capable of stepping outside of both they're own and other people's perspective, and assume the perspective of a neutral third party observer. This ability allows them to step outside of a social interaction and the same time considers the perspective of both self and others. In short, they are now capable of seeing themselves both as actors and objects. It is indeed the beginning of real perspective taking.

The fifth and final stage, which is known as societal symbolic perspective taking and it is believed to commence at about age 12 through adulthood.

At this stage, the individual moves to a more abstract and in-depth level. There is also the ability to co-ordinate all possible third-person perspectives on an issue. Role taking moves from a process of co-ordinating perspectives within a social interaction to co-ordinating the perspective of members of a larger social system. These developing cognitive abilities or skills to step outside of a relationship, evaluate it and co-ordinate it within a social group have been found to have significant implications for both social competence and problem behaviour.

The Development of Self Understanding

The development of self-knowledge, understanding or awareness and other components of the self-system as a whole have also attracted some considerable research attention. The main concerns seem to be on how individuals understand and organise their self-understanding in relation to other cognitive abilities and social behaviour. Like with other social cognitive competencies, there are theoretical differences in this regard. For example the information processing theorists, seem to be more the concerned with how the self-schemes or "internal portraits of ourselves" serve as organisers of self related information. The social learning theorists, particularly Albert Bandura, seem to be more interested in self evaluation (and other related concepts such as self-efficacy and personal agency), because these are strongly believed to affect overall social competencies. However, for this study, the structural development framework (particularly that of Selman, 1980), seems to have more direct relevance.

According to Selman (1980), there are five invariant stages in the concept of individuals.

In the first stage, individuals are perceived of merely as physical entities. In stages 2, individuals are seen as intentional subjects, which means that thoughts are now accepted as underlying actions, while motives are also seen as important in understanding behaviour. (Although they seem to be inferred at face value only, for example what a person says is what he means). Stage 3 is known as introspective selves, because children (at this stage, tend to be understanding that people have inner and outer selves, which, may or may not identically correspond to inner subjective reality. At stage 4, individuals are conceptualised as stable personalities. That is individual are seen as having stable personality trait. They are also seen as having mixed thoughts, feelings and motives toward the same object at the same time. The idea of individuals having a "mind" seems also to be typical of this stage. Thus there is the capacity for objective self-reflection. At the fifth and final stage, individuals are conceived of as complex self-systems. Among such complex systems is the idea of the unconscious which is used to explain that persons are not always aware of their behaviour that even introspection may not yield the psychological causes which best explain behaviour, neither can external causes explain all the self's behaviour either.

These conceptions of "other selves" give some insights as to the possible patterns of the development of self-understanding. For example according to Guaria (1993:50), one of the most frequently replicated finding is

the shift from the concrete and physcalistic self-concepts of early childhood to more abstract, subjective and psychological self-conception that emerge during adolescence.

Also, adolescents who have not fully develop their skills in self-understanding on the other hand, are more likely, to avoid the task of recording their conflicting motives, standards, and behaviours, and hence actively refrain from self-reflection.

On the other hand, individuals who lag behind in these stages or those with limited self-knowledge tend to experience difficulty in differentiating their own identity from the opinions of others.

Although the present review seems to have focussed mainly on the development of self-understanding or awareness, this does not mean that other components of the self-systems are not important. Albert Bandura's (1989) work on self-efficacy, personal agency; learned helplessness; self control, have all received attention in treatment and clinical applications particularly the problem management approach to helping proposed by Egan (1986).

Social Information Processing Skills

The central concern of social information processing approaches in the study of social cognition is on the mental processes and skills related to the acquisition, storage, and retrieval of social information particularly in relation to solving interpersonal problems. According to Guerra (1993), social information processing models have drawn much of their influence from earlier works in the domain of social intelligence and research on

interpersonal problem solving. They conceptualise social competence as dependent on a set of separate yet interrelated skills in processing social information. One of the first theoretical models in this area was D'Zurilla and Goldfried's (1971) four steps process of interpersonal cognitive problem solving. According to this model, an individual needs the following four skills in order to achieve adequate social competence. These are ability to;

1. List all the details of a problem as concretely as possible.
2. Brainstorm (i.e. generate) as many solutions as possible (to the problem) without at first criticising any of them.
3. Choose one or more of the solutions and think about the obstacles of its (or their) implementations.
4. Think of ways to put the solutions into operation and then checking to be sure of if the solutions are actually being carried out.

An individual who is deficient in these cognitive skills, according to D'Zurilla and Goldfried (1971) is believed to be at risk for a range of social and psychological problems. However, since D'Zurilla and Goldfried (1971) were working on adult social and psychological problems or functioning, there was the need to relate these skills to children and adolescents' level of functioning. Spivack and Shure (1978) in this regard started one of the pioneer works. They have modified and adapted these problems solving skills to meet the developmental level of children. In their model, problem solving tends to emphasise means-ends thinking.

Although, Shure and Spivack (1978) and their colleagues have reported increases in alternative solution, thinking and corresponding decreases in behaviour problems, others such as Elardo and Cooper (1974) have failed to replicate these findings. Consequently, this led other researchers to articulate more elaborate theoretical models.

For example, Dodge (1986) has developed a five step sequential model of social information processing. These steps or competencies are:

i. the ability to encode social cues;

ii. the ability to interpret those cues;

iii. the ability to generate all possible solutions;

iv. the ability to decide on optimal response (or solution); and

v. the ability enact that optimal response into action.

A significant number of research literature exist linking these competencies in there skills with how successful an individual will be in processing real life social problems in particular and social competence in general (Dodge, et al, 1990; Guerra & Slabby, 1990; Dodge, 1986). These competencies seem to be essentially the same with the problem solving skills, which have been discussed above. The main difference being the tendency in the present case to emphasise the intrinsically social nature of these skills both in terms of how they are acquired and how they are employed in processing or solving social problems.

From the review of literature in this section as a whole, it is apparent that there are theoretical differences about what constitute social cognitive,

skills. In general, however, the following can be regarded as the major of social cognitive skills.

(i) **Social or Moral Reasoning skills:-**

These mainly include the six developmental competencies in moral judgement as identified and elaborated upon by Kohlberg (1969).

(ii) **Social Perspective Taking Skills:-**

These are developmental competencies or abilities in self and interpersonal understanding especially the five stages in social perspective taking identified and discussed by Selman (1980).

(iii) **Social Information Processing Skills:-**

These refer to the basic information processing skills which essentially include the basic problem solving skills as identified by D'Zurilla and Goldfried, and elaborated upon by many subsequent researchers.

(iv) **Self Control Skills:-**

These refer to as an individual's ability to control his affective and internal cognitive processes.

2.4 Assessment of Social-Cognitive Skills

Since assessment is an important part of any psychological research, researchers in the area of social cognition have made many and varied attempts at providing valid and reliable method of assessing the major concepts and constructs involved in the domain. These are however

theoretical differences particularly with regard to the goal and method of assessment. In this section, an attempt is made to briefly review strategies, which have frequently featured in psychological research in this area. For most structural-developmentalists the goal of assessment, tends to be identifying individuals who are functioning up to the developmental stage that characterises their chronological age group. The main reason for this is that, they (i.e. structural developmentalist) seem to believe those social cognitive skills or abilities are significantly correlated with age. According to Selman (1980) for instance, there is a correlation of up to 86% between social perspective taking and an individual's age. Pre-treatment assessment from this theoretical perspective, centres on identifying areas of "developmental lags" and thereafter organising training or treatment programmes that will "move" the individual(s) to the appropriate stage.

However, there seem to be some differences of opinion among them about which method of assessment is most appropriate for analysis. Those who emphasise functional analyses, that is, analysing how individuals employ social-cognitive abilities "in the act" or in the real life situations, (such as Jacquette, 1980), have mainly used the naturalistic observation method. While those who are concerned with formal analyses (that is, describing the characteristic, on-togeney and components of social-cognitive skills) such as Selman (1980) and Kolhberg (1978) tended to employ the moral and reflective interview methods (often involving hypothetical moral dilemma).

The major rationale for adopting moral dilemmas (against real life moral decisions), according to Kohlberg (1978), is because real decisions were hard to study and are not comparable from subject to subject. For social perspective taking Selman (1980) adds another justification: "Moral dilemmas are especially well suited to asking subjects to weigh various points of views and to follow up on their responses" (p.36). Furthermore, he continues, "such dilemas encourage each interviewee to spontaneously elaborate on the interviewee's theory of human relations, his or her beliefs about individuals, motives and feelings, and his or her strategies for resolving conflicts" (p.36).

However, those who are in support of functional analyses (such as Jacquette, 1980), have questioned the power of the moral or reflective interviews as being "unnatural" content and context. According to him, this makes them only marginally relevant for analysing conditions under which people normally utilise or develop their cognitive abilities. But on the contrary he argues, the naturalist observation method permits a spontaneous assessment of problems encountered by the individuals in their entirety, as well as the strategies he actually employs in those situations.

The method of naturalistic observation has also been attacked. The first problem in this regard according to Selman (1980), is how to decide which unit of expression should be assigned to which category among the numerous utterances and expression individuals make in the natural world (even for one day). Secondly, it is also difficult (with naturalistic observation data) to ascertain whether a statement even represents what it seems to (for

instance, does the natural unprobed responses represent a social concept, which does not necessarily imply action, or a social judgement which often does).

Procedures for Assigning and Computation of Scores

Although, the moral or reflective interview and the naturalistic observation method seem easy to comprehend and administer, the procedures for assigning scores and computation of marks are very complex and often requiring special training for observers and scorers (Fenton, 1978). One of the first steps, with regards to scoring and computation of marks is identifying the basic unit of analysis referred to as issue concept. An issue/domain refers to any codable response about an issue in an interview (Selman, 1980). For the developmental stages in moral reasoning, an issue for the fourth stage is "social order" or "law and order" orientation and for social perspective taking, an issue in the domain of friendship is "conflict resolution". Issue-concepts on the other hand, refer to any response or concepts related to these issues, which the interviewee gives to the questions or probes during the interview, which are often awarded marks or scores.

There seem to be two basic rules or procedures for scoring issue-concepts. In the first procedure, each response is scored either as a pure stage score (e.g. stage 2) or a major (minor) stage (e.g. stage 2(i). For each issue or domain, a quantitative score can be computed by averaging all issue scores, to obtain the total stage score for the interviewee being assessed. This total issue-concept scores refers to an interviewees understanding of the "how and why" (i.e. how he relates and co-ordinates human points of view in

the social world), or his stage of moral development, as the case may be. Computing this total score using the major (minor) procedure is however more complicated. For example, in the individual domain of social perspective taking, an issue (scores of 2 (3) for subjectivity), 3 (for self-awareness), 3(2) (for personality) and 2(3) for personality change, would be averaged into a quantitative score of 2.58 (Selman, 1980). This is because when averaging major (minor) scores a major score receives a two-thirds weight and minor scores a one-third weight.

The second and the simpler procedure focus on identifying the highest level of conception. That is, looking across the issue-concepts in an individual response to identify the highest score he/she has attained. UNICEF, in its "situation analysis on children in Nigeria", used this procedure to assess moral behaviour and reasoning of children in "difficult" situations. Although this second procedure generally gives a higher score than the averaging procedure, Selman (1980) obtained a correlation co-efficient of .86 for the two procedures.

Reliability and Validity of the Various Scoring and Computation Procedures

Selman (1980) reports several reliability measures for these procedures. For example, interrater correlation for IMS score between two expert scorers was .96, while a correlation co-efficient of .92 who was obtained between one expert scorer and three individuals trained only through reading the manuals. A correlation co-efficient of .94 was obtained for an expert and three workshops trained individuals. Test retest reliabilities

ranging from .51 to .92 were also obtained. Finally, the same author also reports several studies indicating very high validity for the assessment measures.

Generally, scoring procedure for the naturalistic observation method follows similar patterns with those described for the interview method with few modifications. For example, the total Naturalistic Interpersonal Understanding (NIU) – analogous to IMS – for each individual now becomes the average scoreable speech acts assigned to interpersonal issues for all the naturalistic deservation contexts. Jacquette (1980) reports high inter-rater reliabilities for this procedure as well. For example, group and individual (NIU a scores for an expert and a trained observer) yielded a person correlation co-efficient of .99, .89, .90, .73, .91, .97, and .93 for the seven students (a correlation of .93 was obtained for the group NIU Scores (Jacquette, 1980).

Another technique for assessing moral reasoning is the Defining Issues Test (DIT) as reported by Okatahi (1984, 1986). The DIT was designed to render Kohlberg's (1971) stages of moral development into an objective framework. It consists of six issues on moral dilemmas. Tests are required to rate, (on a five-point Linkert type scale), the relative importance of 12 statements about the dilemmas. These statements exemplify distinctive characteristics of Kohlberg's (1971) stages of moral development. The DIT gives a "P-Score" that is, the relative importance given to stages 5 and 6

With regards to social information processing researchers have employed different procedures. Such procedures tend to emphasise participant's performances on given problems rather than on development lags. For

children, one of the earliest procedures for assessing problem solving skills is the pre-school interpersonal problem solving (PIPS) developed by Shure and Spivack (1974). The test measures a child's ability to conceptualise different relevant solutions to the following problems.

(i) One child wants a toy another child has

(ii) A child wants to avert mother's anger having broken something of value to her.

The tester shows the child three pictures (two of the pictures are children and one of a toy) and then says 'Here's Johnny and here's Jim'. Johnny has been playing with this truck for along time. Now Jim wants a chance to play with it. The child is then asked. What can Jimmy do so he can have a chance to play with the truck? For every relevant solution given (such as "can I hold it?"), a new toy and set of child characters are shown, and the procedure is repeated (Shure & Spivack, 1978).

Throughout, the goal is to elicit as many different solutions as the child can think of and it continues until the child cannot offer new solution. Typical scored solutions include "can I hold it?". "Tell the teacher", "let me have that and you can have mine", "hit him" etc.

The mother-problem story follows the same format. First, the child is told "Robbert broke his mothers flower pot and he doesn't what his mummy to be mad", and then asked, what can Robert do so his mummy won't be mad?. Typical scoreable responses include "Get her a new one", "repair it" "apologise", "hide under the bed", etc.

Scoring and Computation Procedure

The focus of the scoring procedure is on identifying the various means (which is defined as any new relevant information designed as a strategy to solve the stated problem or overcome an obstacle), in the statements the mother makes to the child. When the strategy involves several steps, credit is given for each step. Also, where different strategies are used, credit is given for each separate strategy. Obstacles on the other hand, refer to any statement or action by the child or any external event, which interferes with or could potentially interfere with solving the problem. Time is defined as taking advantage of a propitious moment or as a necessary instrumental means to solve the problems.

In the child story some of the means and obstacles are: -

Means

(i) Telling the children their running back and forth makes it hard for her to make dinner.

(ii) Suggest they make placements.

(iii) Offer a reward for being quiet.

Obstacle

(i) Kids didn't want to make placements.

A mother's total score consist of all her mean, obstacle and time scores for all the problems. To calculate a mother's mean score, her total means, obstacles and time scores are added up and divided by the number of stories. The higher the scores a mother earns the greater her ability to conceptualise the means of solving problems.

Several measures of reliability coefficients have been established for the test. These include estimates of internal consistency .80 -.84; test-retest reliability, .43 - .63; inter-ratter reliabilities on scoring the number of means in each of the first three stories obtained for three judges are .83, .95 and .90 respectively. They also reported very high construct validity for the test (Shure & Spivack, 1978).

Another procedure of assessing problem solving skills makes use of verbalisations or speak loud method. In this procedure, individuals are usually require to voice out their response as they attempt to solve given problems. The speeches are then audio taped and later analysed to determine the frequency of the occurrences of cognitive deficits. Using this procedure, for example, Clark and Palm (1990), identified seven cognitive deficits with their subjects. These are: -

1. Impulsively:- Characterised by disorganised approach to problems-no careful exploration of alternatives, looking for instant solutions and jumping to conclusions.
2. Lack of precision and accuracy in data gathering – typified by some of the available data, making decision on the basis of generalities and accepting abstract often-vague evidence.
3. Inaccurate problem definition – not recognising that a problem exists, regarding symptoms as the actual problem, and first order definitions of the problem.

4. Lack of need for logical evidence, accepting someone else's (incorrect) view of the problem, accepting a solution without evidence, refusing to change position when alternative evidence is presented.
5. Egocentric communication modalities, interpreted as "my side bias" refusing to listen to other points of view allowing personal feelings of unduly influence solving problems.
6. Impaired accuracy in communicating responses:- Communicating in generalities, using vague instructions and setting vague goals.
7. Trail-and-error responses:- Failing to plan or consider a response and testing the reception of a solution without first thinking through possible consequences.

Inter-ratter reliability was checked by means of a direct comparison of frequency observations. To check possible scorer bias, one of the authors was "blinded" to which problem represented the before and after measure. Moreover, the two ratters listened to a sample tape before beginning with the rating in order to reach agreement on the verbal manifestation of each deficit. Another approach of assessing cognitive skills which emphasises ability rather than process was developed by Kosonen and Winne (1995) in their study of statistical reasoning and everyday problems. The procedure basically involves assessing participants' ability to determine errors in information sampling. Altogether, there are eleven passages which students were asked to read and write an analysis of the validity of a conclusion drawn by a character in each of the passages.

Two out of the eleven passages were fillers (i.e. instance of problems, which are not relevant to the study). The remaining nine problems blended one problem model (single small sample, extreme deviation, large sample Vs unfounded theory, etc.). Problems were randomly ordered with the caution that no two with the sample problem mode appeared in succession.

Coding and scoring of Responses.

A three point coding system was used to mark responses.

(i) A deterministic response received a score of 1 point – which means a student made use of no statistical concepts and no mention of sample size, randomness or variance.

(ii) A poor statistical response was scored 2 meaning that a student mentioned statistical concepts but the concepts were incomplete or manifested one or more of the following:-

(a) Deterministic reasoning denoting weak statistical reasoning.

(b) Incorrect statistical reasoning such as the gambler's fallacy.

(c) Referring to statistical concepts such as lack or chance but being vague about how the statistic is relevant.

(iii) A good statistical response was scored 3 – that is, the student correctly used statistical concepts, paraphrased the law of large numbers and correctly identified sampling elements.

Scores within problem formats are then summed up to represent the quality of statistical reasoning. The maximum possible score for each of the

three formats are then added up to give an overall scoreable point of 27. The more points a student scores, the better his ability for good statistical reasoning in solving every day problems.

To obtain inter-ratter reliability on the scoring of the procedure, student's responses were typed and presented as separate items. Inter-ratter agreement was 93%, while the 9 items scale, measuring quality of statistical reasoning across problem formats yielded as internal consistency of = .76.

One of the most noticeable points that can be made from the review in this section is that assessment procedures for social cognitive skills tend to involve considerable level of subjectivity. This is evident in the frequency of inter and intra-rater reliability coefficients that have been reported for many of the assessment procedures included in this review. Partly, this may be due to the fact that so far, standardised assessments tests on social cognitive skills are not widely available. The preponderance of mainly foreign assessment instruments in the review, seems to indicate that most of the currently available assessment models are not of local origin. This, at once, suggests the need for a locally constructed test on social cognitive skills.

2.5 Review of Related Empirical Studies

Most of the researches, especially the relatively earlier research designs, seem to have focussed mainly on one component of social-cognitive skills identified in the earlier discussions. That is, these studies tended to emphasise either moral reasoning, social perspective taking or social information processing skills. Also, most of the studies cited were

conducted in the United States of America. At the local level, studies on social cognitive skills seem to be very rare. These difficulties notwithstanding, an attempt is made in this section, to review some empirical research findings that are related to the present study.

The major focus of researches derived from structural-developmental perspectives tend to be identifying and "reconciling development lags" in progression through stages of social reasoning and social perspective taking. Consequently, many researches were designed to promote advances in stages of moral reasoning and social perspective taking. Such studies have generally been conducted in the classroom, in small groups, or in dyadic groups. For developmental lags in moral reasoning, the content of training for most studies have taken the form of moral education programme which have mostly involved guided dilemma discussion which were deliberately designed along the "+1 stage method". This means exposing individuals to moral reasoning that is one stage above the level identified for research subjects.

Blatt Moshe (1967) was the first to demonstrate that moral thinking might be raised through intensive dilemma discussions (cited in Kohlberg, 1978). Working with four groups of Chicago junior high students, he found that students changed an average of nearly one third of a moral stage over a three-month period. In another classic research, Arbuthot and Gordon (1986), organised small group guided dilemma discussion programme for 35 male and 13 female students who had been nominated by teachers as "behaviour disordered ". Using the +1 stage method, they organised discussion on moral dilemmas for 16-20

weeks at 45 minutes per week. The results of the study showed significant advances in moral reasoning and other measures of behavioural maladjustment.

At the local level, Okatahi (1984) conducted one of the earliest studies on moral reasoning. She examined whether principled reasoning (the highest stage of reasoning in Kohlberg's theory) of an individual could be enhanced by moral dilemma discussions. She also examined whether an individual's principled reasoning is related to this locus of control (i.e. internal self-control), and whether an individual could attain higher self-concept as result of moral dilemma discussion.

The sample was made up of 126 male and female undergraduate students of Ahmadu Bello University, Zaria, whose age range was between 21 and 47 years. Among others, the result of the study showed that moral dilemma discussions could indeed facilitate individual's principled reasoning and locus of control. She recommended that moral dilemma discussion on day-to-day moral issues be incorporated in Nigerian school curriculum.

For social perspective taking, Chandler (1973) enhanced the perspective taking skills of incarcerated delinquent teenagers by having them develop, portray, act out video tape, and critique brief skits about events relevant to people of their age. The trainers were graduate students in psychology whose primary responsibility was to ensure that skits depicted real-life situations and to provide a role for every participant. Compared to control groups, participants demonstrated significant improvements in social-perspective taking.

Selman (1980) reported the work of Selman, Lavin, Brion-Meisels (1979) who conducted both dyadic and small group approaches to improve the perspective-taking skills and social behaviour of clinically referred adolescents. Using a variety of procedures such as guided dilemma discussions, role playing and structured activities, the participants was led to realise developmentally more appropriate behaviours. Emphasis was placed on Selman's fourth stage of social perspective taking skills in order to make effective decisions and to solve interpersonal problems. Results showed improvements in both social perspectives taking skills and social behaviour.

Efficacy of researches based on structural developmental approaches. Despite the numerous successes from studies conducted with this theoretical perspective, many researchers have questioned the overall efficacy of the structural development models, while others have question their methods. In addition to the criticisms mentioned against the theoretical perspective as a whole, Urbain and Kendal 1980 have questioned whether these abilities (i.e. abilities to consider the effect of their actions or others) themselves are sufficient to foster the development of competent social behaviour (cited in Guerra, 1993).

Furthermore, Frankel (1978:258) observed that we are not even sure if it is the discussion of the dilemmas themselves which brings about stage movement. He further noted that a sensitive and concerned teacher, (one who continually engages students in conversations and asks them questions and let them know by his or her comment and action that he/she is

interested in what they have to say), may be the independent variable in this regard.

Finally, Guerra (1993) also opined that a moral orientation that emphasises an understanding that it is wrong to harm others would likely to enhance the utilisation of perspective taking skills and social reasoning. However, individuals must still translate this understanding / orientation into specific strategies for making decisions and solving social problems in order to manage their social worlds effectively.

This suggestion is in line with the observation made by Flowers (1978), that "life seldom presents dilemmas with all the information that is included in the moral dilemmas used by Kohlberg and his associates, and the choices in life are seldom yes or no (cited in scharf, 1978). "In real life dilemmas", he continues, people often need to be taught how to gather and assess additional information to generate many alternatives, inspect consequences, select one to try, as well as, how to act on the alternative that they have selected". That is, in addition to moral reasoning skills, individual s also, require other social cognitive skills so as to achieve improved social competence.

Among the relatively early research efforts on social problem solving skills, was the work of Sarason and Gomzer (1973), who conducted modelling and small group problem solving skill experiments for institutionalised male first offenders. The experiments centred on teaching participants to think about socially appropriate responses to typical problem situations. Much emphasis was placed on generating alternative solutions and considering consequences. In contrast with a control group, results of the experiment

indicated that treated groups evidenced more positive attitudes, improvements in social behaviour, and lower recidivism for 2-3 years following the intervention.

Shure and Spivack (1978), conducted problem solving skills training with pre-school and kindergarten children. The emphasis of the programme was on improving children's ability to generate alternative solutions and to determine possible obstacles to these solutions. Results of the study showed that alternative solution thinking and ability to determine possible obstacles to problems, were the most important determinants of social adjustment for young children, irrespective of their 1.Q.

Feindler, et al., (1986) trained institutionalised psychiatric male adolescents in a range of interpersonal cognitive problem solving skills as well as cognitive self-control methods for controlling anger. Following 12 one-hour small group sessions treated subjects evidenced decreases in hostile verbalisations during standardised role-play assessments and decreases in aggressive behaviours when compared to a control group.

Kazdin (1989) offered problem solving training, problem solving with vivo-practice (i.e. non directive relationship) to 112 children of the same age, 75 percent of whom had received a primary or secondary diagnosis in cognitive skills deficiency. Results showed that at completion of treatment and 1 years later, both forms of training significantly reduced disruptive behaviour and increased pro-social behaviour at home and school, compared to a no treatment control group.

Clarke and Palm (1990) conducted a problem solving skills training programme for adult managers in a large industrial co-operative in South Africa. The major focus of the programme was to remedy participants' problem solving skill deficits, as well as, to increase self-awareness about the occurrence of these deficits. The programme consisted of four-4 hour modules spread over a period of two weeks. Results showed that training programme have significant positive effects on the participants thinking as well as, "dramatic" decreases in the frequency of the occurrence of the cognitive or problem-solving deficits experienced by participants before the programme commenced.

In a meta-analytical review of 48 outcome studies of problem solving skills studies published or completed between 1971 and 1987, Dush, et al, (1989), revealed that treated (or trained) groups surpassed control or placebo groups in overall effectiveness by approximately half a standard deviation. This means that the average child who receives cognitive skills training is better adjusted at the end of treatment than approximately 70 percent of children who did not receive such training at all. However, the authors qualified this broad conclusion by saying that: -

(i) The superiority of cognitive skills training was most pronounced immediately after treatment and generally disappeared at follow-up.

(ii) The efficacy of cognitive skills training was generally lower with aggressive or disruptive behaviour problems than with other conditions.

(iii) Problem solving skills training appeared to be more effective with younger children.

(iv) The efficacy of cognitive skills training was also related to variables such as therapist's training, intervention setting and type of outcome measure used.

Perhaps because of observations such as one and two above, more recent studies on social cognitive skills tend to incorporate not just the social information processing skills, but other social cognitive factors that affect social behaviour particularly the social problem solving behaviour. An example of such recent studies is the work of Guerra and Slabby (1990) who developed a 12 session (one hour per session) social problem solving intervention for incarcerated male and female adolescent delinquents. The focus of the study was to increase participants' social information processing skills and modify beliefs that support the use of aggression across a range of situations. When compared to adolescents in an untreated control group, treated participants showed gains in social problem solving skills and decreases in endorsement of beliefs supporting aggression. Furthermore, significant decreases in aggressive impulsive and inflexible behaviours were found (Guerra, 1993).

Efficacy of social problem solving skills research and experiments;

From this brief review of related studies in social-cognitive skills, there appears to be more support for the social problem solving skill approach to social cognitive skill deficits in particular and social adjustment in general. Indeed in addition to the particular studies cited in the section, other extensive

reviews such as those by Davis and Tolan (1993) Bellack, et al., (1992), Frame, et al., (1992), Dumas (1992), Mahoney and Arnkoff (1978), to mention just a few, all seem to agree that the social problem solving approach offers the best alternative to social adjustment and mental health. However, as the meta-analytical review by Dush, et al., (1989) has shown, more needs to be done to improve over it's overall efficacy.

2.6 SUMMARY

The review of related literature contained in this chapter has raised several theoretical issues of interest to this study. First, although there seems to be some general agreement that social cognition is not merely the application of cognitive structure to social content, theoretical differences exist on many issues and concerns related to it. There are, for example, noticeable theoretical differences on which abilities or competencies constitute the most crucial determinants of social cognitive competence. Also, there are differences about the type of research design and treatment model to be adopted, the assessment methods or procedures to be employed in evaluating these skills and the role of the social cultural environment in their acquisition, development and enhancement. The structural developmentalists and the information processing theorists on their part seem to emphasise intellectual skills. The social learning theorists tend to be more pre-occupied with the social environmental determinants such as reinforcements, punishment, modelling and the family. The ethologists on

their part tend to focus on the innate biological foundations of these skills, which they also believe to be specie specific.

Despite these strong theoretical differences the skills, abilities or competencies, which seem to have the most far-reaching clinical importance and empirical supports are those of moral reasoning, social perspective taking, the ability for self-understanding, self -evaluation and self -control. The ability to effectively process social information (i.e. to solve given social problems) is also a very important component in this regard. Theoretical differences also seem to affect the assessment procedures (i.e. methods) employed to evaluate the skills. For the structural developmentalists, the most frequency used methods are naturalistic observation, moral interview (quite often with hypothetical moral dilemma), while the information processing theorist tend to base their assessments on participants responses on given problems.

With regards to treatment and research designs, theoretical differences tend to be reflected in the nature and focus of outcome measure to be achieved. For the structural developmentalist, the focus of treatment and research has been on identifying areas of developmental lags and the nature of treatment has generally been on the +1 stage model. While for the information processing theorists, intervention programmes have generally been geared towards enhancing the acquisition and development of skills that are usually held as having inherent generalise-able qualities to real life social problem situations.

On the whole, a basic weakness of most earlier treatment and research designs on social cognitive competence seem to be the emphasis on just one aspect of social cognitive ability such as moral reasoning or social perspective taking. On the other hand, the need for combining these skills in simple enhancement programmes seems to be advocated for by several authors. The authors include Guerra, 1993, Kadzin, 1989, Davis and Tolan, 1993, Tolan and Loeber, 1993, Heppener and Frazier 1992and Fenton, 1978, to mention just a few.

CHAPTER 3

METHODOLOGY

3.1 Introduction

An attempt is made in this chapter to give a detail account of the research design and other procedures adopted for the study. These include a description of the research design, a discussion of the population and sampling procedure. Experimental treatment and control procedures, construction and validation of research instruments, statistical procedures employed to establish the reliability of the research instrument, administration and scoring of the instruments as well as the statistical methods for testing the research hypotheses were also discussed.

3.2 Research Design

Although experimental designs provide the strongest evidence for cause-effect relationships, the quasi-experimental procedure was adopted for this study because of two reasons. First, the target population of this study were secondary school students whose group composition had already been decided, thereby limiting the application of true random sampling procedures associated with the experimental designs. Second, rigorous control over all experimental conditions and variables found in true experimental designs has also not been fully maintained in this research. This is because it was conducted in the real life situation of the participants.

A quasi-experimental research can be described as that which involves comparing a single group of subjects over a period of time or comparing groups

that were not constituted by random assignment (Gay, 1992; Wiersma, 1992; Cherulnik, 1993). However, despite this limitation associated with quasi-experimental designs, some elements of randomisation is often possible. This include, for example, randomly selecting schools to be included in the experiment, and randomly selecting the classes that would receive treatment and control. (How these were practically operationalised for the present study were discussed under sampling procedure).

The pretest-posttest equivalent control group design (Gay, 1992; Wiersma, 1992; Cherulnik, 1993) was adopted for this study. This design is similar to the pretest-posttest control group design, with the major difference being the use of already existing groups. The design can be represented symbolically as follows:-

Fig. 3.1

EQUIVALENT CONTROL GROUP DESIGN

G1	R	0_1	X	0_2
G2	R	0_3		0_4

Where:

0_1 and 0_3 refer to the observation immediately before the commencement of the experiment (i.e. pre-test)

0_2 and 0_4 refer to the observations after the experimental treatment (i.e. post-test)

X = represents the experimental treatment.

As could be seen from the diagram above, the design essentially involves two groups: one receives experimental treatment and the other does not. The group that received the treatment is referred to as the treatment group while the group that did not receive any treatment is referred to as the no treatment or control group.

According to virtually all the authors cited above, the design controls for nearly all the threats to experimental research validity, with the exception sensitising effect of pre-setting, experimental mortality and temporary group composition effect (Cherulnik, 1983). To ensure that these potential threats to validity, were controlled for or reduced to the bearest minimum, the following measures were taken.

To control for temporary group composition effects, comparability tests were conducted on the pre-test mean scores obtained by the three schools on all research variables, including SPM scores. Results of these comparability tests (summarised in appendix H), revealed that all the three schools obtained statistically equal pre-test mean scores on SRIU, ATSP, SPM and PSPPI.

Maturation effect was assessed by comparing the pre-test and post test mean scores obtained by the control group using the "t" test for related samples of SIPSS, SRIU, PSPPI. While the Wilcoxon non-parametric statistics was used for ATSPS in this regard. As could be seen from appendix I, no Significant differences were found on all these variables based on the pre-test and post test mean scores obtained by the control group. This seems to suggest that maturation effects were not a serious threat to the validity of the findings of this study.

To control for the sensitising effects of pre-testing, two parallel forms of the assessment test were constructed. Test 'A' was used for pre-test, while test 'B' was used for post-test.

Finally, to control for experimental mortality, a relatively large sample was included in both the control and treatment groups. Furthermore, students were educated about the importance and the benefits they stood to gain by participating in the programme, so as to 'lure' them to stay throughout the experimental period. These measures seemed to have yielded positive results because only six students dropped out of the programme.

3.3 The Population

The target population of this study is all the senior secondary II students in all the seven male boarding school within Sokoto metropolis. Data collected directly from all the seven affected schools revealed that there are a total of one thousand and sixty-five secondary school II students in all such schools. The breakdown is shown in Table 3.1 below: -

TABLE 3.1

Distribution of Target Population by Schools

S/No.	Name of School	Total No. of Senior Secondary II Students
1.	Ahmadu Bello Academy, Farfaru, Sokoto	130
2.	Sultan Abubakar College, Sokoto	160
3	Sheikh Gummi Memorial College, Sokoto	120
4	Sokoto Science College, Sokoto	215
5	Sani Dingyadi Science Sec. School, Farfaru Sokoto	200
6	Govt. Tech. College, Farfaru – Sokoto.	150
7	Nagarta College, Sokoto	90
		1,065

Source: Data collected directly from affected schools.

Secondary school students were selected for the study in view of the various research reports (in earlier chapters) indicating that social problem-solving skills training is most beneficial or effective at the pre-adolescent and adolescent years. Furthermore, several studies including some conducted in the area under study (mentioned in the earlier chapters), have indicated various social maladjustment problems particularly among secondary school students in Nigeria. Senior Secondary School II students were selected for the study because by that stage, students must have acquired some level of proficiency in English language (the language of instruction for the experiment) and that they were also not affected by the terminal effect (i.e. leaving school soon after the experiment)

Sokoto metropolis was selected for this study because of two main reasons. Firstly, there seems not to be any previous experiment of this kind in the area known to this researcher, despite the need for it, which has been established in the earlier chapters. Secondly, Sokoto Township is the most cosmopolitan, and has more concentration of Male Secondary boarding schools than any other town in Sokoto State (as well as, in the other sister states of Kebbi and Zamfara), which share similar socio-cultural beliefs values and practices. Thus, there is greater possibility of having students from all the three states thereby enhancing some level of ecological representativeness (particularly with regards to socio-cultural beliefs and practices), despite the restricted nature of the research design.

Boarding schools were chosen primarily to promote some level of control over both the treatment and control groups during the period of experiment because such schools often impose restrictions on the movement of students whenever the schools are in session. Finally, male boarding schools were given preference to female one's mainly because schools in Sokoto State (as well as in Kebbi and Zamfara states), are predominantly single sex schools. It was also feared that a male researcher might not be allowed to be meeting freely with female students over a relatively long period.

3.4 The Sampling Procedure

Despite the delimitation imposed on this study, there was still a relatively large number of students who constitute the target population of this study, which necessitated a sampling strategy that would ensure that a sample was obtained independent of the will and judgement of the researcher. As was shown in Table 3.1

above, there were slightly over 1,000 Senior Secondary II students in male boarding schools within Sokoto metropolis. The following steps were taken in arriving at the schools and the students involved in this study. Firstly, to get the particular schools from which the samples were drawn, the names of all the seven male boarding schools within Sokoto metropolis were written on pieces of paper separately and then folded tightly such that no one could see what was written on them.

A colleague of the researcher who was not aware of the contents of the papers was asked to pick three of these wrapped papers. The 2nd, 6th and 7th schools listed in table one were selected as a result of this exercise. The pre-test instrument was subsequently administered on all S.S. II students in these schools.

After all the completed pre-test instruments were collected and scored by this researcher, students who obtained up to or below the mean score of 15.64 (for SIPSS) and 15 (for SRIU), were selected in all the schools and are summarised in the Table 3.2 below:-

TABLE 3.2

Distribution of Obtained Sample Size by Schools

SCHOOL	NUMBER OBTAINED	TOTAL NUMBER OF SS II STUDENTS	PERCENTAGE
School 1	62	150	41.22
School 2	49	90	54.89
School 3	64	160	40.00
TOTAL	**175**		

Source: Data collected from PILOT STUDY.

After this step was completed, informal discussions were held with some teachers in all the three schools to assess, in real life terms, whether selected number out of these students have any notable behaviour problems. Specifically teachers were asked to comment about the interpersonal relationships and behaviour characteristic of these students.

Information gathered from these discussions seem to suggest that some of the students tended to be "Unsociable", "Unfriendly", "Troublesome", "Shy", "Reserved" and "Aggressive". Unfortunately, none of the schools involved in the present study had established Guidance and Counselling Centres hence it has not been possible to check through the cumulative records of these students to further verify these verbal comments by teachers. Subsequently, the figure in table 3.2 above was taken as the immediate sample for this study.

3:5 Treatment procedure

3.5.1 Construction of Treatment Modules

One of the major objectives of the study is to construct a social problem solving skills programme that would be used to remedy social cognitive skills deficits among Senior Secondary School students in Sokoto metropolis.

In constructing the treatment modules, the following stages were involved: -

Stage 1:

This involved reviewing and selecting from available models and literature on social problem solving skills, principles, procedures, methods, and steps. It also included selecting other social cognitive structural competencies that are very important for adolescents' social competence and adjustment, with particular

emphasis on moral reasoning, social perspective taking and self-control procedures. This stage also involved the construction of two modules on modification of three socio-cultural factors that are likely to lend to negative attitudes towards social problem solving. Altogether, 12 separate modules one for each topic was constructed.

Stage II

This involved the validation of the initial draft of the treatment modules by various specialists in guidance and Counselling as well as related fields particularly educational psychology. (Their suggestions and recommendation have been fully reflected in the final draft of treatment programme).

Stage III:

This involved pilot testing of five out of the twelve modules in one of the day secondary schools within Sokoto metropolis, which was not part of the study. This step enabled the researcher to determine, among other things, the timing, level of vocabulary and validity of the treatment modules for the participants. The result of the pilot testing showed that the programme is generally suitable and relevant to senior secondary students.

3.5.2 General Outline and Description of Treatment Modules

The entire treatment programme is made up of twelve instructional or teaching modules each of which centres on a particular topic relevant to the social cognitive ability and competence. Furthermore, each module contains specific behavioural objectives to be achieved at the end of that particular module, an introduction or stimulus material, and presentation procedure and evaluation

questions. "Procedure", as defined here, refers to the steps followed by the presenter and the content to be covered for that particular step. A time limit of one hour twenty minutes was allocated for each module.

The twelve modules were preceded by six general aims, which were expected to be achieved by the end of the entire programme. These general objectives were presented to the principals of the participating schools, officials of the Ministry of Education, and the participants themselves to show them the significance and the expected benefits of the programme and to ward off any possible misconceptions about the programme. The content and source(s) from which the methods, concepts, procedures and skills were adopted for each module are shown in appendix A.

3.5.3 **Validity of Treatment Modules**

In addition to vetting the treatment modules by specialists in the field of guidance and Counselling and educational psychology, five of the drafted modules were presented to a group of 30 senior secondary II students in the same day secondary school where the research instruments were pilot- tested. This measure was taken to further determine their effectiveness before the main study. This group served as the pilot study treatment (PST) group. This researcher was permitted to use the last two hours of the morning school sessions to teach the selected modules. One module was covered in each contact session, which was spread over a period of two weeks. The particular modules involved in this pilot testing are modules 1, 2, 3, 6 and 11 (as shown in appendix A). The Raven's SPM

was administered to this group before the teaching sessions were completed. The SCAT B was administered after the five modules were fully taught.

A comparison of the mean scores obtained by this PST group was made with the mean scores of the pilot study control group to determine whether the teachings had yielded any positive result. The "t" test for independent samples was used for the mean scores on SIPSS, SRIU, PSPPI and the Mann-Whitney "U" test was used for ATSPS. Results obtained from these analyses are summarised in Table 3.3 below: -

TABLE 3.3

Results of 'T' and 'U' Tests for PST and PSC Groups.

Group	Variable	$\bar{X}$	"t" Call.	DF	"t" Criti.	Level of Signi.	Remarks
PST	SIPSS	19.67	6.05	58	1.67	0.5	Significant
PSC	SIPSS	17.16					
PST	SRIU	19.86	7.19	58	1.67	0.5	Significant
PSC	SRIU	19.76					
PST	PSPPI	14.27	-6.78	58	1.67	0.5	Significant
PSC	PSPPI	16.23					
PST	SPM	47.47	.173	58	1.67	0.5	Not Significant
PSC	SPM	47.43					
PST	ATSPS	ER 464	"u" transferred to S= 6.678		S critical ±1.96	.05	Significant
PSC	ATSPS	ER 1364					

Source: Data Collected from Pilot Study.

Where; PST= Pilot study treatment group.

PSC= Pilot study control group.

From table 3.3 it is apparent that there is a significant difference between the pilot study treatment and pilot study control groups on all research variables except on SPM. The PST obtained significantly higher mean scores on SIPSS and SRIU factors and lower mean scores on ATSPS and PSPPI. These differences seem to be as a result of the treatment session, which was based on the treatment modules and hence it was concluded that the constructed modules were suitable for the main study.

3.5.4 **Treatment Sessions**

The researcher conducted all the treatment sessions personally. The treatment sessions predominantly involved teaching or instructions centred on one module per meeting or contact session; during the afternoon prep hours of the students (for the main study), in the classrooms. The prep period was used so as not to interfere with the students' normal class teaching hours. There were three contact sessions for each treatment school per week, making a total of 12 session for the 4 weeks. Students were encouraged to participate as fully as possible in all the activities during all the contact sessions.

3.6 **Instrumentation**

3.6.1 **Construction of Research Instruments**

Two major reasons necessitated the construction of the research instruments. First, none of the currently available assessment models (known to

the researcher), clearly fits the present research design. As has been shown in Chapter II, virtually all the present models seem to focus on just one aspect or theoretical perspective to social cognitive competence. That is, none of the existing procedures has the "holistic" approach adopted for the present study. Second, it also seems that most of the existing models have not been locally validated to determine their socio-cultural validity and reliability.

In constructing the research instrument, extensive review of related literature was made so as to ensure that the model meets all the fundamental concerns of this study. Some items were adopted from existing related tests particularly the MEPS and SPI. However, care was taken to ensure that such questions or items were strongly related to the objectives of the present study. Also, because of the need to reduce the sensitising effect of pre-testing, two equivalent or parallel versions of the same test were constructed.

Each version of the test contained equal and equivalent number of problems and items. In this regard, each version of the test has four sections. Section 'A' in each of the versions, deals with the personal data of the student, such as his age, school, level of educational attainment of parents, occupation of parents and so on. Section 'B' (one each test), assessed the social information processing skills of respondents, with particular emphasis on ability to comprehend problems, determine causes and consequences of hypothetical personal-social problems. It also assessed the cognitive ability to think about all possible alternatives or solutions, obstacles to alternatives or solutions, choosing among alternative and rationale for choosing among several alternatives or solutions.

There are three different problems in each of the tests under this section (i.e. section 'B'), and the probes after each problem was patterned along Platt and Shure's (1975) Mean-Ends Problem Solving (MEPS). The major difference between the present format and MEPS being that in the latter, probes centred mainly on means-ends and obstacle thinking, while in the former there are questions on other aspects of the social information processing stages. This was considered necessary because one of the major assumptions of the current study is that adolescents need more than just those two skills in order to overcome social cognitive deficits.

On the whole, the questions and probes in this section are designed to assess seven major components of the social problem solving process. These are: -

1. **Recognition and Comprehension of Social Problem (RCSP)**

   This refers to an individual's ability or skill in identifying and defining exactly or appropriately the main problem facing the character in the hypothetical problem situation. Question 1 (a and b) to problem two (on both tests) were designed to determine this ability. In scoring the responses to these questions emphasis was placed on the "quality" of a student's responses, rather than quantity.

2. **Causes of Social Problems (CSP).**

   This refers to the ability to identify causes of the given social problems. Since optimal social problem solving is best enhanced by identifying as many causes of the problem as possible, emphasis was placed on respondents' ability to identify as many possible causes to the hypothetical

problems as possible. Questions 1 to problem three (on both tests) were designed to achieve this.

3. **Possible Consequences of Social Problems (PCSP): -**

This is another important component of social information processing which centre on identifying as many consequences as possible that might result to the main character in the hypothetical social problem. Question 3 to problem 3 (on both tests) was meant to assess this skill.

4. **Alternative Solutions to Social Problem (AST):**

Literature seems to suggest that this ability is the most crucial in promoting social cognitive competence. Consequently, more emphasis was given to this skill in the assessment test, than any other skill. To this end, all the three problems (on both tests), had a question each on this skill for test 'A' question 1 (to problem 2), question 2 (to problem 2), and question 3 (to problem 3), were all meant to assess this skill. For test B, the corresponding numbers of questions (to each problem) mention, for test A, were similarly addressed to this skill.

5. **Possible Difficulties Associated with Alternatives or Solutions (PDAS):**

This skill includes the ability to determine all the obstacles or difficulties that may hinder the implementation of a solution of alternative. Question 1 to problem 3 (on both tests) was designed to measure this skill.

6. **Sources of Information about Personal-Social Problems (PSISP): -**

Information gathering is another component of the social problem solving process, consequently, question 2 to problem 1 (on both tests) was designed to measure an individual's awareness about the possible sources

of information on the given personal-social problems available to the main character in the situation.

7. **Reasons for Choice of Best Alternative (RCBA): -**

This is ability aspect of social problem solving. Consequently, in the present instrument, questions 3 (a and b) to problem 2 (on both tests) were developed to assess the skill. Sub question "a" in this regard asks the respondent to show the alternative he would choose, while sub question "b" determines reasons or rationale for choosing the particular alternative.

Section C (in each version of the test) measures participants' social reasoning and interpersonal understanding (SRIU). One fundamental reason for including items in this section is the fact that the assessment of social cognitive competence (as viewed in this work frame), should include not just the social information processing skills, but also the structural developmental competencies in moral reasoning and social perspective taking. This step was taken with a view to giving broader and deeper view of social cognitive deficits being experienced by an individual.

The assessment procedure in this section was patterned along the structural-developmental perspective with particular reference to Kohlberg's (1969) more reasoning stages, and Selman's (1980) stages of social perspective taking. For moral reasoning the, dilemmas were deliberately structured to reflect some socio-cultural realities of the target population. For social perspective taking, emphasis was on the friendship and parent child domains.

Items on this section of the test were designed to measure two main components of social reasoning and interpersonal understanding.

1. Social Reasoning Orientation (SRO): This refers to the type of social reasoning orientation or attitudes the individual is likely to take or have on moral dilemma problems such as orientation towards telling the truth, accepting responsibility for personal mistakes, willingness to apologies, and so on.
2. Level of Social Reasoning and Interpersonal Understanding (LSRIU): This refers to stage or level of reasoning that the individual expressed on a particular moral social or interpersonal dilemma situation. The levels or stages of social reasoning and interpersonal understanding for this study were patterned along the stages of moral reasoning developed by Kohleberg (1969) and the stages of interpersonal understanding developed by Selman (1980). The assumption about qualitative integration associated with these works is also believed to be operative in the LSRIU adopted for the present study.

Section D (in both tests) was designed to determine the relationship between students' cognitive ability, on the one hand, and their social-psychological adjustment on the other. The underlying assumption here is to ensure greater construct validity by comparing students real ability (as measured by their scores SIPSS and SRIU factors), and their personal assessment of social-psychological adjustment. All the problems included in this section were drawn from Bakare's (1977) Student Problem Inventory (SPI).

However, the response options in the original inventory was slightly widened. In the present instrument, respondents were given a 3 – point response option; namely:

0 = Never a problem for me;

1 = Sometimes a problem for me;

2 = Always a problem for me.

The total score obtained in this section of the research instrument is referred to as the personal, social and psychological problems index (PSPPI). High scores imply inability to solve these problems in real life situation.

Finally, Section 'E' (for both tests) was designed to measure students' attitudes towards social problem solving (ATSPS). Review of related literature in the first two chapter of this report has shown that the type of attitude beliefs and feeling one has (i.e. negative or positive) tends to indicate the behaviours one would display in real life problem solving situations. That is, negative attitudes will lead to negative behaviours or failure to solve real life problems.

Except for items measuring social-cultural beliefs, all the items in this section were adopted from Heppener and Peterson's (1982) personal problem Solving Inventory (PPSI). However, because the present study, was designed to correct deficiency, emphasis was given to items measuring negative feelings, attitudes and beliefs, hence high scores indicate high maladaptive attitudes towards social problem solving.

3.6.2 Validity and Reliability of Research Instruments

Several steps were taken to ensure high reliability and validity of the research instrument. First, mention must be made of the high reliability and validity coefficients of the existing instruments from which many of the items in the present instrument were either adopted or deliberately patterned. For example, MEPS has about .80 - .84 as its coefficient of internal consistency, and a test-retest correlation coefficient of between .43 - .63 Inter-rater reliabilities on scoring the number of means in each of the first three stories (i.e. problems) were .83, .95, .90 respectively. For the PPS, the coefficient of internal consistency for the total inventory is .90 while test-retest reliabilities for the total inventory is .89.

However, since these test are not being used in their original forms and infact were used in a difference socio-cultural environment, other measures were taken to get new estimates of validity and reliability. The first measure taken in this regard was that the items (in both versions of the test) were deliberately selected, structured and patterned along these existing tests (except where it was considered necessary to deviate). Second, the draft of the test was given to three doctoral colleagues of the researcher to validate.

In the next stage of the validation process, three experts were given the draft to vet and make all necessary suggestions and recommendations. After their comments were considered and reflected, the draft was then divided into two halves, to pave the way for pilot testing the instrument. Based on the data obtained from the pilot study, several measures of reliability and validity coefficients were computed. These include: -

I. Estimates of intra-rater reliability

II. Equivalent forms correlation coefficient

III. Standard Error of Measurement

IV. Correlation coefficient of SIPSS and SRIU Scores with Raven's Standard Progressive Matrices (SPM).

These are further discussed as follows: -

1. **Estimates of Intra Rater Reliability**

According to Gay (1992), whenever a test or assessment instrument contains more than one word response option, there is the need to establish inter or intra rater reliability on the scoring of the obtained responses. Since this researcher scored all the completed research instruments himself, estimates of intrar rater reliability were considered more crucial. Consequently, three samples each of the completed and scored instruments were given to two lecturers (one in guidance and Counselling and the other in Mathematics Education) to indicate their agreements with the scores given, and to express these agreements in simple percentage scores. Both judges gave ratings of 95 and 93 percents respectively.

2. **Coefficients of Equivalence**:

Since the correlation between the two parallel forms administered with a lapse of days or weeks in between represents the most preferred procedure for estimating reliability (Thorndike & Hagen, 1977:79), the parallel or equivalent forms reliability coefficients were computed for the present research instruments. The major requirements for the parallel forms reliability are that there must be two forms of the same test and that they must be built according to the same specifications in terms of average score, variability of scores, content and type of items. These were considered to have been met by the two forms of the present

instrument. Table 3.4 below summarises the Coefficients of Equivalents obtained for the various sections of the two items.

TABLE 3.4

Summary of Coefficients of Equivalence for the Parallel Forms of the Research Instrument

	INSTRUMENT					
S/No.	Sections	Computed r	R 11	Df	Critical Value for 0.5	Remarks
1.	B(SIPSS)	.923	.959	29	.355	Significant
2.	C(SRIU)	.805	.892	29	.355	Significant
3.	O(PSPPI)	.619	.765	29	.355	Significant
4.	E(ATSPS)	.730	.844	29	.355	Significant

N = 30

Source: Data collected for Pilot Study.

As could be seen from Table 3.4, the two parallel forms of the test are significantly correlated. The lowest coefficient of equivalence is .77 despite the fact that equivalent form reliability tends to have lower reliability estimates compared to other forms of reliability estimates (Thorndike & Hagen, 1977).

Standard Error of Measurement

Another effort at establishing the reliability of the research instrument was the computation of standard error of measurement (SEM) for the various sections of the test. SEM is an estimate of the size of error to be expected from subsequent administrations of the same instrument, and according to Gay (1992), low values of it, indicate high reliability for a given test. Table 5 summarises the obtained values

of SEM for the various sections of the two parallel forms of the research instrument.

TABLE 3.5

Summary of Standard Error of Measurement for the Research Instrument

	TEST A			TEST B		
Section	SD	r11	SEM	SD	r11	SEM
B.	2.356	.959	1.293	2.183	.959	1.060
C	2.155	.892	.950	2.825	.892	1.247
D	2.820	.765	1.739	3.240	.765	1.999
E.	4.569	.844	2.370	4.657	.844	2.420

N = 30

SEM calculated with the following formula

SEM = SD $\sqrt{1-R}$

(Source: Gay 1992:169)

The low values of SEM as shown in table 3.5, are held as further proof for the reliability of the research instrument.

4. **Correlation between Obtained Scores and Ravens Standard Progressive Matrices**

Campbell (1960) suggested that all new tests should be correlated with an intelligent to determine construct validity. The obtained mean scores for the two parallel forms of the test were correlated with total scores obtained by some individuals on the Raven's Standard Progressive Matrices (DSPM). Results obtained from these analyses are presented in Table 3.6 :

TABLE 3.6

Summary of the Correlation Coefficients with SPAM Score

Section/Test	R/Cal.	Df	Critical value	Remarks
Test A;				
SPSS	.501	29	.355	Significant
SRIU	.523	41	.355	"
Test B;				
SPSS	.533	29	.355	"
SRIU	.512	41	.355	"
N=30				

Source: Data collected from pilot study.

From the results of analyses presented in Table 3.6, there is a significant positive relationship between scores on the SCAT and SPM. This result was not considered surprising because many theorists on social cognitive competencies seem to agree that intelligence is positively related with social cognitive skills (Vasta et, al., 1992).

Based on the results of analyses for the Pilot study data, the following decisions were taken: -

1. The study was both feasible and justified particularly in view of the fact that many senior secondary II students appeared to be experiencing serious social cognitive deficiency. Many of them also appeared to be able to give only one cause, consequence, and source of information and alternative course of action on the hypothetical problems presented to them.

2. The research instruments seem to be fairly reliable and valid instruments for measuring social cognitive deficiency among senior secondary II students in state boarding schools within Sokoto metropolis.
3. The treatment modules seem to be valid and effective in remedying social cognitive deficiency and hence were considered appropriate for the main study.
4. At least 1.20 minutes was required for each module to be effectively taught.
5. The theoretical framework adopted for the present study seems to be adequate.

3.6.3 Administration of Research Instruments

Four permanent teachers and two Youth Corp members (two each per school) were involved in the administration of the research instrument. The teachers were fully trained about the structure of the research instruments and were asked to assure the students about the confidentiality that would be accorded all completed tests. The pre-test instrument was administered on the same day for all the schools. The researcher went round the schools to give any further assistance, which might be required. Because enough copies of the instruments were produced, there were no shortages during the administration.

After the students had completed the research instruments, the teachers collected them and the process of scoring them followed immediately. As mentioned earlier, only students who scored up or below lower confidence interval were earmarked to receive treatment. The researcher addressed these students

and they were also told that the principals had allocated the evening prep hours for this study.

The Ravens Stand Progressive Matrices was administered in the same week that the SCAT was administered but at different times because there were not enough copies to do that at the same time.

The post test instrument was administered the second day after the teaching/treatment sessions were over. The teachers and the two youth Corp members who administered the pre-test instrument in each school were also involved in the administration of the post-test instrument. There were no serious problems during the pre-test and post-test administrations of the research instrument.

Scoring of Research Instrument

The scoring procedure for both the pre-test and post-test administration of the research instruments strictly followed the guideline earlier constructed for both test (see appendix C).

As could be seen in the scoring guide for section B (i.e. SIPSS), a mark was given for each appropriate response a student makes (except for PCSP and RCBA where importance was placed on quality). These scores were then added up and recorded for the sub-variable concerned. For example, a student who gives only two courses or consequences to the hypothetical problems in this section will have 2 recorded for his against this sub variable. The total obtained by each student gives his SPSS score.

For section C (i.e. SRIU), there were six different questions-three each for SRO and LSRIU. To determine a student's score in this section, the responses

were first critically examined to find out the type of social reasoning orientation or the level of special reasons or inter personal understanding expressed. The appropriate score (as indicated in the scoring guide) was then recorded for the student. For example, the response "in case something happens to in the pond" attracted 3 points [i.e. LSRIU].

Since there were three different questions on SRO and LSRIU, the allocated scores were recorded separately hence there are SRO-1, SRO-2 and SRO-3 as well as LSRIU-1, LSRIU-2 and LSRIU-3. The total score for all the six gives each student's SRIU score.

The scoring procedure for Section D (i.e. PSPPI) and Section E (i.e. ATSPS) were relatively easier because the response options were on the Likert type response format. For both sections, the response options indicated by the student were simply assigned the corresponding score as mentioned above. For example, a student who indicated always a problem for me, against any item in section would have 2 and 1 for sometimes a problem for me. The total scores were then added up and the obtained score recorded for each student. The total scores were then used in the subsequent computations and analyses reported in chapter four and the appendixes. The same procedure was followed for Section E. That is Disagree 2, Agree 3, and Strongly Agree 4. The obtained data were then coded into the computer for subsequent analysis as presented in chapter four.

3.7 Statistical Methods for Testing Research Hypotheses:

Level of Significance

Because the 95 percent confidence interval is a less rigorous but well accepted level for testing behavioural science hypotheses (Gay, 1992;

Wiersma, 1992; Kerlinger, 1986), all the four null hypotheses for this study were tested at the .05 level of significance.

Inferential Statistics for Analysing Research Hypotheses:

There are 4 null hypotheses tested in the study. These are: -

HO_1: There is no significant difference between the posttest mean scores of the treatment and control groups on measures of social information processing skills (SIPSS).

HO_2: There is no significant difference between the posttest mean scores for the treatment and control groups on measures of social reasoning and interpersonal understanding (SRIU).

HO_3: There is no significant difference between the posttest mean scores for the treatment and control groups on the personal, social and psychological problems index (PSPPI).

HO_4: There is no significant difference between the posttest means attitude score for the treatment and control groups.

Null Hypotheses 1, 2 and 3 were all tested with the "t" test statistic for independent samples. This is because the variables in these hypotheses were assumed to be normally distributed. The collected data were considered to be on the interval scale. However, the Mann-Whitney "U" non-parametric statistic was used to test HO4, because attitude was considered a non-norrmally distributed variable hence the use of the "t" test parametric statistics for independent samples was considered in-appropriate.

3.8 Summary:

The quasi-experimental procedure was adopted for this study because the experiments were conducted in the real life conditions of the participants who were also in already existing groups before the commencement of the present study. Four threats to validity were identified as possible compounding variables associated with the present design. These are improper group composition effects, sensitising effects of pre-testing, mortality and maturation. The measures taken to control for these threats to validity seem to have yielded positive results because all the statistical analyses in this regard indicated no significant effects.

The treatment modules and assessment instruments adopted for this study seem to be valid and reliable. For example, results of the pilot study showed that the PST obtained significantly higher mean scores compared to PSC.

CHAPTER 4

RESULTS AND DISCUSSIONS

4.1 Introduction

In this chapter, results of analyses on collected data for the present study are presented. Analyses were conducted using the statistical package for social sciences for portable computers (SPSS PCX). Results of analyses on demographic data are presented first so as to give background information on participants for the study. Results of analyses in terms of research hypotheses and discussions of findings follow these. The summary of overall findings and their implications for guidance and Counselling in Nigeria are also presented in this chapter.

4.2 Descriptive Data

The personal data section of the research instrument contains 12 items. The first two items relate to respondents' school and class. These two items were included mainly to enable the tests to be separated for each school and hence are not included in the presentation below.

Item 3 on the research instrument enquired about respondents' age. Data collected for these items is presented in table 4.1:

TABLE 4.1

Age Distribution of Research Participants by Schools

AGE GROUP	SCHOOL1	SCHOOL2	SCHOOL3	TOTAL	TOTAL PERCENTAGE
15-17	22	24	14	60	34.286
18-20	40	22	47	109	62.286
21-23	0	3	3	6	3.409
Total	62	49	64	175	100.001
Mean	17.935	17.714	18.484	18.074	
Standard Deviation	1.447	1.837	1.469	1.597	

Source: Data collected for main study.

From data in table 4.1, the mean age for the entire sample was 18.074. With a standard deviation of 1.597,which is about five months higher than that recorded for the pilot study sample. For individual schools, school 2 had the youngest group of students with a mean age of 17.71 years, while school 3 had the oldest group of students with a mean age of 18.48 years. School 1 was located somewhere in the middle of this range with a mean age of 17.94 years. The mean age of 18.07 years means that on the average, participants in the present study were at least 2 years above. This is often considered as necessary though not the only condition for higher levels for virtually all the social cognitive skills involved in this study.

Item 5 required respondents to indicate their religious affiliation. Collected data for this item are presented in table 4.2 :

TABLE 4.2

Religious Affiliation of Research Participants

RELIGION	SCHOOL 1	%	SCHOOL 2	%	SCHOOL 3	%	TOTAL	TOTAL%
Islam	60	97.77	46	93.88	62	96.88	168	96.00
Christianity	2	3.23	3	6.12	2	3.12	7	4.00
Total	62	100	49	100	64	100	175	100

Source: Data collected for main study.

Collected data for item 5 on the personal data section of the research instrument presented in table 4.2, showed that majority of the participants in the present study were Muslims. The same pattern was obtained for pilot study sample, and also tended to conform to the observable pattern of religious affiliation for people in the area studied.

Items 4, 6, 7 and 12 on the personal particular section of the research instrument were all related to ethnicity. Item 4 on respondents own tribe; item 6 for respondents' fathers tribe, item 7 on respondents' mothers' ethnicity and item 12 enquired about the language of communication at home and school apart from English language. Obtained data on these items are presented in tables 4.3,4.4,4.5 and 4.6

TABLE 4.3

Participants' Own Ethnicity

Ethnic Group	School 1	School 2	School 3	Total	Total %
Hausa	54	43	53	150	85.71
Fulani	3	3	6	12	6.86
Yoruba	2	1	2	5	2.86
Sigbo	1	1	1	3	1.71
Others	2	1	2	5	2.86
Total	62	49	64	175	

Source: Data collected for main study.

TABLE 4.4

Participants' Fathers' Ethnicity

Ethnic Group	School 1	School 2	School 3	Total	Total %
Hausa	54	43	53	150	85.71
Fulani	3	3	6	12	6.86
Yoruba	2	1	2	5	2.86
Igbo	1	1	1	3	1.71
Others	2	1	2	5	2.86
Total	62	49	64	175	100.00

Source: Data collected for main study.

TABLE 4.5

Participants' Mothers' Ethnicity

Ethnic Group	School 1	School 2	School 3	Total	Total %
Hausa	52	42	47	141	80.57
Fulani	4	4	12	20	11.43
Yoruba	3	1	2	6	3.43
Igbo	1	1	1	3	1.71
Others	2	1	2	5	2.86
Total	62	49	64	175	100

Source: Data collected for main study.

TABLE 4.6

Language Spoken at Home and School Apart from English Language

Ethnic Group	School 1	School 2	School 3	Total	Total %
Hausa	55	45	59	159	90.86
Fulani	2	1	1	4	2.29
Yoruba	2	1	2	5	2.86
Igbo	1	1	1	3	1.71
Others	2	1	1	4	2.29
Total	62	49	64	175	100.00

Source: Data collected for main study.

Data on ethnicity on all four items seam to have tallied fairly well as could be seen from the four tables. Apart from data on Mother's ethnicity where Fulani had up to 11.43 percent for overall sample, Hausa was the ethnic background of majority of participants in the present study. The slightly higher percentage of Fulani mothers compared to Fulani fathers was held as indicating a pattern of inter-marriage between Hausas and Fulanis, mostly in a uni-model direction: Hausa men marrying from Fulani. On the whole, data on participants' ethnicity was held as highly surprising considering the fact that Sokoto is often considered as a predominantly Fulani town.

Items 8 and 9 sampled data on participants' parents' highest educational qualification. Item 8 focussed on fathers' highest educational qualification, while item 9 examined mothers' highest level of education. Obtained data on these items are presented in tables 4.7 and 4.8

TABLE 4.7

Fathers' Highest Level of Educational Qualification

Level of Educational Qualification	School 1	School 2	School 3	Total	Total (%)
M.Sc., MA, Ph.D.	5	8	6	19	10.86
B.Sc., BA, HND	8	13	829	29	16.57
ND, NCE, Admin. Cert.	9	10	10	29	16.57
Sec. Sch. Grade II	12	10	10	32	18.29
Primary Education	14	5	18	37	21.14
Quranic Education	14	3	12	29	16.57
only	0	0	0	0	0
Others					
TOTAL =	62	49	64	175	100.00

Source: Data collected for main study.

TABLE 4.8:

Mothers' Highest Level of Educational Qualification

Level of Educational Qualification	School 1	School 2	School 3	Total	Total (%)
M.Sc., MA, Ph.D.	2	4	1	7	4.00
B.Sc., BA, HND	3	5	3	11	6.29
ND, NCE, Admin. Cert.	9	4	1	14	8.00
Sec. Sch. Grade II	13	5	18	36	20.57
Primary Education	9	11	13	33	18.86
Quranic Education	25	20	28	73	41.73
only	1	0	0	1	.57
Others					
TOTAL =	62	49	64	175	100.00

Source: Data collected for main study.

Data on participants parents' education presented in tables 4.7 and 4.8, seems to suggest a very high level of education for participants parents particularly paternal parent, where obtained level was 62.29 percent for secondary education and above. Although Sokoto is a University town with at least four other tertiary institutions, the obtained data was considered surprising particularly in view of the fact that Sokoto State is classified among the so-called "educationally less developed States".

Finally, items 10 and 11 on the personal data section of the research instrument focussed on parents' occupation. Obtained data are presented in tables 4.9 and 4.10.

TABLE 4.9

Participants' Fathers' Occupation

Type of Occupation	School 1	School 2	School 3	Total	Total (%)
Civil Servant	25	34	24	83	47.43
Military Personnel	9	2	4	15	8.57
Farming	11	6	16	33	18.86
Private Business	12	6	20	38	21.71
Others	5	1	0	6	3.43
TOTAL =	62	49	64	175	100.00

Source: Data collected for Main Studies.

TABLE 4.10

Participants' Mothers' Occupation

Type of Occupation	School 1	School 2	School 3	Total	Total (%)
Civil Servant	4	9	6	19	10.86
Military Personnel	0	0	0	0	0
Farming	13	2	10	25	14.29
Private Business	1	0	0	1	.57
Others	44	38	48	130	74.29
TOTAL =	62	49	64	175	100.00

Source: Data collected for Main Studies.

Data collected on parents' occupational status presented in tables 4.9 and 4.10 were generally similar for all schools. For paternal parents, many were civil servants with other significant percentages in private business and farming. For mothers' occupational status, obtained data were generally a one sided affair with many students indicating that their mothers were simply full-time housewives. The pattern of parents' occupational status seems to be more representative of the observable situation on the ground compared to obtained data on parents' highest level of education.

In summary, demographic data on participants in this study suggests that most of them were predominantly in their late adolescence while in terms of ethnicity majorities were of the Hausa-Fulani. Also, data seems to indicate that many of them were children of civil servants resident in Sokoto township, although a sizeable number were most likely from the rural areas of the state where agriculture is the main occupation. These patterns also seem to be the same for all the schools in the present study. On the whole, demographic data for this study seems to suggest that the generality of the findings of this study would be mostly relevant to adolescent Hausa-Fulani students at the Senior Secondary II level.

4.3 Hypotheses Testing

There were four null hypotheses tested in this study. Each null hypothesis focused on one major research variable. Results of analyses are presented separately for each hypothesis, followed by some brief comments. Full discussions of the results are made in a separate section later in the chapter.

HO1: There is no significant difference between the post test mean scores of the treatment and control group on measures of Social Information Processing Skills (SIPSS).

Data for this null hypothesis were analysed with the "t" test statistics for independent samples. Results of analyses in this regard are presented in table 4.11.

TABLE 4.11:

Means, Standard Deviations and "t" Value of Post test Scores of Treatment and Control Groups on SIPSS.

Group	(n)	$(\overline{X})$	SD	DF	"t" Value
Treatment	105	26.029	3.545	167	3.863
Control	64	12.422	1.179		
TOTAL	169				

*NB: * =p < 0.05*

From results of analyses presented in table 4.11, the null hypothesis 1 was rejected. This means that the posttest mean SIPSS scores for the two groups were not equal. The mean score for the treatment group was significantly higher than that of the control group. The obtained difference seems to be due to treatment effect.

HO2: There is no significant difference between the post test mean scores for the treatment and control groups on measures of Social reasoning and interpersonal Understanding (SRIU).

To test hypothesis 2, the "t" test statistic for independent samples was used. The results of the analyses are presented in table 4.12.

TABLE 4.12

Means, Standard Deviation and "t" Value of Post test Scores for Treatment and Control Groups on SRIU.

Group	n	$\overline{(x)}$	SD	Df	"t" Value
Treatment	105	20.314	4.832	167	2.313*
Control	64	12.719	1.327		
TOTAL	169				

NB: *P<0.05

Based on results of analyses presented in table 4.12, null hypothesis 2 was rejected. This means that the posttest means scores for the treatment and the control groups were not equal. The treatment group had a significantly higher posttest mean score on measures of social reasoning and interpersonal understanding, and this difference seems be attributable to the treatment sessions conducted for the treatment group.

HO3: There is no significant difference between the post test mean scores for the treatment and control groups on the personal social and Psychological problems Index (PSPPI).

Analysis of data for this null hypothesis was conducted with the "t" test statistics for independent samples. Results of analysis were presented in a table 4.13.

TABLE 4.13:

Means, Standard Deviation and "t" Value of Post test Scores for Treatment and control Groups on PSPPI.

Group	n	$\overline{X}$	SD	"DF	t" Value
Treatment	105	11/448	3.234	167	-2.831*
Control	64	17.938	1.592		

*NB: *P<0.05.*

Results of analyses in table 4.13 above led to the rejection of null hypothesis 3, implying that the post test mean scores for the treatment and control groups on PSPPI were not the same. The treatment group had significantly lower posttest mean score on PSPPI compared to the control group. Since lower scores on this variable suggest greater confidence in an individual's ability to solve his personal, social and psychological problems, this result was interpreted to mean that the treatment group now have more confidence in their ability to tackle their real life problems compared to the no treatment group. That is, treatments seem to have resulted into increased sense of self-confidence and personal agency to the treatment group compared to the control group.

HO4: There is no significant difference between the posttest means attitude score for the treatment and control groups.

Because attitude was considered as a none normally distributed variable thereby violating one of the conditions for using "t" test, null hypothesis 4 was

analysed with the Mann-Whitney U test instead of the "t" test. Results of analysis with the said statistics are presented in table 4.14

TABLE 4.14

Means, Standard Deviation and "t" Value for Post test Scores, for treatment and Control Groups on ATSPS.

Group	Sample Size	Median	W
Treatment	105	17.000	6216*
Control	64	32.500	

NB: *= P<0.05.

Null hypothesis 4 was rejected at the 95 percent confidence interval based on results of analyses with the Mann-Whitney "U" test. This implies that the post-test means attitude scores for the treatment and control groups were not equal. The treatment group had a significantly lower post-test mean attitude score compared to the control group. Since lower scores on this variable imply less negative attitudes towards social problem solving, the obtained result means that treatment has brought about significant reduction in negative attitudes for the treatment group compared to the control group.

4.4 Summary of Findings

The findings of this study can be summarised as follows:-

1) There is a significant difference between the post test mean scores for the treatment and control groups on measures of SIPSS and SRIU. The

treatment group had much higher posttest mean scores on all SIPSS and SRIU factors. This means that treatment had a positive effect on these research variables since an average member of the treatment group had acquire more of the skills for these variables compared to the no treatment group.

2) On the other hand, the treatment groups obtained significantly lower post-test mean scores on PSPPI and ATSPS. This means that treatment led to significant reductions on these variables for the treatment group. Since items on these variables were considered negative in this study, it means that treatment was effective in reducing negatives attitudes towards social problems solving as well as the number of items on the real life personal social and psychological problem index.

3) Results of analyses for treatment effectiveness revealed that treatment was most effective on attitudes where effectiveness was up to 72.99 percent and for social information processing skills (SIPSS), where treatment effectiveness was estimated as 60.85 percent. On the other hand, treatment was least effective on measures of SRIU with effectiveness at 41.77 percent.

4) Results of factor analyses using R correlation matrix, revealed that post test performance was least affected by intelligence or age, because even though pre-test factor loading showed significant correlation between SPM and virtually all variables in this study, post test factor correlation were low and predominantly negative. This was held as indicating that post-test difference is obtained scores between the treatment and control groups

were not as a result of superior intelligence in favour of the treatment group, but as confirming treatment effects.

5) Among factors, AST obtained the highest level of treatment effect size (i.e. appendix G) as well as the highest loading on the post test correlation matrix (i.e. appendix K). This was held as suggesting that the ability to think about as many possible solutions to social problems situations as possible is perhaps the best predictor of social cognitive competence among senior secondary II students in male boarding schools within Sokoto metropolis.

These findings are discussed below.

4.5 Discussion of Findings

The findings of this study have confirmed all the assumptions for this study, and have also provided intriguing answers to all the questions and hypotheses raised at the initial stages of the present study. These findings are discussed below for each of the four findings.

There is a significant difference between the post-test mean scores of the treatment and control groups on measures of SIPSS.

This finding has at least two implications. On the one hand, the low post test mean scores obtained by the control group suggests that some member of this group were experiencing deficits in social information processing skills particularly if assessed from their responses to hypothetical formulations of real life social problems. While the significantly higher post test mean score implied that treatment has resulted into increases in these skills for this group especially

because the treatment group itself like the control, was equally experiencing such deficits before treatment sessions commenced.

Results for both the pilot and pre-test data for main study suggest that deficits, using this approach, manifest themselves both qualitatively and quantitatively. Qualitative deficits for SIPSS manifested themselves in terms of failure to identify real or root causes of hypothetical social problems and selecting less optimal solutions to hypothetical social problem situations. Quantitative deficits showed up in form of poor ability to identify all or any significant number of possible causes, consequences, alternatives or solutions and difficulties associated with solutions. As could be seen from Appendix E, the average post-test mean score on all SIPSS factors obtained by the control was 2 points and below. This means that they were only able to give one cause, consequence, possible source of information, solution and possible difficulty associated with these solution based on their responses on the hypothetical social problems. The average score of 2 on RCSP also means that they were unable to identify the main cause of the social problem affecting the main character in the hypothetical problem situation.

Even though these deficits were assessed largely on responses to hypothetical social problems, it is plausible to suggest that students experiencing such deficits may also face similar difficulties in real life social problem solving situations. That is, such students are likely to fail to identify real causes of the problem they are facing. They may also be unable to determine all or any significant number of possible alternative causes of action and hence may generally fail to solve many real life personal, social and psychological problems.

In addition to the low means scores obtained by the no treatment group, a further support for this position based on collected data in the present study, is the higher post test mean score on PSPPI obtained by the same group. This seems to suggest that students who lack these SIPSS skills (or have very low scores on them), also tended to rate themselves as experiencing many real life personal social and psychological problems. Furthermore, the present findings are conformity with earlier ones such as Tolan et al., (1990), Rubin and Kraismor (1984) (cited in Vasta et al., 1992). They reported that anti-social adolescents tend to have lower ability to generate competent solutions to social dilemma situations, are less competent and have narrower range of coping skills. Dodge, et, al., (1990), Guerra and Slabby (1988) also found strong relationship between biases and deficits in social information processing abilities and behaviour problems among adolescents.

The higher post test means score obtained by the treatment group on the same variable (i.e. SIPSS) means that the treatment has led to increases in students ability to solve social problems presented in hypothetical problem formulations compared to the control group. The means and standard deviations on post-test SIPSS revealed both qualitative and quantitative difference between treatment and control groups. Students in the treatment group now showed greater ability to think quantitatively (such as giving between 3-4 possible causes, consequences, and sources of information, alternative or solutions to hypothetical social problems). Qualitatively too, most members were able to identify the real cause of the social problem afflicting the main character in the hypothetical problems. They also made better choices of alternative course of action.

Although these increases were obtained mainly on hypothetical social problems, it is reasonable to suggest that such increases have real life significance. That is, individuals who have acquired such significant increases on SIPSS skills are likely to transfer these skills in solving their real life personal and social and psychological problems. And hence may generally be more successful at solving real life social problems compared to groups or individuals who have not gained or achieved such increases. This position is considered highly plausible in view of earlier studies such as that by Huesman (1988) who have found increases in ability to generate pro-social solutions to interpersonal dilemma situations and increased capacity for tolerating frustrations. The significantly lower post test mean score on PSPPI was also considered as a demonstrating improved capacity to solve real life personal, social and psychological problems for the treatment group.

There is a significant difference between the posttest mean score for the treatment and control groups on measures of SRIU.

The obtained difference in this regard revealed that the treatment group obtained higher post-test mean score compared to the control group. Since all SRIU factors were also assessed based on participants responses to hypothetical moral dilemma situations, low posttest mean scores obtained by the control group means that an average member of this group provided less qualitative responses. An examination of the means and standard deviations on all factors within this variable showed that an average member in this group obtained only 2 scores on all SRO's and 3 scores on all LSRIUs. This means that the typical social reasoning orientation or judgement displayed by members of group included refusing to

accept responsibility for one's mistakes, refusing to apologise when one is the cause of another persons' problems. The average mean score of 3 on all LSRIU factors mean that an average member in the control group obey rules or co-operate with others mostly because of favours done in the past or in expectation thereof. Obtained responses in this regard include "I will not tell the security men because of the favours he has done for me", "because it is not good to lie to one's parents", e.t.c. Also, lower forms of reasoning particularly fear of physical consequences of one's action (e.g. in case something happens to me in the pond") were not uncommon.

Although these responses were obtained on hypothetical moral dilemma problems, the real life implications are held to be similar to that of low scores on SIPSS. That is, low scores depict susceptibility to difficulty in real life interpersonal social and moral conflict situations. The credibility of this standpoint is made more glaring in view of earlier findings, such as those of Guerra and Slabby (1990), who found limited moral reasoning skills in anti-social children and aggressive delinquent adolescents. The work of Kohlberg (1978) and his colleagues, which also showed that students in the lower moral reasoning stages tended to be over represented in behaviour, disordered group (such as cheating in exams.).

The fact that deficits in SRIU factors tended to go along with deficits or low scores on SIPSS factors, particularly on the post test correlation matrix (appendix G) was held as supporting the position by Guerra (1993) and Fenton (1978). That the best approach to assessing and promoting social competence should combine competencies in social reasoning and social problem solving skills. The range of deficits for SRIU and SIPSS obtained for all the schools involved in the present

study (40-51 percent), was also within the range of distribution for Isolates and Neglectees in Command Secondary School in Nigeria obtained by Mukolu (1997).

On the other hand, the significantly higher post test mean score on the same variable (i.e. SRIU) obtained by the treatment group implies than on the average, treatment has brought about increased and enhanced ability to reason at more qualitative points of view on hypothetical moral dilemma situation. A close observation of the post test mean score shown in Appendix F reveals that on the average, this group obtained a minimum of 3 points on all SRO's and 4 marks on all LSRIU's, which are higher than what the control group obtained.

The specific responses to the hypothetical moral dilemma made by members of the treatment group in their post test assessment instrument, reveals clear improvements or more qualitative responses on all SRIU factors compared to the control group. With regards to SRO for example, a typical member of the treatment group now showed more tendency or willingness to accept responsibility for one's actions. Examples of such responses include "I will not feel bad if they punish me for going to the pond" – "because what I did was wrong", "Yes I will tell them the truth", and some have even indicated willingness to apologise and promising not to do it again. Responses on all 3 LSRIU's also witnessed such remarkable improvements. Most participants now seem to recognise real existence of other person's perspectives (such as "my parents have the right to punish me when I disobey them, because it is their responsibility to guide me", I shouldn't have disobeyed them in the first place").

Although these improvements in SRO and LSRIU were obtained mainly on participants' responses to hypothetical moral dilemma situations, it is reasonable to

expect such increases may also have real life implications in the lives of such individuals. In the first place, these increases in SRIU factors might have also contributed to the significantly lower post test mean score on PSPPI because both SIPSS and SRIU factors tended to have the same relationship with PSPPI as shown in both the pre-test and post-test correlation matrices (Appendix H & I). Moreover, many earlier findings tend to justify this position. For example, Arbuthot and Gordon (1986) reported advances in moral reasoning stages and improvements on multiple behavioural measures (cited in vasta, et al, 1992). Also, Guerra (1989) found improvements in moral reasoning and increased awareness of the other's perspective (cited in Guerra 1993).

There is a significant difference between the post-test mean attitude scores for the treatment and control groups.

Results of analyses in this regard revealed that the treatment group had a much lower post-test mean score on this variable, compared to the control group. As was pointed out in chapter three, all the items in this section of the research instrument focussed mainly on feelings, attitudes and beliefs (including socio-cultural believes), considered to be inimical to social problem. Thus, the finding on this hypothesis means that treatment has led to significant reductions in the number of negative attitudes towards social problems solving for the treatment group while the control group still dwell in those negative attitudes. Treatment effectiveness for this variable was the highest for all variables, indicating that these changes in attitude were really significant.

The real life implication of adopting positive attitudes towards social problem is generally well documented. Most findings (such as Nezu, 1985; Heppener and Peterson, 1982; Hanson and Mintz; 1997), tend to support the fact

that positive self-appraisals of students own problem solving capacities have significant implications for real life psychological health. Also, since items on this section of the research instrument also included questions on predestination, superstitious beliefs and adages, the present finding seems to indicate that such socio-cultural factors may have some influences on social problem solving behaviour in particular and mental health in general.

There is a significant difference between the post-test means scores obtained by the treatment and control groups on the PSPPI

Results of analyses on this variable indicated that the treatment group had a much lower mean score at post-test on his variable (i.e. PSPPI), compared to that of the control group. This means that the treatment group tended to rate themselves as having less personal social and psychological problems after treatment sessions, while the control group maintained very high ratings. These findings seem to point out the fact that treatment or increases in SIPSS and SRIU tended to correlate negatively with PSPPI, meaning that treatment brought about reduction in the number of such items.

For real life situation, this finding was taken as indicating, at the very least, that increases in an individual's ability to solve hypothetical social and moral dilemmas, tend to bring about some level of reductions in negative self confidence and low sense of personal agency. That is, increases in social cognitive skills tend to increase self-confidence and sense of personal agency in handling personal social problems for the treatment group.

However, in view of the earlier discussions on increases in SIPSS and SRIU, and particularly the related findings cited in those discussions, it seems

more reasonable to argue that the present finding is more than mere increases in self-confidence or sense of personal agency. It is suggestive of some level of improvement in overall social competence for the treatment group.

4.6 Implications of the Findings for Guidance and Counselling in Nigeria

One of the important implications of the findings of this study for Guidance and Counselling in Nigeria is its application or practical significance for prediction and prevention. Since an individual's cognitive style and skill are often considered as bases to focus prediction and prevention of anti-social behaviours (Tolan & Loebar, 1993), low scores on SIPSS and SRIU could be considered as bases to mount prevention programmes even before such deficits grow into full blown problems. In this way, it will be possible to curb many of the mal-adjustment problems and failures to achieve life goals among secondary school students in Nigeria as noted by the NPE 1981 and many other researchers at an early stage when even the students themselves are not aware of such deficits. This is particularly necessary because current literature seem to concur that preventive problems particularly for anti-social behaviours are to be preferred (Kazdin, 1993; Tolan & Loebar 1993; Davis & Tolan, 1993).

Even though it has not been possible to estimate the clinical effectiveness of the treatment modules constructed for this study for such preventive purposes, it is strongly believed that they can be used in such efforts. Particularly, it can be used for male boarding schools within Sokoto metropolis where there is evidence of their treatment effectiveness.

The implications of the present findings for remedial Counselling tend to be more apparent. The treatment modules have been found to produce significant differences for individuals considered to be experiencing acute difficulties in social problems solving skills with moderate effects sizes (as could be seen in appendix G). This is considered particularly important because reviews in earlier chapters tend to indicate that there is virtual absence of locally constructed or validated models on social problem solving skills at present, in this country. With the construction of the present modules, counsellors particularly in male boarding schools within Sokoto Metropolis, have at least something they could have for a start.

Furthermore, it is hoped that Counsellor preparation programmes particularly in the Universities would in cooperate extensive social problem solving training in their curricular. Student counsellors should be made to have practicum session on how to apply social problem solving skills to related problems such as drug abuse, academic problems, cultism, inter ethnic and religious problems to mention just a few.

4.7 Summary

Analyses on data collected for the present study was presented in this chapter. Results of analyses led to the rejection of all four null hypotheses formulated for the present study. This means that significant differences have been found on the post-test means scores on all variables between the treatment and control group. The treatment group obtained significantly higher post test mean scores on measures of social information processing skills and measures of

social reasoning and interpersonal understanding, but they obtained lower post test means on PSPPI and ATSPS. Although assessment of these differences were largely based on responses to hypothetical social and moral situations, discussions of these findings seem to indicate that the obtained results have significant seal life implications. In particular, lower scores on SIPSS and SRIU were held as indicative of high susceptibility to different problems in real life situations particularly those that relate to personal, social, psychological and interpersonal relationships. On the other hand, higher scores in these variables are believed to be suggestive of improved capacity to solve such problems and hence the likelihood of enhanced social competence for research participants.

CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

Review of background literature at the preliminary stages of the study revealed that although problem solving or management is frequently cited as a fundamental goal of Counselling (Heppeners & Fraier; 992, Egan; 1986) much still need to be done to increase the efficacy of existing social problem solving models. Moreover, on the local scene, there seems to be significant dearth of both assessment and intervention models (either constructed or validated) for social problem solving skills. The present study was consequently conducted to determine the effectiveness of social problem solving skills programme in the treatment of social cognitive deficiency among a sample of senior secondary II students within Sokoto Metropolis.

The specific objectives of this study were to determine whether treatment could:

1) yield any positive results in the treatment of deficits in social information processing, social reasoning and interpersonal understanding skills, between treatment and no treatment groups;
2) Lead to significant reductions on post test mean scores on personal social and psychological problems index; and
3) Lead to significant reductions in negative attitudes towards social problem solving skills.

Because assessment instruments on social information processing skills and social reasoning and interpersonal understanding skills seem not to be a locally available, it was considered necessary to construct a social cognitive assessment test to for the present study. Construction of the two (i.e. treatment modules and assessment instrument) were achieved in three major stages. The first stage involved extensive review of existing literature to select the most appropriate contents and items to be included in these instruments. The next stage involved vetting the constructed instrument and treatment modules by specialists in Guidance and Counselling as well as other related fields.

After these preliminary stages were concluded, the two instruments were pilot tested on a sample of senior secondary II students in a day secondary school within the proposed study area. This step enabled the estimation of various other measures of reliability and validity for the constructed materials. Validity of the treatment modules was established by comparing the scores of a pilot study treatment and no treatment groups on all four-research variables. Results of this effort revealed that the mean scores obtained by the pilot study treatment group were significantly different from the mean scores of the pilot study control group at 95 percent confidence internal using inferential statistics. The pilot study treatment group obtained significantly higher mean scores on SIPSS and SRIU while it also had lower mean scores on PSPPI and ATSPS.

For the treatment test, three types of reliability coefficients were established. These included scorer reliability coefficients, parallel forms or equivalent form reliability estimate. Intra scorer reliability was estimated by two different judges who gave 90 and 92 percents respectively indicating agreement with the marks

given by the researcher on students' responses to the assessment test. Parallel forms (i.e. coefficients of equivalence) obtained on the pilot tests were 0.93, 0.95; 0.73 and 0.84 for sections B,C,D and E of the parallel forms of the instrument. All the reliability coefficients were found to be significant at the 0.05 level. Construct validity was estimated by comparing mean scores of individuals on the tests, and their total scores on the Raven's Standard Progressive Matrices. Obtained validity estimates ranged from 0.50 to 0.52 for the different sections of the instrument for both tests.

Results of the pilot study provided evidence for the feasibility as well as, the overall relevance of the study. Four null hypotheses were formulated for the main study, one for each of the research variable. These are:-

HO_1: There is no significant difference between the posttest mean scores of the treatment and control groups on measures of social information processing skills (SIPSS).

HO_2: There is no significant difference between the posttest mean scores for the treatment and control groups on measures of social reasoning and interpersonal understanding (SRIU).

HO_3: There is no significant difference between the posttest mean scores for the treatment and control groups on the personal, social and psychological problems index (PSPPI).

HO_4: There is no significant difference between the posttest means attitude score for the treatment and control groups.

The research design adopted for the study was the proxy-pre-test-post-test quasi-experimental design. This design was considered most appropriate because

the present research examined cause effect differences with two already formed groups thereby precluding true random selection and allocation to experimental conditions. Four possible compounding variables associated with the adopted designs were identified (by Heppener & Kivligan, 1992; and Cherulnik, 1983) as sensitising effects and of pre-testing, mortality, maturation and improper group composition effects. All these were controlled for as follows:-

Sensitizing effect of pre-testing was controlled for by designing two parallel forms of the research instrument, one for pre-test and the other for post test. Including a larger sample in the treatment group checked mortality effects. Maturation and improper group composition effects were controlled for by the statistical analyses of the collected data. The pre-test scores of all the school involved in the present study as well as, their total scores on Raven's Standard Progressive Matrices were subjected to comparability test using differential methods at 95 percent confidence interval for all research variables. Non significant differences were obtained in all the five tests in this regard suggesting that the groups were similar. Maturation effect was tested by comparing the pre-test and post-test scores of the control group of all four research variables. No significant differences were found, suggesting that maturation effects were not a serious threat to the findings of this study.

The total sample for this study was obtained from three randomly selected male boarding schools within Sokoto Metropolis. All SS II students in these schools were administered the present instrument and students who obtained up or below 15 marks on SIPSS and SRIU factors were isolated for experimental purposes. This gave an initial sample size of 175 students although at posttest, it

reduced by six students. There were 105 students in the treatment group and 64 in the no treatment group.

The treatment sessions lasted for four weeks and were conducted by the researcher himself. The treatment modules (Appendix A) were the main guides in all the 12 contact sessions for each of the two treatment schools. Treatment sessions typically lasted for 1½ hours in the evening prep hours. English language was the medium of instruction throughout the duration of the treatment period. Participants showed great enthusiasm during all contact sessions and most students participated throughout all the 12 contact sessions.

The posttest assessment instruments were administered two days after treatments sessions had ended. After the post-tests were scored, the obtained data were analyzed using the appropriate statistical analyses and this led to the rejection of all four null hypotheses formulated for the present study. This means that there are significant differences between the post test mean scores for the treatment and control groups on all research variables.

The treatment groups obtained significantly higher posttest mean scores on SIPSS and SRIU factors, and lower post test mean scores on PSPPI and ATSPS. This means that treatment has yielded significant increases in participant's ability to process social information and to reason higher at more qualitative levels of social reasoning and interpersonal understanding, compared to a similar group but which had not received such treatment.

On the other hand, treatment also led to significant reductions on items on PSPPI and negative attitudes for the treatment group, while the control group showed no evidence of any sensitivity to such negative attitudes. Although these

increases were assessed mainly on students own responses to hypothetical social and moral situations, discussion of the findings seem to suggest that the increases have real life implications. Increases in SIPSS, SRIU and reductions in PSPPI and ATSPS were held as indicative of greater ability to solve real life personal, social and psychological problems. On the other hand, low scores on SIPSS and SRIU and high scores on PSPPI and ATSPS were considered as suggestive of susceptibility to real life personal, social and psychological problems as well as other interpersonal social problems.

5.2 CONCLUSIONS

In view of the findings from hypotheses testing and discussions of overall findings, it is hereby concluded that:-

1) A significant percentage of senior secondary schools within Sokoto metropolis can be described as socio-cognitive deficient especially if measured by their responses to hypothetical social and moral situations. Deficits in these skills also tend to correlate positively with high self-ratings on the personal, social and psychological problem index.

2) The group of students who have received treatment based on the constructed modules obtained significantly higher post test mean scores on measures of social information processing skills compared with a similar group but which did not receive such treatment. This means that treatment has significantly resulted into better ability to solve social problems presented in hypothetical situations.

3) The treatment group also obtained significantly better post test mean scores on measures of social reasoning and interpersonal understanding based on assessment of their responses to hypothetical social and moral dilemma situations, compared to the no treatment group. This means that treatment has led to higher and more qualitative levels of social reasoning orientations and levels of interpersonal understanding for the treatment group compare to the treatment group.

4) On the other hand, the treatment group obtained a significantly lower post test mean score on personal, social and psychological problems index. That is, treatment has resulted in significant reduction in the number of items on the personal, social and psychological problems index which participants considered as problems in their lives compared to a similar group but which did not receive such treatment.

5) The treatment group obtained significantly lower posttest mean attitude score compared to the no treatment group. That is, treatment has brought about significant reductions in the number of negative attitudes towards social problem solving compared to the control group.

6) The main objective of this study (i.e. to construct relevant social problem solving skills) seems to have been realized. The constructed treatment modules which served as the main guide for treatment sessions seems to be a significant cause of the observed differences between the treatment and control groups.

5.3 Recomedations

Based on the findings, discussions and conclusions made in the present study, some recommendations were considered relevant and are thus made:

1) There is need for future research in this area on female samples. This is because data in the present study does not include female samples hence there is a gap to be filled. This is particularly so because earlier studies and reviews such as Guerra (1993) have also raised the same issue.

2) It is also hereby recommended that a replication study be conducted. Such a study should have less number of students and should involve more ethnic groups. Other studies should also be conducted to focus specifically on the social problem solving behaviour of students in the rural areas. Though many of the participants in the present study indicated that their parents were farmers, suggesting that they were from rural areas, the fact still remains that all the schools in the present study are was located in an urban centre.

3) There is the need for Sokoto State Government to be more concerned about the relatively high prevalence of social cognitive deficiency among her student population. The fact that acute levels of such deficits ranged between 40-51 percent in the schools involved in the present study suggests the need for urgent intervention measures to remedy and prevent them. Already, many countries in the other parts of the world have instituted programmes in their school systems design to curb and prevent deficits on the one hand and to enhance the development of similar skills, on the other.

The Venezualan experiment, the Somerset thinking skills programmes in Britain and the project to enhance co-effective learning (PEEL) (Watts 1992, Macguinne, 1990) are good examples of such programmes.

4) Parents and especially teachers should encourage students to acquire problem-solving skills. For example they can arrange evening classes to teach students specific social problem-solving skills such as how to find solutions to hypothetical problems, possible difficulties to these solutions, to mention just a few. Similarly, discussions in the classrooms and outside should also be used to teach students better attitudes toward solving social problem. The indiscriminate use of adages, unjustified adherence to social cultural beliefs should be discouraged henceforth in the schools.

5) Finally, it is also hereby recommended that the Counseling Association of Nigeria, Counseling Units in the Federal and State Ministries of Education and Professional Counselors individually and ion group should design specific modules (in for of pamphlets, video and audio tapes), on how to solve selected types of problems. For better results, such pamphlets or tapes should be targeted to specific clients such as uneducated adult males, working class male and Females, women in Purdah, Girls and boys in secondary schools and so on.

5.4 Limitations

In view of the conclusions, implications and particularly the recommendations made on the findings of this study, it was considered necessary to point out the observed limitations of the study, which control measures have not adequately taken care of.

First and foremost, it needs to be restated that the assessment procedur for social cognitive skills adopted for the present study emphasised what might b called the "internal" or even "the intellectual" criteria to the neglect of the externa criteria. External criteria such as rating by parents, peers and other significan persons in the lives of such individuals have not been fully incorporated into the present study. Although the theoretical backings for the present approach are enormous particularly in view of findings such as those by Moffit, et al., (1981), and Quay (1987) to the effect that low intelligence (IQ) in males alone increases the risk of anti-social behaviorist the fact still remains that evaluations of deficits and skills in the present study were based largely on responses to items in the social cognitive assessment test.

To make matters more difficult, none of the schools involved in this study had established Guidance and Counselling Centres, hence it has not been possible to look through participants' Cumulative Records (CR) to confirm (or disconfirm) the deficient status assigned to them. Even though discussions with some teachers in all the affected schools about the behaviours of some of students in the present study confirmed that participants tended to be "unfriendly ", "unsociable" and "trouble-some", yet future researches could include such external criteria in their analyses to ensure stronger conclusions. An another serious limitation of this study is the non-inclusion of female students. This obviously limited the generalizability of the findings of the study. It is for example not possible (based on the findings of the present study), to state the type of alternatives or solutions that female students would have given to their hypothetical problems. Also, including a female sample could have enabled us to compare the social reasoning orientation (SRO'S) of

male and female students and the differences (if any), in their level of reasoning compared to male students. This is particularly so in view of the possibility of such differences which earlier studies cited in chapter 2 seem to suggest.

Another limitation of this study has to do with the one-shot research design adopted for the present study. This type of design does not say much about the relative efficiency of the new modules compared with other types of competing models. It is hoped that future studies would use designs that would enable us make such comparisons.

Finally, although English language is the medium of instruction in the Nigerian school system, and the language used in assessing cognitive skills as well as during the treatment session, it is not the mother tongue of any of the participants. In fact, there seemed to be some evidences that not all the students have excellently mastered the language. Thus, another limitation of the present study is the probable limitation imposed by this bilingualism inherent in our school system, which for some researchers (such as Suleiman, 1984) has the tendency to limit students' overall ability.

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APPENDIX A

A. GENERAL AIMS OF THE PROGRAMME

The general aims of this programme are to:-

1. enhance the social problem solving skills of all the participants;
2. educate the participants about the qualities and characteristics of good problem solvers;
3. Sensitize the participants about the factors that may inhibit their abilities at social problem solving;
4. Modify some socio-cultural beliefs that may lead to negative attitudes (in the participants) towards social problem solving;
5. Enhance the social reasoning, social perspective taking, self-understanding and self control skill;
6. Encourage the participants to become independent problem solvers.

A detailed description is given below for all the modules.

MODULE 1: DEFINITION OF PROBLEM SOLVING AND CHARACTERISTICS OF GOOD PROBLEM SOLVERS.

Class: SS II: Time: 1.10hrs

OBJECTIVES:

At the end of this module, the participants should be able to:-

1. Define the term problem solving
2. Differentiate between different types of problems
3. State the qualities of good problem solvers.

The instructor defines problem solving as "thinking about the obstacles (i.e. problems) to one's progress and figuring out or planning how to overcome them". Social problem solving refers to

process of defining and identifying causes and consequences of social problems, generating solutions and determining difficulties to be faced in implementing those solutions and finally developing an action plan to solve the problems. From this definition, the major steps/or components of social problem solving can be identified as:-

1. Identifying and defining social problems.
2. Identifying their causes
3. Determining both the negative and positive consequences that would happen to self and others as a result of the problem.
4. Generating solutions or alternatives to solve the problem(s).
5. Identifying all possible sources of information about the problem.
6. Choosing the best or most feasible among all the alternatives or solutions.
7. Designing and implementing an action plan.

STEP TWO:

Mention that in order to further understand what is meant by problem solving, it is necessary to define the word "Problem".

- a person is said to have a problem when he wants something but does not know what action (or series of action) he can perform to get it.
- State however that some problems are more difficult to understand and to solve than others.
- This can be represented as follows:-

Level - 1: Solver already knows solution

Level - 2: Solver already knows rules for obtaining solution.

Level - 3: Solver learns correct solution during the task.

Level - 4: Solver has to select and evaluate the rules/operations for obtaining solution.

Level - 5: Solver has to reformulate the problem and produce some unusual method for obtaining solution.

Level - 6: Solver has to realize that problem exist.

- Explain to the students that problems can be specific or general.

  e.g. specific problem – how do I ensure that I pass this forth coming exam? How can I resolve this misunderstanding with my friend? General problem - how do I ensure that I pass all my exams in the future? How can I maintain a good relationship with my friend all the time?

Steps Three and Four

Discuss the qualities of good problem solvers.

- Explain that good problems solvers are not super human beings – they have simply learn a lot about the right attitudes, methods and techniques of solving problems.
- Therefore, whoever want to be a good problem solver, must adopt the following attitudes.

1. **Positive Attitude**: have a strong belief that problems can be solved by persistent analysis avoiding the following types of statements "there is nothing I can do". The solution is helpless. "It is too difficult for me".
   - have more confidence in your ability to solve problems – don't give up easily.

2. **Concern for Accurate understanding of the problem.**
   - Good problem solvers take great care to understand the facts and relationships in a problem, understand it as accurate as possible.
   - Poor problem solvers often miss the problem because they don't take time to understand it.

3. **Breaking problems into parts**
   - Good problems solvers often break problems into smaller parts or steps.
   - They attack a problem from the part that they understand it most until they understand it fully.
   - Poor problem solvers attempt to sole the whole problem at once.

4. **Avoiding Guessing**.
   - Good problem solvers do not guess answers, they work problems from beginning to the end in small careful steps.

- Poor problem solvers jump into conclusion even before they analyse it or take a decision in the middle of the problem solving process.

5. **Activeness in Problem Solving**

- Good problem solvers do many things as they try to understand and solve problems e.g. create mental pictures of the problem, ask themselves questions, make diagrams, talk to themselves, etc.

Step Five: Evaluation

Ask participants the following questions to summarise and evaluate the module.

1. What do you understand by the term problem solving?
2. List the seven major components of social problem solving.
3. Briefly explain the fifth and sixth levels of problem difficulty.
4. List the five characteristics or qualities of a good problem solver.

Source: some of this module were adopted from Tharp (1985) Watts, (1992) and Whimbey and Locheed (1982).

MODULE 2: ANALYSING SOCIAL PROBLEMS

OBJECTIVES

At the end of this module, participants should be able to:

1. Describe practical methods that can be used to identify elements of a problem.
2. Identify and explain some practical methods of assessing and understanding social problems.

INTRODUCTION:

The instructor will review the major points of the previous module with particular emphasis on levels of problem, characteristics of good problem solvers and major components of social problem solving.

PROCEDURE:

Step One: Understanding Real or Main Causes of any Given Problem

Introduce the topic by saying that there is a strong relationship between how we understand a problem and how well we solve it.

- thus it is necessary that we first understand what a particular problem means fully before attempting to solve it.
- These can be achieved through the following:

1. Creating a mental image or picture of the problem.

Practical Discussion of the Method: Ask students to imagine what they would do if they find themselves in a big city for the first and they do not know anybody there.

- State that sometimes we do this subconsciously (i.e. not necessarily being aware of it).
- but for better problem solving, we must make conscious or deliberate efforts to "figure out" the various ramifications or "branches" of the problem in our brains.
- Explain that the mind makes use of a variety of these "pictures" or "models" for different problems and sometimes even for a particular problem.
- In daily language for example, we often say "I imagine" I think it looks like".

Step two:

i) Explain that other practical ways or methods that are often used to gain more detailed understanding of social problems includes:-

1. Sentence completion exercises.
2. Brainstorming
3. The 5w-H system

- Explain these in details as follows:-

ii) Explain that sentence completion exercise simply involves completing or supplying an answer to this sentence "My biggest problem is....."

- State that individual must be honest and precise before supplying the answer
- Inform the participants that more elements of the problem could be identified by completing this additional sentence "I also have problems with....." or "Another aspect of the problem is.....". "The main problem in this situation is ....."
- Practice methods with students by asking each student to write the answer to this "My biggest problem last week was....."

- Explain however that sentence completion has a major limitation because sometimes individuals may not know which is their main or minor problem. Therefore, it is advisable to use this method with others to be discussed below:

Step Three:

1. State that brainstorming is a very popular method used by many people.
   - It is suitable for many problems, and at many stages in the problem solving process such as generating alternative solutions and strategies for action.

ii - Explain that brainstorming simply involves generating or bringing out as many elements or aspects of a problem as possible, and writing those ideas down as they come to one's mind.

- Explain the basic rules of brainstorming as follows:

1. Suspend judgement – the value of the ideas can be sorted out later.
2. Aim for quantity
3. Let the mind wander-wild and quickly ideas can turn out to be winners.

iii) State that after one has exhausted all the possible ideas about a problem, then he can rearrange them in group along certain lines such as the biggest to the smallest or the most serious to the least etc.

iv) Practice brainstorming with the participants using a topic or problem to be suggested by the participants.

Step Four:

Explain that the 5w-H system simply involves asking in relation to any problem the following questions/ What? Who? Where? When? How?

B. Practice the 5-WH with the following hypothetical personal social problem.

- Aliyu is an SS II student. He lost his father two years ago. His mother is too old and has no money of her own. He determined to continue his study.

1) What is Aliyu's main problem?
2) What is Aliyu's second major problem?
3) Who does the problem affect? Or who and who are affected by the problem?

4) When does the problem began?

5) How would Aliyu solve this problem?

6) What are some of the difficulties Aliyu would face in solving his problem?

Step Five:- Evaluation

1. What is meant by representing a problem
2. Give four examples of practical methods commonly used to define and assess problem.
3. What is brainstorming? List the three basic rules of brainstorming?
4. What does the 5W-IT system stand for? How is it used with regards to defining and assessing problems?

MODULE 3: GENERATING ALTERNATIVE AND DETERMINING OBSTACLES TO SOLVING PROBLEMS.

OBJECTIVES:

At the end of this module, participants should be able to:-

1. define the tem "alternatives" and "solution"
2. identify methods of generating solutions in social problem solving.
3. Describe the basic steps in means-ends analysis and how to use them in solving a personal problem you are currently facing.

INTRODUCTION:

By way of introduction, the instructor will ask the participants the following questions:

1. What does the 5W-H system stands for?
2. What do you understand by brainstorming?
3. Enumerate the basic rules of brainstorming.

PROCEDURE:

Step One: The need to find many alternatives to any given problem.

1. State that understanding, assessing or analysing any type of problems for its own sake is close to useless.
   - the aim or purpose of understanding problems is to formulate or develop solutions to solve them.

- State that sometimes ones the problem is fully analysed or understood, a clear idea of what the solution is become obvious.

2. However on many occasions, finding a solution to a problem even then the problem is fully understood can be very difficult.
   - Therefore, an individual must use or stretch his/her thinking ability to find the best solutions.
   - Explain that the process of finding solutions is very difficult because there are many factors which can affect (i.e. influence) it.
   - E.g. – some people are known to dwell in what is called the "culture of poverty of ideas" – that is, they simply accept the situation they are in, and find it difficult, imagine or think of alternative situations.
   - Others fail to solve their problems because they give only one solution and no more.

Step Two:

1. Explain that the process of finding solution and strategies to problems involves the following basic steps:-
   1. Determining how to tackle a problem (that is identifying the routes of paths to be followed in order to solve the given problem.
   2. Identifying the main goal and subgoals to be achieved.
   3. Finding possible obstacles that would stand in the way of each possible solution or alternative to achieving goals.
2. State that there are two major categories of methods that can be used to achieve the three steps mentioned above. These are algorithms & heuristics.
   - Define algorithms as sets of rules which if followed will automatically generate the correct solution.
   - For example, the rules of multiplication are an algorithm because if followed carefully and correctly will always guarantee a correct solution to the problem. E.g. $2 \times 2 - 3 + 4 = 5$.

- State that algorithms are not very helpful for social problems because there are no established standard answers or solutions to such problems and perhaps there will never be.
- Consequently, for many real life social problems, heuristic search methods are the only available options.
- Define heuristic search as "a critical examination of a given problem and then using the information gained, to solve it.
- Unfortunately heuristics do no guarantee a correct solution because they are only guides or aids in discovery, or identifying possible solutions.
- State that the most popular heuristic search method.

  1. Means – ends analysis.

Step Three:

Define means-ends analysis as breaking problems into subparts and then identifying the subpart which is the main cause of the other subparts first.

- State that in means-ends analysis, focus is on one goal (i.e. end) at a time and then identifying the routes (i.e. means) to achieve that goal.
- The process involves the identification of all possible difficulties to be encountered with regard to each possible alternative.

B) State that one major reason why people fail to solve problems is that they do not explore all the different way or routes which they can use to reach a goal before selecting that which is the best for the given problem.

Step Four: **Practical Demonstration of the Skill**

Discuss means-ends strategy with the participants to assist in mastering the method, with this hypothetical problem.

The Problem: A student named Musa wants to stop coming late to school. He has identified the following as his sub-problems:-

1. Sleeping late in the night
2. Long and congested routes school.

3. Too many early morning engagements.

2) Ask students to develop possible sub goals, such as:

Sub-goals:-

1. Developing a good time schedule
2. Identifying fastest routes to school
3. Minimise early morning engagements.

3) Ask students to identify the sub-means for each sub-goal

Sub-means

1. Stop watching late night movies
2. Stop attending late night discussion
3. Draw a detail time-schedule for the week indicating what, where and when he will be.

4- Ask students to identify some of the obstacles to these routes or sub-mean like:-

e.g. lack of self control to adhere to the time schedule

- Possible distraction from friends etc.
- State that if the problems is solved (i.e. he stops coming late to school) then he will not continue the means and analysis for the remaining sub-problems, but if not, the problems solver will do the same for remaining sub-problems until the problem solved.
- State that planning strategy is very similar to mean-ends analysis.
- The major difference is that in planning all the major means to the sub-problems are analysed and sketched at the same time.
- It is therefore more advantageous compared to the single problem at a time approach.

Step Five: Evaluation questions.

1. What is the purpose of assessing or analysing a problem.
2. What do you understand by the word "alternative"
3. Describe the major steps in means-ends analysis.

4. Why do you think we need to identify many alternatives for any given personal or social problem?

MODULE 4: FACTORS AFFECTING SOCIAL PROBLEM SOLVING

OBJECTIVES:

At the end of this unit, participants should be able to:-

1. List some of the factors that might affect social problem solving.
2. Explain how these factors can affect social problem solving.
3. Identify some ways of limiting the effects of these factors.

INTRODUCTION

Ask participants to list some of the factors which they think might affect social problem solving from their personal experiences.

PROCEDURE

Step One: Forgetfulness

- Memory system: Explain that the human memory system is made up of two major systems.
- Short term memory (STM) information store in it is available to conscious awareness.
- State that although information in the short term memory is the most crucial in problem solving, unfortunately it does not store large information.
- How can these limitations be overcome or improved upon?
- It is not possible to overcome these internal limitations completely because it is part of human nature.
- But we can greatly improve upon them through the following:-

1. Whenever you are trying to solve any problem use your pencil and paper to put down the important steps you want to follow.
2. Write all the important steps and skills about social problem solving (which you will learn somewhere over and over again until you master them.

3. Use images to assist your memory system e.g. a trade and it branches to represent pattern note method.

Step Two: Lack of enough information on the given problem.

- Some problems are more difficult to solve than others.
- To solve difficult problems you need more and more information (or knowledge) about them.
- Solve social problems, some of the information or knowledge about who are the other personal affected by this problem. How would they be affected by the solution I will take? How would the solution fit my social or cultural reality?.
- Inform the participants that there shall be discussed in subsequent meetings.
- Inform the participants that two of the frequent mistakes people make in solving personal and social problems are:-

1. Taking decisions based on listening to one side of the problem only.
2. Acting uncritically on the information available.

- For Practical discussion: How would you get the point of view of someone who has refused to talk to you?

More about how to solve social problems.

Step Three:- Mental attitude.

- Your attitude towards solving a problem also affect how successful you would be able to solve it.

1. For example there are those who also think or believe that there is nothing they can do about their problems even before they make any effort at all, others easily give up and say I have tried my possible best etc.
2. Also there are those who always think that there is only one solution and strategy for a problem – they don't think about different methods to attack a problem and once the only method they employ fails that is all, - the problem is unsolvable.
3. Sometimes these negative mental attitudes are derived from socio-cultural practices or beliefs.

e.g, the belief in superstitions among the hausas.

- State that individuals who want to become good problem solvers must not adopt these attitudes.
- Inform the participants that methods or strategies to overcome these should be discussed in subsequent meetings.

Step Four: Affective conditions.

- Explain that the "mood" or emotional state of the individual can also affect his ability to solve social problems.
- E.g. when people are annoyed, angry or anxious, they tend to act without weighing consequences, they often say for example "I don't care" or "I don't give a damn", "come what come may" etc.
- In short, in such situation, people tend to act on impulses .
- Explain that serve or steer our impulses to action e.g. to attack or hurt when we are angry, furious, aggressive, jealous, bitter, etc.).
- Basic steps in promoting emotional competence and control of impulses:

A. Attention.

- Pay attention to your emotional state whenever you are solving any social problem. Try to note how frequent you make such statement as "I am sad" "I am bored" "I don't care".

B. Differentiate between positive and negative emotions, and the action(s) in view.

A) Positive: Interest, expectation, surprise, joy, (etc.)

B) Negative: Fear, shame, anger, rage, (etc.)

C. Try to respond appropriately by considering the consequences (both positive and negative), in full before you decide what to do.

- Do not terminate problem solving immaturely – follow all the basic steps of problems solving and then respond appropriately. Avoid emotional solutions/reactions to problems.

Step Five:- Evaluation

1. Why is it difficult to store information in the short term memory?
2. List three ways to improve upon your memory system.
3. Explain two ways how an individuals mental attitude can affect social problem solving.
4. Enumerate five ways in which our impulses can steer action or behaviour.
5. What are the basic steps in promoting emotional competence and control of impulses?

MODULE 5: *Stages and Levels of Social Reasoning.*

OBJECTIVES:

At the end of this module, participants should be able to:-

1. Define moral reasoning
2. Describe the major stages/levels in the development of moral judgement (i.e. reasoning).
3. Differentiate between good and bad, moral principles.

INTRODUCTION:

Introduce the unit through this moral dilema.

Bala is a fourteen-year-old boy who wanted to attend a long vocation camp. His father promised him he could go if he saved up the money for it himself. So Bala worked hard at selling newspapers and saved 200 Naira it cost to go to the camp and a little more besides. But just before the camp was going to start Bala's father change his mind. Some of his friends decided to go on a special fishing trip, and Bala's father was short of the money it would cost. So he told Bala to give him the money he had saved from selling newspapers. Bala didn't want to give up going to camp, so he thought of refusing to give his father the money.

Discuss this dilemma with the following questions:-

1. Should Bala refuse to give his father the money? Why?
2. Was Bala's father justified? Why?
3. Why should a promise be kept?
4. What makes a person feel bad if a promise is broken? Why that?
5. What is the most important thing a good son should recognise in his relation to his father? Why that?

PROCEDURE

Step One: **Definition of Major Concepts**

Define Morality as the ability to understand the difference between right and wrong, good and evil.

- Define to do moral/social reasoning as "the process for deciding what to do in a situation involving conflicting views. That is, one is in a dilemma.
- E.g. should Bala give his father the money or not?

Explain that there are five well known stages in the development of moral judgement, high stages are better than lower ones.

Step Two: Levels or Stages of Social Reasoning.

Explain the premoral level as follows:

Stage 1 punishment and obedience orientation:

- that is the "goodness" or "badness" of an action depends on the physical consequences e.g. Will I be beaten by Daddy if I do this? Will the Principal punish me if he catches me doing this action?
- In both cases, the right action is simply defined in terms of that which avoids punishment.

Stage 2: Reasoning based on selfish or personal interests. That is good or right action is that *which lead to achieving one's aims or that which satisfies one's own needs* – less concerned about the needs of others.

- That is why this stage is often called the egocentric or self-centred stage because individuals at this stage are mainly concerned about their own personal needs – and only on rare occasions about others.
- People at this stage do not care about justice or loyalty, their reasoning is mainly "you scratch my back and I will scratch yours"
- These two stages occur from 6 – 11 years.

For Practical Discussion:- Do you think Bala would be self if he refuses to give his father the money?

Step Three:

Explain the convention level as follows:

Stage 3: Doing things to please others because of the need to be called "Good boy" or "Nice boy".

- "Right or wrong", "good and bad" actions are those which please others and is approved by them.
- Moral reasoning is determined by such questions as "What should a good boy do in order to please his parents' members of the community or any other senior person in the community?"
- It is thus mainly geared towards satisfying the emotions (likes and dislikes) of others.
- The problem with this type or reasoning is that sometimes those we want to please or make happy often require us to do the wrong thing (i.e. what they want to achieve).

For Discussion: What do you think will happen if people do things just to please others?

Stage 4: The law is always right (Ages 10 –15)

- great concern for authority and social laws regardless of what will happen in the immediate circumstances.
- Concern for maintaining social order because they are enshrined in the constitution or laws of the community.
- Note that the social system need not be conventional society. It may be one's ideal system, or religious community or system or a tribal/ethnic group.
- Quite often individuals at this stage consider the system itself to be more important than the right of it's individual member.

For Discussion: Should we obey the law even when doing so will lead to bad consequences.

Stage 5: The social contract or legalistic orientation.

- Explain what is meant by social contract
- State at this stage individuals inquire into the basis of law e.g. what is the moral validity or usefulness of the law, constitution or system.

- Differentiate between laws as absolute and laws as relative.
- State that laws are considered as relative based on a reflection of the very reason why that society should exist or what it hopes to achieve by formulating that particular law. That is, good laws must have a utilitarian value e.g. they must serve or be useful to the greatest number of persons for whom it is meant.
- Absolute laws are those that should never change, they are permanent (e.g. religion codes or laws).
- For Discussion: What do you think will happen if law remain the same all the time?

Step Five: Suggestions on principles to consider it difficult or conflicting social or moral dilemma situations.

A. Try always to adopt the following good moral principles whenever you want to decide on any moral dilemma situation.

1. Put your self in the other person's situation. E.g. How would I feel if I were in the other person's situation. How would I react to this decision?
2. Be mindful of the consequences that your actions or decisions will cause or have caused the other person(s) E.g. accept responsibility, apologies to those you have offended.
3. Be consistent in your social behaviours.
4. Consider each individual's right to life freedom and liberty over all other considerations.

- Remember that laws are supposed to governance such rights.

B. Avoid the following bad moral attitudes or principles.

1. Acting on desires and impulses.
2. Being indifferent to the sufferings of others.
3. Lack of concern for the consequences that your actions have caused others.

MODULE 6: STAGES IN THE GROWTH OF INTERPERSONAL UNDERSTANDING
OBJECTIVES:

At the end of this module, participants should be able to:

1. Define what is meant by interpersonal understanding (i.e. social perspective taking).

2. Identify the major stages in the development of inter personal understanding and
3. Differentiate between intentional and unintentional behaviours, conscious and unconscious behaviours.

PROCEDURE:

Step One:

Define interpersonal understanding as the ability to understand and co-ordinate the reasons and manners in which individuals think and act in relation to each other.

- It examines such issues as why and how you relate or act towards your friends, your parents, and other people around you.
- More specifically it asks question like, what are the purposes of friendship? Why do parent punish their children? What is an ideal or good friendship? And so on.
- State that there are five well known stages in the development of interpersonal understanding.
- Higher stages are better than lower stages.

Step Two: Explain the first two stages as follows:-

Stage 0: Ages 3-6: Undifferentiated and Egocentric perspective taking.

- Concepts of Persons: (i.e. how they think about other people)
- Children at this level cannot different social perspective they cannot differentiate between the physical and the psychological characteristics of persons.
- E.g. they don't know that people have feelings and motives.
- Also cannot differentiate between intentional and unintentional behaviour.

Concepts of Relation (i.e. how they think and relate with others)

- Focus on one relationship at a time.
- They are concerned only about themselves.

Stage 1: Ages 5-9: Differentiated and subjective perspective taking.

Concepts of Persons:

- Individuals at this level can differentiate between the physical and the psychological characteristics of individuals (e.g. people have both inner and outer reality).

- Your expression on the face does necessarily represent your inner feelings.
- Can also differentiate between intentional and unintentional behaviours/actions.

Concepts of Relations:

- Although they are aware that other people have an inner reality, they still think that such inner feelings or motives can be understood by simple physical observations – thus their understanding of relation is subjective.
- Individuals at this stage are capable only of co-ordinating one-way or eliminated perspective e.g. only one person or party is responsible for the misunderstanding.

Step Three: Explain the second and the third stages as follows:

Stage 2: Ages 7-12; Self Reflective and Reciprocal perspective taking.

- Individuals at this stage are now capable of reflecting on their own thoughts and actions and they can also believe that other people can do so.
- They also have the capacity for second person perspective or point of view, that is the ability to put one self in another persons "shoes" (or position).
- Inner feelings and motives are now believed to be more important that outer expressions or reality.

Concept of Relations:

- Interpersonal perspective are understood and co-ordinated mainly in reciprocal terms – "do me I do".
- Emphasis is on satisfying the two parties.

Stage 3: Ages 10-15: Third person and mutual perspective taking.

- There is the emergence at this stage of a true third-person perspective. That is my own view, your own view his own view.
- Individuals at this stage can now step outside not only their own immediate perspective but outside the self as a system.
- There is also the notion of the will which is believed to be the monitor or controller of one's thoughts and actions.

Concepts of Relations:

- This stage marks the beginning of true social or inter personal understanding, because persons at this stage are capable of stepping outside the social interaction and consider the views or perspective of all parties involved including those of the self.
- Also individuals at this stage are aware and intentions, people's understanding and behaviours are affected by their attitudes and values as well as beliefs.
- They are also capable of co-ordinating different perspective such as reciprocal, and mutual perspectives.

Step Four: Explain the fourth stage as follows:-

Stage 4: Age 12 – through adulthood. Indepth and societal symbolic perspective taking.

- At this stage, there is an indepth (i.e. extensive and through) understanding of persons.,
- E.g. There is the understanding that although actions, thoughts, motives and feelings are determined by the mind, individuals may necessarily fully understand them at all times.
- There is thus the motion of the unconscious – (i.e. people may refuse to do things not because they do not want to, but because they are not aware that they should.
- In short people may be ignorant of certain things both about themselves and other people

Concepts of Relations:

- There is a thorough and extensive understanding of social relationships e.g. individuals at this stage are aware that there is a limit to mutuality.
- They are also aware that different levels relationships exist to cater for different purposes.
- E.g. in the domain of friendship there may be a casual friend, school mates, intimate friend etc.
- Social relationships can also be view from a conventional legal or moral perspective in which all individuals can share in a universal understanding.

Step Five: Evaluation Questions.

1. What do you understand by the term inter personal understanding?
2. How many well known stages or levels are there in the development of interpersonal understanding?
3. Briefly explain the following:-
   1. Second person perspective
   2. Reciprocal perspective
4. Briefly differentiate between the following:-
   1. Mind and Will
   2. Conscious and unconscious self.
5. At what level do people develop these concepts in a 1 and 2 of question four?

MODULE 7: STAGES IN THE CONCEPTIONS OF FRIENDSHIP

OBJECTIVES:

At the end of this unit, students should be able to:-

1. Identify the major stages in the conceptions of friendship
2. Describe the five stages in the conceptions of friendship with particular emphasis on purpose of friendship qualities of good friends (or friendship and reasons for termination of friendship).
3. Describe the conflict resolution strategies at each stage.

INTRODUCTION:

Introduce the module by asking the following questions:-

1. What kinds of things do good friend sometimes fight or disagree about?
2. What are some good ways to settle disagreement with a friend?
3. Can friends have disagreements and still remain as friends? Why?

PROCEDURE:

Step One: Levels or stages of friendship.

State that there are five qualitatively different stages in the conceptions of friendship.

- Each stage has a different conception of the purpose of friendship, qualities of a good friend, reason for termination of friendship and conflict resolution strategy.
- Explain the five stages as follows:-

Stage 0: 3-6 Friendship viewed as momentary physical interaction.

Purpose of Friendship

The major purpose of friendship as conceived/understood by the young child, is to play for moment only:

- Qualities of a good friend valued in terms of physical attributes –strong, big.
- They cannot differentiate the levels of friends.
- Fights as cause and justification for separation or "termination of friendship".

CONFLICT RESOLUTION STRATEGY

- Mainly physical solutions to conflict e.g. non-interaction (I will not play with you).
- Direct physical intervention (fights).

Stage 1 (Ages 5 – 9): One way friendship.

- Purpose of friends defined in terms of the self's personal likes and dislikes.
- Highly egocentric and self in relating with a friend.
- A good friend is that who does good things to me (i.e. to the self).
- The cause of conflict seen in Unilateral terms (e.g. you are the cause of the problem).
- Friendship terminates when a friend no longer does what the self wants him to do.
- Hence friendship can break up of the basis of unilateral decisions ("I don't like you as a friend any more).

For Discussion: **Conflict Resolution Strategies Among Young Children**.

How do young children resolve conflicts among themselves?

Negation of the problems (i.e. denying the cause of the conflict giving back or returning to the offended person the cause of discomfort especially in positive action (e.g. "I will not do it again")

- Rights also feature as a conflict resolution strategy.

Step Two: Two way Friendship

Stage 2 (7-12): Bilateral Friendship and co-operative solution to conflict.

- Purpose of friendship
- *Friendship is necessary because people need companionship i.e. need to be liked-* not just somebody play with.
- Intimacy and sharing believed to be reciprocal. That is each party finds out what the other likes to do as well as what each partly does not like rather than the relationship itself.
- A good friend is that who reveals inner or true feelings and motives about things.
- Conflicts are now understand to be caused by both parties in the relationship (not that you are the cause approach of stage 1).
- Hence solutions must satisfactory to each party.

Conflict Resolution Strategy.

- Negation no longer appropriate – each party must mean what he says, when he *apologies*.
- Conflicts can either be forgiven or forgotten – reunion of friendship very common at this stage.
- In general, stage two concepts centre on the parties or individuals rather than the relationship.

Stage 3: Mutual Friendship

Stage 3: (Ages 10-15) close friendship as intimate and mutual sharing.

- The purpose or function of friendship viewed as general mutual support to be upheld over a long period of time-not just immediate self serving interest typical of the lower stages.
- Hence the major focus is on the relationship itself not the subjective likes and dislikes of individuals.
- Good friendship seen as developing over a period in which the parties get go through mutual experience discover each others personality, traits and interests.

- Good friends also viewed as protective of their relationship and there is a strong fear of losing the relationship e.g. jealous of another person entering a relationship (i.e. establishing friendship with a third party).
- Intimacy or closeness measured in the degree to which two persons share intimate personal concern, and the efforts they make to maintain the relationship.
- Cause of conflicts viewed more abstractly and objectively there is even the realisation that a particular conflict if adequately worked through can strengthen the relationship.

Practical Discussions on Conflict Resolution Among Two Friends – Good Friends

- Have you ever been betrayed by your friend? How did you do to resolve the problem?

Typical methods associated with this level.

1. Minor conflicts which can be resolved through talking it out or verbal communication.
2. More serious conflicts which might even rain the relationship (e.g. betrayals).
   - generally, physical resolutions are very infrequent.

Step Four:

Stage 4: (12 – Adulthood) close friendship as Autonomous interdependence

- Friendship may serve different purposes (e.g. intimate relations (husband and wife) business relation, school mate (old boys association) etc.
- Another purpose of friendship (common at this level only) is that friendship are formed to provide a sense of personal identity.
- Ideal or close friendship are seen as being in a constant process of formation and transformation subject to change, flexibility and growth.
- There is the recognition that neither absolute autonomy or interdependence (mutuality is practical or necessary).
- Friends can assist one another at the same time try to achieve personal growth and independence.

- Conflicts may be caused by differences in personality and intrapsychi problems (e.g. differences in various interests and values).

Conflict Resolution Strategy.

- Mainly through mutual insight and self reflection (let us understand each other's point of view).
- Recognition of the need to talk problem out and maintain open lines of communication through:-

1. Keeping in touch with ones deeper feelings
2. Keeping in touch with the personal and sensitive concerns of the friend.
3. Communicating these feelings back and forth with one another.

Step five: - Discussion and solution to the following questions.

Ask the following questions to measure the success of the module procedure.

1. Is it possible to be intimately related as friends with more than one person at a time.
2. What sort of problems could lead to termination of friendship among close friends.
3. Suggest ways to strengthened friendship among secondary school students.

MODULE 8: SELF KNOWLEDGE AND PROCEDURES FOR SELF CONTROL

By the end of this module, participants should be able to:-

1. Identify the various levels of self awareness.
2. Identify the major obstacles to self control; and
3. Describe the basic procedure or steps in self control training.

PROCEDURE

Step One: Level of Self Knowledge or Awareness.

- Define self knowledge or awareness as an individual's knowledge about himself.
- The knowledge that people have about themselves is not the same. Some people know more about themselves than others.
- Children tend to have limited knowledge about themselves than adults.
- In general, there are five stages or levels which individuals tend to conducive or be aware of themselves.

Level 1: (Associated largely with infancy). Infants seem to be aware of their physical selves only. They don't seem to know that individuals have inner feelings, motivates, interest and intentions.

Level 2: There is the emergence of the awareness that individuals have inner thoughts and feelings but that these can immediately measured by the outward appearances and behaviours, e.g. somebody who is laughing is definitely happy internally.

Level 3: There is the awareness that a person's inner thoughts and feelings may be different from the outside appearance. That is inner feelings may not necessarily be represented or shown internally.

Level 4: These self systems are now considered as inter-related and that the individual is aware of every thing about himself at the conscious level i.e. in his mind.

Level 5: At the highest level of self awareness is the recognition that some aspect of our own self may not be well known to us. That is the mind has it's own limitations.

For Discussion with Students:

Identify three things that you think only you know about your self and three others which you think you do not understand about your self.

Point out that, an individual's self control is important because it determines how long he will endure difficult problem solving situation.

- Explain that sometimes people lack self-control because they don't know what it means.
- While others may be aware that they lack self-control but do not know the basic steps (i.e. procedures) they will follow to achieve high self-control.

Step Two: Obstacles to self-control.

A. Passivity

- define passivity as failure to take responsibility in various problem situations in life which call for action.

State that there are four kinds of passivity:-

i. doing nothing that is, not responding to problems and options.

ii. Over-adaptation – meaning uncritically accepting the goals and solutions suggested by others.

iii. Random or agitated behaviour -acting aimlessly.

iv. Becoming in capacitated or violent.

Step three: (B) Learned helplessness.

- This meant that from early childhood, individuals have learnt to believe that there is nothing they can do about problems.
- Learned helplessness is known to lead to problems such as depression and failure to manage problems.
- Levels of learned helplessness

1. Minimally helpless:- People in this category believe that it is always necessary to get help or assistance from someone to solve a problems.

C Negative self evaluations.

D Disabling talks or self – defeating conversions.

- State that some people often "talk" (i.e. lead) themselves into believing that they cannot do anything. Such talks include:-
- I can't do it "I cope" "I don't have what it takes to solve the problem". "It is too difficult to solve". It won't work (often before trying it), etc.
- Such talk or conversation get people into trouble and often prevent them from getting out.

Step Four: Basic Procedures for self-Control

- State that people can attain a high degree of self control by keeping to the following steps (or procedures).

1. Self -Observation

- Keep a record of all the self-defeating statements that you make and the actions you have taken in those situations.
- Records could be on daily, weekly interval.

2. Counter these negative thoughts or statements with positive ones.

For example whenever you say "I can't do it", immediately follow this up with "I can make it", or "it is possible".

- Always try to remind your self that many well known scientific research works have confirmed the fact that every human being can solve many problems. Once he can commit himself to finding the solution(s).

3. Try to describe your own thoughts and feelings based on the observation and your daily reflections about how you think and feeling about things and situations.

- This will give you an idea about the type of thinking and feelings inside you about your self. E.g. whether you have a high or low image of your self, whether you have a high or low ability to control your thoughts, feelings and emotions etc.

Step Five: Evaluation

1. What do you understand by self-control?
2. Is self control necessary in social problems solving? Why?
3. Identify four kinds of passivity.
4. What do you understand by learned helplessness?
5. Give four examples of disabling talks.
6. What are the basic steps in promoting self-control?

MODULE 9: DECISION MAKING SKILLS

OBJECTIVES:

At the end of this module, participants should be able to:-

1. Define what is meant by decision making.
2. Enumerate the major criteria for judging decisions.
3. Describe the decision balance sheet and how it can be used in analysing decision.

PROCEDURE

Step –One:

State that once all the possible alternatives and strategies for achieving each alternative have been identified, the next important step is to decide or choose among these alternative the best fit for the problem i.e. it involve deciding among alternatives.

- Define decision making as the process of choosing among alternatives which would ensure one makes as much gains as possible, and at the same time, reduces to the lowest level, the number of losses (that would follow as a result of the choice made).
- Emphasise the key factors in the definition as:
  1. Making as much gains as possible.
  2. Reducing losses to the lowest level.
- State that there are certain criteria or standards that are commonly used to judge a decision.

Step Two:

Explain the following criteria for judging decision as follows:-

1. Specific; any alternative or strategy to be chosen should be very (precise) not too general or vague.
2. **Measurable or verifiable**:- This implies among others that by looking at the alternative strategy or decision an individual would be able to say this is the good goal to be achieved e.g. I want to stop coming late to school in two weeks time.
   - There should be a "baseline data" or "starting point" and countable steps or outcomes.
3. **Realistic**:- Is the alternative chosen realistic?

   Realism is measured by looking at the following:-
   1. Are the resources to achieve the alternative available to the individuals? Can they afford it? Is it within their reach? Etc.
   2. Can the environmental obstacles be changed? If the obstacle preventing the achieving of the goals/alternative cannot be changed by the person, then the alternative is not realistic.
   3. Are the alternatives within the control of the individual? For instance, it is common for people to believe that their problems would be solved if only other people would

act the way they do. This is wrong because quite often people don't do what we want or expect them to do.

4. Is the cost or "budget" for the alternative too much or out of reach of the individual?

- *In general, the "cost" must not be more than the expected benefit neither should it* be too much even the benefit is so important.

Step Three: Explain the following criteria.

1. Adequate alternatives and strategies must not be too high or too low.
2. The goals, alternatives, decision in social problem solving should be owned by the individual – not imposed on him by anybody.
3. Must be in line with the individual values. Alternatives that contradict what an individual values may not be implemented.
4. Reasonable time frame: Is the duration for achieving the goal too short or too long? In either case, the alternative may not be accomplished.

Step Four:

Explain that decision making can be enhanced greatly by how honestly and sincerely we analyse benefits and losses to be incurred.

- State that the "Decision balance Sheet" is a very good way of achieving this.
- It is a way of examining the consequences of different courses of action in the light of both values and usefulness.
- It addresses utility. Will this course of action get me where I want to go?
- It also addresses acceptability. Can I live with this course of action.
- It helps clients consider not just themselves but also significant others and social settings of their lives.
- The issues considered in the balance sheet are possible gains possible losses, and acceptability or unacceptability of each.
- Discuss these issues further with participants by drawing the decision balance sheet on the black board and discuss the possible gains to self, others and society

for a student who wants to decide either to proceed on further studies after SSCE exams or to take up permanent employment.;

THE DECISION BALANCE SHEET

If I choose this course of action

The self

Gains for self	Acceptable to me because	Not acceptable to me because
Losses for self	Acceptable to me because	Not acceptable to me because
Significant others.		
Gains for significant others	Acceptable to me because	Not acceptable to me because
Losses for significant others	Acceptable to me because	Not acceptable to me because
Social Setting		
Gains for social setting	Acceptable to me because	Not acceptable to me because
Losses for social setting	Acceptable to me because	Not acceptable to me because

Source: (Egan, 1986).

Step Five: Evaluation.

1. What do you understand by decision making? What are the major factor involved?
2. What are the main criteria for judging a decision or choosing the best alternative?
3. List the major components of the decision balance sheet.

MODULE 10: PLAN IMPLEMENTATION: OBSTACLES AND SKILLS

OBJECTIVES:

By the end of this module, participants should be able to:-

1. Explain how inertia, entropy and post-decision depression affect plan implementation.
2. Identify and explain some of the major principles and skills that could enhance and sustain implementation of action plans.

PROCEDURE

Step One

State that no matter how good alternatives or solutions and strategies are, without implementing them, they are worthless.

- Hence an important part of the social problem solving process includes an implementation or action stage.

OBSTACLES TO IMPLEMENTATION OF PLANS

- Explain that there are a number of factors which could affect the implementation of action plans.
- The most important among such factors are:- Post decision depression, inertia, entropy as well as social cultural factors (*next module*).
- Explain the first three as follows:-

1. **Post Decision Depression**
   - This means that sometimes after people have taken a decision, they get depressed or worried.
   - They keep asking themselves whether they could have made a better choice.
   - They feel sad because their resources, time and freedom have now been committed to something which has no absolute guarantee as such.
   - Explain that this is a natural human condition which many individuals encounter at the implementation stage-often even after the most carefully and thoughtfully undertaken problem solving process.
2. **Inertia** – this refers to a natural tendency either to keep on doing the same old things or not to start new things.
   - It often puts a wedge on plans ever taking off.
3. **Entropy** – on the hand, is a natural inclination of things to fall apart overtime.
   - This is particularly so with long term or long duration action plans-where things tend to fall apart" before the entire plan is executed.
   - To avoid these conditions, it is important that individuals must learn the principles and "acquire" the skills that could help them keep at/or the task. Some of such skills and principles are discussed below.
   - The first crucial step, however, is that individuals must be aware of them, understand them, and them monitor his cognition to determine their occurrences.

Step Two: **PRINCIPLES AND SKILLS FOR IMPLEMENTATION OF ACTION PLANS.**

1. - Check or think steps.
   - State that these are essentially question steps which an individual should ask himself/her in the course of implementing an action programme.
   - There are three steps of check or think steps:-
     - A. Before think step
     - B. During think step
     - C. After think step.

A. Before think or check step.
   - State that an individual is expected to ask and supply answers to the following questions preparatory to implementation.
   - (i) Is it clear in my mind that I want this plan or programme?
   - (ii) Have I carefully and sincerely analysed all alternative and strategies with regards to this problem?
   - (iii) Have I suppressed any information, details alternatives or methods with regards to this problem?
   - State that honest and sincere answers to these category of question steps, can reduce a post decision depression as well as pave the way for commencement of implementation.

B. During Think Step.
   - As frequently as possible (after the commencement of implementation) the following set of questions should be asked, and answers supplied to them.
   - (i) Is the programme going on as planned?
   - (ii) Are there any negative signs or obstacles so far in implementing the plan.
   - (iii) Do I need to consult other people for assistance or gather additional sources of information?
   - Once a persons can honestly address these questions and supply the answers, their ability to implement action plans will be greatly improved.

Step Three (2) Assertiveness in Implementing Plans

- State that individuals who are lacking in self assertiveness either because they fear taking some risks or because of etropy, or the plan implementation stage (of the social problem solving process)
- State that such individuals can improve their self assertiveness ability through the following:-

1. Monitoring negative self feelings (e.g. high self criticism, self defeat etc.) as well as negative comments of others as a result of the plan, and saying no them.
2. Being more confident and positive – individuals should learn to appreciate their positive action (i.e. the right actions in plan implementation) and build more confidence and optimism for their plans.

- individuals should however differentiate between positive optimism as defined above, and optimistic bias, which means, taking unjustifiable and unintelligent risks, or believing that one is above any harm.

3. Use of self contract.

- State that the use of self contract is especially, valuable for difficult and longer duration action plans.
- Explain self-contract as-setting a contract with oneself indicating what one will do at appointed times, with specific provision for rewards and sanctions.
- Rewards for success or keeping to plan.
- Sanctions or "punishment" for failure to follow or carry out an action at the appointed time.
- Rewards need not be very expensive physical/or marerial objects, and they may also be psychological (e.g. self praise).
- Punishments, on the other-hand, should not be tool harsh on the self. A psychological punishment could be "I will not watch my favourite game or soup opera for a day or week.

Step Four - (4) Getting Feedback or information about how well the plan is being implemented.

- State that information about how well the plan has been implemented particularly with regards to the feelings, attitude and opinions of others, can be a source of motivation to further implementation.
- State that feedback information serve three related purpose in plan implementation.
- Confirmation, correction and motivation.
- Source of feedback.

1. Note how your friends, relation, teachers others, feel about your plan (This is often shown in their "New" comments, looks relationship with you.
2. You should also note how you feel about your self as a result of the action plan. Do you feel happy or sad? Do you regrets ever implementing the plan?

- Advise participants to be cautious especially about feedback from other people because sometimes people may have good intentions towards us, others might have motives.

Step Five Evaluation Questions

1. What do you understand by posit decision depression?
2. Define the term inertia and entropy.
3. Explain how they can affect plan implementation.
4. Explain the steps in improving low self-assertiveness.
5. What is self contract?
6. How can it be used as a plan implementation skills?

MODULE 11: SOCIAL BELIEFS AND PROBLEM SOLVING **OBJECTIVES**

At the end of this module, participants should be able to:-

1. Define what is meant by superstitious beliefs
2. Identify some ways to challenge irrational beliefs.
3. Differentiate between adaptive and maladaptive conceptions and attributions with regard to the belief in pre-distinction.

PROCEDURE

Step One:

- Define taboo as a customary restriction and prohibition with regard to touching, or mentioning of a certain person, performing of a certain action because it is considered dangerous unclean or sacred.
- State that both superstitious beliefs and taboos are common among both Hausa's and the Fulani's (infact there are many taboos that are shared by both.)
- Superstitions and taboos are suppose to protect the members against dangerous and other unwanted social behaviours.
- "Unfortunately, many if not all of them are very irrational,
- uncivilised and mature.
- Ask participants to cite examples of such beliefs that they are aware off.
- And the following example to those given by the students.

1. If a persons should cut his tongue with his teeth as he eats or speaks, someone, somewhere is maligning him.
2. If you eat from the same pan with a woman, she saps your strength from you.
3. If a pregnant woman takes a fancy to some food, she must be given it or else she will miscarry.
4. Leaving too much hair on the head brings about headaches.
5. Sweeping at night is taboo, because the sweeper may sweep over the home of some jinns.
6. If a person sweeps (his room compound etc.) during the night he sweeps away his luck.
7. If a woman climb a corn-bin, she will bear a thief.
8. If a woman should climb up a ladder she will become mad.

- Those with asterisk are shared by both the Hausa's and the Fulani's.

In discussion these beliefs, focus should be one:-

1. Challenging the irrational, untrue and baseless nature of the beliefs.

2. The instructor should state his personal experiences in life which on many occasions have contradicted these belief and taboos but nothing happened. e.g. eating with a woman from the same plate/pan.
3. Most importantly, state that these beliefs are not being adhered to by people from other cultures but nothing has happened to them.
4. There is no scientific base for any of these belief (i.e. superstition and taboos).

Step Two:

To ensure that individuals' attitude towards social problem solving is not affected by superstitious beliefs, participants are adviced to:-

1. Avoid limiting their assessment and selection of alternatives or strategies because of any restrictions by these beliefs and taboos.
2. Observing their own thoughts (with regards to solving any problem) and noting occasion when such beliefs tend to prevent them from carrying out any step in the problem solving process.
3. Countering the beliefs by refusing to observe the restrictions or prohibitions imposed (especially by recalling at this stage, the four observations against superstitions and taboos mentioned above).

Step Three:

Define predestination or Qadar as the belief that al things and all events are predetermined by God from all eternity according to His plan.

- Some Islamic scholars account for it as a separate part of the Islamic creed – that is an article of faith, while others understand the concept to be implied in God's attribute of Divine Will.
- From either perspective, the fundamental meaning and message of the belief in Qadar are that:-

1. God has preordained all events to eternity but He has concealed this knowledge to Himself alone. In other words, no human being knows what the preordained course of events are including those that affect him/her.

2. This world is an orderly world which works according to laws (e.g. of nature) which we all know. Thus, we as human beings, must be active in doing all those things we believe will help us achieve our goals in life.

- State that unfortunately, many people tend to have wrong conceptions and application of this concept, which in turn, has a paralysing effect on their conduct including a problem solving.
- For example, people often say "this is what God has destined", there is nothing we can do about it". That is what God has destined. That is the will of Allah, etc.
- In all these instances, individuals have not only inferred what the preordained course of event is, but often refuse to do any thing else having discovered "what the "destined" or "will of God" is on the issue.
- This is wrong because as we have just seen the knowledge of preordained course of event or its outcome, is known only to God.
- Secondly, even when God has preordained the condition of a person or people it is possible for him to change, as we shall see below. Thus, the belief in destiny should not stop people from taking active and sustained effort in solving life problems and achieving aims in life.

Step Four:

To ensure that individuals do not make such wrong and self-defeating attributions, participants are advised to note the following:-

1. Avoid inferring or concluding that this is what God has preordained on any issue or problem.

- Always try to work problems to the fullest of your ability, and as many times as you can remember, because you have tried one or two alternatives or strategies and you did not solve your problem it does not mean that God has preordained you will not solve that problem – All it means is that you should develop new alternatives and strategies.

2. State further that even though God has preordained all event, to eternity, it does not mean that human effort is useless. Indeed the Qur'an advices against such an attitude.

- Use the following Qur'anic verses to explain this point.
- Qur'an (90:4) "Verily we have created man into toil and struggle (i.e man is born to strive and struggle).
- "(42:30)" "Whatever misfortune happens to you, is because of you had have done".
- "(13:11) "verily, never will God change the condition of a people, until they change it themselves".

Step five: Evaluation

1. What is a superstition?
2. Give five examples of superstitions beliefs commonly found among the Hausas and Fulanis.
3. How can we challenge irrational beliefs?
4. Define the term predestination.
5. Give examples of how this belief is wrong conceived and applied?
6. What is the appropriate thing to do in five above?

MODULE 12: SOCIO-CULTURAL FACTORS IN PROBLEM SOLVING PROVERBS.

PROJECTIVES

At the end of this module, participants should be able to:-

1. Define the word Proverb.
2. Identify the possible ways that proverbs could be lead to negative attitude towards problem solving.
3. Identify the possible ways to counter the negative attitudes that could be caused by proverbs.

PROCEDURE

Step One:

Define proverbs as phrases or sentences which involve play with words, turning and twisting the meaning of a word.

- State that proverbs are commonly used in both Hausa and Fulfulde languages as well as other languages.
- Both the Hausas and the Fulanis have high regards for proverbs and use them not only as means of expression, but as a containing meaning, wisdom and insight for social behaviour.
- However, with regards to social problem solving, not all the proverbs in these two languages contain these "meaning" "wisdom" and "insight".
- Infact many proverbs – both from their contents and message – tend to lead to negative attitudes depending on how strong the individual believes in their message(s).
- With examples to be given both the instructor and the participants, lead class to see how proverbs could lead to negative and positive attitudes towards problem solving.

Step Two

Proverbs that may not be harmful to problem solving.

1. Hange baya kawo na nesa

   Meaning – observation from a distance does not bring the distance closer.

   Implication – if more observation will not bring a distance closer (i.e. solve a problem) them it means he/she must move closer try to understand the problem.

2. In mutum yace ina zan kwana, ayi dare dai.

   Meaning – if a person says where shall I sleep just let night falls.

   - This tends to warm a person don't waste time make efforts to solve your problem before it is too late.

3. Kowane bakin wuta da nasa hayaki.

   Meaning – each side of the fire has its smoke".

- This could lead to a positive attitude such as trying to find all alternatives to the various aspects of the problem.

4. Dabara tafi karfi.

   Meaning – Planning is better than brute strength.

   - This implies that a person must plan well and ahead of his problem because that is better than putting all you have at the eleventh hour.

5. Dadin zama shi ya kan kawo bege.

   Meaning – Friendship induces yearnings implying that individuals should value friendship.

Step Three:

Explain that there are many other proverbs which unfortunately do not carry the same message as these.

- These category of proverbs tend to have a negative effects an problem solving because they may lead to negative attitude towards it e.g.

1. A bar kaza cikin gashinta.

   Meaning – leave the hen in its feathers.

- Often said to imply not digging into a problem for whatever reason, this is not a helpful advice for someone who wants to find out all the possible details of a problem-no-matter how personal-so as to determine best alternatives.

2. Ba bu wata dabara ga mai shiga rijiya.

   Meaning – There is nothing else for the person who enters the well.

- This is exactly the opposite type of attitude that good problem solvers should cultivate at whether stage and no matter how hopeless the situation is, a good problem solver must never stop thinking about alternatives.

3. Komi ta benjamma banjam.

   Whatever will happen, let it happen or I don't give a dawn to whether the consequences might be.

- Again, this is a bad attitude for any person who wants to be a good or successful problem solver. You must not only care about the consequences, but you have to determine the one with the greatest good or bad as the case might be.

4. Bashi hanji ne yana chikin kowa.

- Meaning – Debt is like intestine, everybody has them.
- Again this proverb is likely to lead a person to a wrong decision (because everybody is indebted, I should join take a debt too-instead of looking or thinking for a better alternative).
- All the proverbs to be cited by the participants are to be considered a long the possible effects they might have for social problem solving as a whole, or any particular step in the problem solving cycle.

Step Four:

In view of the fact that proverbs are made up of the good and the bad, it is necessary that participants must be adviced and persuaded to be careful in using them through the following:-

1. Not to attach any importance to them whenever they are solving any problem.
2. In case they have to use them, they must select those that are really good-such as those discussed in the first part of the lesson.
3. In the long run, they should completely avoid using proverbs as basis for social action. Individuals should learn to express themselves in their own language as intelligently as possible, rather than use proverbs.

Step Five: Evaluation.

1. What is a proverb?
2. Give five examples of proverbs that might have negative effects on an individual's attitude towards problem solving.
3. What advice would you give individuals who frequently use proverbs?

APPENDIX B1

AHMADU BELLO UNIVERSITY, ZARIA

Dear Students,

The following instrument is designed for a doctoral research work. You are expected to read each of the passages or statements carefully and then answer the questions as accurately as possible. You are hereby assured that the answers you will give shall be treated as confidential and shall be used for research purposes only. It is therefore hoped that you will give your maximum co-operation and response to the questions to the best of your ability.

Section A.

Sect:

1. School:_____

2. Class:_____ 3. Age_____

4. Tribe:_____ 5. Religion_____

6. Father's Tribe_____7. Mother's Tribe:_____

8. Father's highest level of education

9. Mother's highest level of education.

_____M.Sc., M.A., M.Ed., Ph.D._____

_____ND, NCE, Advanced Cert._____

_____Secondary School Cert., G.II_____

_____Primary School only_____

_____Quranic Education only_____

_____Others (Please Indicate_____

_____No formal or Quranic Education____

10. Fathers Occupation

11. Mother's Occupation

_____Civil Servant _____

_____ Military Personnel_____

_____ Private Business_____

_____ Farming_____

_____ Housewife only _____

_____ Others (Please indicate)_____

12. Apart from English Language, which other languages do you speak fluently:

i) Hausa_____

ii) Fulfulde_____

iii) Yoruba_____

iv) Igbo_____

v) Others (Please indicate)_____

SECTION B

Instructions

Please carefully read the following short passages and respond to the questions in the spaces provided.

PROBLEM 1

Bala is a student in one of the secondary schools within Sokoto township. Bala's friend, Musa, has observed that for the past two weeks, he (i.e. Bala) has been coming late to class Musa was very concerned about this.

i. Assuming you are Bala's friend, list all the things you will do to get Bala to stop coming late to class. Write all of them here.

_____

_____

_____

_____

ii List all the possible means of knowing why Bala has been coming late to class. Write all of them below.

_____

_____

_____

_____

iii. What do you think are all the possible consequences that would happen to Bala as a result of his coming late to class? Write all of them below.

_____

_____

_____

_____

Problem Two

Shehu is a 15-year old Senior Secondary II Student in one of the schools in Sokoto Metropolis. His father is a civil servant and has many children from different mothers! Although Shehu only occasionally has quarrels with the other children, he does not have equal attention from his father. In school, Shehu often feels worried and lonely. Infact, he admitted that he is unhappy much of the time.

a) What do you think is Shehu's most serious problem?

_____

_____

b) Why this_____

_____

_____

_____

ii) Think about all the possible range of things you will do if you were in Shehu's situation. Write them here.

_____

_____

_____

_____

(Use additional paper if necessary)

iii) Which would you choose if you were in Shehu's situation?

_____

b) Why this_____

Problem Three

Dikko is a student in a senior secondary school. He is from an average income family. His fellow-students have observed that that he is very unhappy most of the time. His class teacher has asked you to assist him by answering the following questions.

i) What do you think are all the possible causes of his problem?

(Use additional paper if necessary)

ii) What do you think are all the possible range of things he could do to overcome his problems?

iii) List all the possible obstacles you think Dikko might face in applying these solutions.

SECTION C

Please read the following story and answer the question under it.

Aminu is Umar's best friend. He has done a lot of favours for Umar on many occasions since their childhood days. One day, they went to a big supermarket to buy some items. On their way out of the supermarket, Aminu stole an exercise book worth N15, and quickly went away.

1a. If you are Umar, would you tell the security officers at the Supermarket Aminu's name if they insist that you should tell them.

b. Why?_____

_____

2a. Do you think it is important to have a friend?

_____

b. Why?_____

_____

3a. Assuming you are Aminu, What would you do to Umar if you find out that he told the security agents at the supermarket your name?

b. Why this?_____

_____

SECTION D

Please indicate whether the following items are a problem for you or not by marking the response option that best represents your situation or feeling towards them.

S/No.	ITEMS	RESPONSE		
		Never a Problem	Sometimes a problem	Always a problem
1	Nothing interesting to do in my spare time.			
2.	Being talked about			

3.	Feeling inferior			
4.	Wanting to be more popular			
5.	In too few students clubs and societies			
6.	Being timid and shy.			
7.	Feeling very lonely			
8.	Worrying too much			
9.	Too easily discouraged			
10.	Failing in so many things I try to do.			
11.	Being treated like a child at home.			
12.	Parents making too many decisions for me.			
13.	Being tempted to cheat in exams.			
14.	Afraid God is going to punish me.			

SECTION E

Please indicate whether you agree or disagree with the following statements.

	Statement	Strongly disagree	Disagree	Agree	Strongly Agree
1.	When a solution to a problem was unsuccessful I do not				

	examine why it did not work				
2.	After I have solve a problem, I do not analyse what went right or went wrong				
3.	When confronted with a problem, I tend to do the first thing that I can think of to solve it.				
4.	When I try to think up possible solutions to a problem, I do not come up with very many alternatives				
5.	When confronted with a problem, I do not usually examine what sort of external things in my environment may be contributing to my problem				
6.	Sometimes I do not stop and make time to ideal with my problems				
7.	I make sudden decisions and later I regret them.				
8.	Whatever choice of options I make in my worldly affairs are determined by fate or destiny.				
9.	Failure to solve one's problems are indications of what has been predestined				

	with regards to those problems.				
10.	All proverbs in my Hausa (or your native language) contain words of advice and wisdom.				
11.	Do you think superstition beliefs in your community should be adhered to?				

12 How frequent do you use proverbs in your daily conversations?

a. Never at all

b. Sometimes

c. Most of the times.

12. List five of your most favourite proverbs in Hausa (or your native language).

1. _____

2. _____

3. _____

4. _____

13. Give five examples of the most familiar and commonly observed superstitious beliefs from your area.

1 _____

2 _____

3 _____

4 _____

5. _____

Thank you very much.

APPENDIX B2

AHMADU BELLO UNIVERSITY, ZARIA

Dear Students,

The following instrument is designed for a doctoral research work. You are expected to *read each of the passages or statements carefully and then answer the questions as accurately* as possible. You are hereby assured that the answers you will give shall be treated as highly confidential and shall be used for research purpose only. It is therefore hoped that you will give your maximum co-operation and respondent to the questions to the best of your ability.

SECTION A

3. School:_____

4. Class:_____ 3. Age_____

5. Tribe:_____ 5. Religion_____

6. *Father's Tribe*_____7. *Mother's Tribe:*_____

8. Father's highest level of education

9. Mother's highest level of education.

_____M.Sc., M.A., M.Ed., Ph.D._____

_____ND, NCE, Advanced Cert._____

_____Secondary School Cert., G.II_____

_____Primary School only_____

_____Quranic Education only_____

_____Others (Please Indicate_____

_____No formal or Quranic Education____

10. Fathers Occupation

11. Mother's Occupation

_____Civil Servant _____

_____ Military Personnel_____

_____ Private Business_____

_____ Farming_____

_____ *Housewife only* _____

_____ Others (Please indicate)_____

13. Apart from English Language, which other languages do you speak fluently:

vi) *Hausa*_____

vii) Fulfulde_____

viii) Yoruba_____

ix) Igbo_____

x) *Others (Please indicate)*_____

SECTION B

Instructions

Please carefully read the following short passages and respond to the questions in the spaces provided.

PROBLEM ONE

Mani is a student in one of the secondary school within Sokoto township. Mani's close friend has noted that he (i.e. Mani) has not been doing his class assignments lately. Mani's friend was very much concerned about this.

1. If you are Mani's friend, what would you do to get Mani to start doing all his assignments against? Write all the possible options here.

_____

_____

_____

(use additional paper if necessary).

2. What are the possible sources of information about why Mani has not been doing his assignments?

_____

_____

_____

3. What do you think are all the possible consequences that would happen to Mani for not doing his assignments. Write all of them here.

_____

_____

_____

PROBLEM TWO

Abdullahi is a secondary school student. He is from a polygamous family and his mother was divorced few months before his father married an additional wife. With a father who cares less about his education, Abdullahi is increasingly finding it difficult to continue with his secondary education. Abdullahi is in a confused situation.

1a. What do you think is Abdullahi's major problem?_____

_____

_____

b. Why?_____

_____

_____

2. Think about all the possible range of solutions to Abdullahi's problem. Write all of them below.

_____

_____

_____

Use additional paper if necessary)

3a. Which would you choose if you were in Abdullahi's positions?

_____

_____

_____

b. Why this?_____

_____

_____

PROBLEM THREE

Yaro is a student in one of the secondary schools in Sokoto State. His major problem is that he is not getting along well with other students in his school. Please assist him overcome his problems by responding to the following questions.

1. List all the possible causes of his problem?

_____

_____

_____

Use additional paper if necessary)

2. What do you think are all the possible range of things be could do to overcome his problem? Write all of them here .

_____

_____

_____

3. List all the possible obstacles you think Shehu might face in applying these solutions:

_____

_____

_____

SECTION C

Please read this story and answer the questions under it.

One day a young boy almost your age, was drawn in large pond not far from your house. Your parents (who were aware of the incident), warned you never to go to that pond and swim again.

But you did not heed to their instructions and you occasionally do go that pond and swim.

1(a) Would you tell them the truth if they were to ask you whether you have been going to the pond to swim or not.

_____

_____

_____

(b) Why this?_____

_____

_____

_____

2(a) How would you feel (or react) assuming your parents should punish you for your *action*?_____

_____

_____

_____

_____

b) Why this?_____

_____

_____

_____

3(a) Do you think persons of your age need to have parents?

_____

_____

_____

_____

b) Why this?_____

_____

_____

_____

SECTION D

Please indicate whether the following items are a problem for you or not by marking the response option that best represent your situation or feeling towards them.

Items		Response Options		
		Never a problem	Sometimes a problem for me	Always a problem for me
1.	Not having many friends			
2.	Being made fun of			
3.	Not getting a long well with other people			
4.	Being criticised by others			
5.	Being left out of things			
6.	Slow in making friends			
7.	Difficulty in making up my mind about things.			
8.	Unhappy too much of the time			
9.	Being nervous			
10.	Getting into trouble			
11.	Disagreement between me and my parents			
12.	Wanting parental love and affection			
13.	Happy a certain bad habit			
14.	Sometime not being as honest as I could			

SECTION E

Please indicate whether you agree or disagree with the following statements.

	Statement	Strongly Disagree	Dis-agree	Agree	Strongly Disagree
1	When I am faced with a difficult problem I do not bother to collect information that can help me defined what the problem is.				
2	In solving a problem, I do not take time to consider the chances of each alternative being successful				
3	I generally go with the first good idea that comes to my mind.				
4	Sometimes I get so angry that I am unable to consider many ways to dealing with my problem				
5	When my first efforts to solve a problem fail, I become uneasy about my ability to handle the situation				
6	Even though I always work on a problem very well, I often find it difficult to carry out all what I have decided on.				
7	I do not trust my ability to solve new and difficult problems				

8.	One's effort to solve social problems are determined not by what he does but by what has been predestined for him.					
9.	Every alternative I choose in my daily affairs are determined by my fate or destiny.					
10.	All proverbs in Hausa (or your native language can teach an individual to make wise and intelligent decisions.					
11.	Do you think the superstitious beliefs commonly held in your area have any meaning or relevance?					
12.	How often do you make use of proverbs in your daily conversations?					

a. Never at all

b. Sometimes

c. Most of the times

13. List five of your most favourite proverbs in Hausa (or your native language).

1. _____

2. _____

3. _____

4. _____

5. _____

14. List five examples of the superstitious beliefs commonly held by people from your area.

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

Thank you very much.

APPENDIX C[1]

SCORING GUIDE FOR SOCIAL COGNITIVE SKILLS ASSESSMENT TEST

TEST A

SECTION B

INTRODUCTION:

In general, emphasis is placed on the respondents ability to conceptualise as many solutions, alternatives, consequences or causes (as the case may be) to each of the probe question following the three problems in this section. A mark is given for every additional alternative mentioned by the respondent. However, for questions 1 & 3 to problem two, emphasis is on the quality of the response.

Solutions to Problem 1

1. All the possible things that Bala's friend can do to stop coming late to class.

		Score
i)	Discuss with him, talk the problem over	1
ii)	Advice him, encourage him, persuade him to stop coming late to class.	1
iii)	Suggest alternative solutions (e.g. tell him to wake up early in the morning, to go to bed early in the night, avoid early morning engagements etc.)	1
iv)	Report him to class teacher, school authority	1
v)	Communicate with parents or relatives	1
vi)	Point consequences of his action, educate him (e.g. you will be punished, expelled from school etc.)	1
vii)	Threaten him, (e.g. I will report you to the class teacher, your parents, I will cease to be your friend, etc.)	1
viii)	Parents might punish him, refuse to give him money, reduce his Pocket money	1
ix)	Solve problem together (i.e. branch to his house everyday and	

	come to school together)	1
x)	Report him to school counsellor school psychologists, etc. for psychological or professional assistance	1
xi)	Force him to come early, drag him to school, lock him in the classroom	1
xii)	Any other appropriate alternative (?)	
2.	<u>All the possible ways of knowing why Bala has been coming late to class.</u>	
		<u>Score</u>
i)	Ask him, seek information from him directly (e.g. interview him etc)	1
ii)	Ask his parents, other relations friends	1
iii)	Monitor his movements, observe him	1
iv)	Administer student problem inventory, social adjustment test, study habits inventory	1
v)	Look at his cumulative records files personal records file	1
3	<u>All the possible consequences that would happen to Bala as a result of his coming late to class.</u>	
i)	Result to poor attendance record	1
ii)	Miss early morning lesson, test, morning assembly	1
iii)	Difficulty in understanding his class subjects	1
iv)	Could lead to poor performance in exams fail his exams	1
v)	Class master/teacher might punish him, penalise him	1
vi)	Teachers might be displeased with him, dislike him	1
vii)	Parents might be displeased with him, dislike him	1
viii)	Parents might punish him, refuse to give him money, reduce his pocket money.	1
ix)	Could lead to strain relationship with his friends other classmates	1
x)	Could lead to personal psychological problems (e.g. worries, stress)	1
xi)	Could be expelled, or suspended from school, become a truant, a drop out, fail to achieve career ambitions	1

xii) Any other relevant response(s)

Solutions to Problem 2

1A	Shehu's most serious problem is:-	Score
i)	Shehu's quarrels with other children his father has, many Children from different mothers	1
ii)	Psychological problems, unhappy most of the times	2
iii)	Lack of equal attention from his father	3

B.	Reasons or explanations for choosing responses in 1A above	Score
I)	His fathers lack of attention for him might be the cause of his Unhappiness and worries because if the father cares much about him he would have assisted him to solve his problem or even seek professional assistance if he(the father) fails to do so	3
ii)	Psychological problems are his most serious problem because may be, he is worried about his mother who was divorced hence does not care much about his father, becomes unhappy in the school	2
iii)	May be if he does not occasionally quarrel with his other brothers, the father will become fond of him, pay him more attention.	

- Note: Generally, reasons/explanations indicting the fathers attitude should have more weight

2.	All the possible range of things Shehu could do about his Problem	Score
I)	Ask his father's close relations to interfere (e.g. ask paternal Grandfather or grandmother to talk to his (i.e. shehu's father)	1(8)
ii)	Ask his father's close friends or business associates to interfere	1(7)
iii)	Ask his mother to interfere or his other step mothers	1(7)
iv)	Discuss directly with his father (i.e. beg his father to solve his problem	1(6)
v)	Seek for professional advice (e.g. visit school guidance	

	counsellor, school psychologists, report to childcare or societies for the prevention of child abuse.	1(5)
vi)	Report matter to school principal or class teache	1(5)
vii)	Win fathers love (e.g. send success card, birth day cards/ Presents, stop fighting with other kids, etc).	1(4)
viii)	Appeal to father's conscience (e.g. tell father your action in causing me great psychological problems, it is not fair to discriminate among one's own children, etc.)	1(5)
ix)	Point consequences (e.g. tell father I will leave your house, I will leave your house, I will move to my grandmother's House etc.)	1(9)
x)	Learn social or inter-personal problem solving techniques	1(3)
xi)	Move to his mother's house or any other relations	1(3)
xii)	Find part-time employment to support self, and education	1(2)
xiii)	Preach to the father (God forbids discriminating among one's arm children, injustice is unlawful, etc.)	1(3)
xiv)	Any other relevant response	1

3A) Selecting the best solution/alternative to solve shehu's problem

Note:- Emphasis is placed here on the quality of the choice the respondent makes. The solutions to Shehu's problem mentioned in two above, have been arranged in order of two above, have been arranged in order of significance or importance. Accordingly, the marks in the second column indicate what score a respondent gets for this sub-section. For example, if a respondent says he will choose to 'ask his father's close relations such as his grandfather, he gets the score 8, because this is considered the most suitable solution, followed by 7, and so on.

C. This sub-section is a follow-up to question 3A.. It examines the respondents understanding of why he had to choose the particular solution or alternative.

i) The highest score for this sub-section is three(3), and is given to respondents who, after indicating that solution one to question 2A is the best, now explains that: 3
Having many children from different mother probably means that Shehu's mother is not in the house, or even if she is in the house, she does not command any serious influence on the father, hence Shehu's best alternative is to get somebody who the father could probably listen to (so as to put Shehu's problem across).

ii) Explanations for other solutions other than this shall be scored a maximum of two (2) points. 2

- In general, arguments for choice of alternative shall be scored based of respondents explanation of the logic or relationship between the alternative and solving Shehu's problem particularly the relationship between him and the father, and his schooling.

iii) Any other sensible argument which shows that the respondents is aware of the implication of his choice shall be given a score or 1. 1

Solutions to Problem 3

Home Related Causes	Score
i) Death or sickness in the family (e.g. death of a beloved one, father, mother or other close relations)	1
ii) Parents separated	1
iv) Parents making too much demands on him or making all the decisions for him	1
v) Ill-treatment by senior brothers or sisters at home	1
Personal Psychological problems	**Score**
vi) Wanting to see his parents at home/thinking about his parents parents at home	1
vii) Worried about physical disability, has a sickness in him	1
viii) Fear of failing in class exams, worried about future ambition	1
ix) Has a guilty conscience, cannot stop worrying about a mistake	1

x) May be his girlfriend or best friend has left him or betray him 1

xi) Feels inferior, rejected, or he is over-sensitive to comments by friends 1

xii) Worried about poor facilities in school 1

B. Schools related causes.

xiii) Does not like the school, newly admitted into the school 1

xiv) Worried about ill-treatment by seniors 1

xv) Difficulties in copying with school subjects, fear of demotion of being sent out of school, has not paid school fees 1

xvi) Poor school facilities (e.g. no good reading, poor classroom Teaching, does not understand his lessons)

xvii) Wanting to excel in all subjects 1

C. (General causes) **Score**

xviii) Worried about economic hardships in the country, Worried about Nigerian future 1

xix) Others

All the possible solutions to Dikko's problem **Score**

i) Visit parents (e.g. during weekends, make phone calls to parents at home) 1

ii) Write letters to people at home, send greeting cards 1

iii) Ask parents for more money, provision and other items, discuss his problem with parents 1

iv) Consult school guidance counsellor, school psychologists, Ask teachers to give extra lessons 1

v) Take part in sporting activities, other extra-curricular Activities in the school 1

vi) Learn social problem solving skills, social skills, study skills 1

vii) Make new/more friends 1

viii) Change school, move to another school, join or establish a study group 1

ix) Report illness to school clinic or Doctor 1

x) Report ill-treatment by seniors or school authority 1

xi) Request for books, journals and other lacking facilities to be provided by school authority 1

xii) Find part-time job to support self 1

xiii) Others 1

3) All the possible obstacles Dikko might face in applying these solutions

i) May not have money to buy stamps, greeting cards, make Phone calls 1

ii) Parents may not be reached by phone calls, parents may be dead 1

iii) Parents may not afford to give him additional money, buy More provisions 1

iv) There may be no school guidance counsellor, school Psychologist or academic adviser 1

v) There may be no sporting facilities in school, nobody to Coach them 1

vi) There may be no books or manuals on basic social problem solving skills, social skills or study skills 1

vii) Difficulty in changing to another schools, no money, parents may not agree, other schools may not be willing to admit him 1

viii) Other students might refuse to co-operate (e.g. refuse to be his friend, accept his in study group 1

ix) Teachers might not be willing to give extra lesson 1

ix) Others.

SECTION C

Note: For this section, emphasis is on the quality of reasoning (i.e. response). Thus, where a student gives more than one reason for any of the probes to the moral dilemmas, marks were given for the highest level of reasoning (out of the two or more responses).

		Scores for question 1A(SRO-1)	**Score**
1A)	i)	Says he will not tell/gives a wrong name	0
	ii)	Keeps quiet/says nothing	1
	iii)	Tell his friends name/agrees to tell	2
	iv)	Insist that the friend must return the items and apologise	3
	v)	Any other response?	

3.	**Reasons for agreeing to tell Umar's name/insisting that Umar must return the items (LSRIU-1)**	**Score**
	i) Fear of punishment (e.g. because the security officers might detain me or refuse to let me go/keeps quiet because he does not want his friend to be punished	1
	ii) Expecting reward/exchange of favour (e.g. the security officers might give him something for telling the truth/keeps quiet because Umar has done a lot of favours for him	2
	iii) Because it is good to tell the truth/because he wants his Friend to stop doing that bad habit	3
	iv) Because the society will suffer dire consequences if crime/ criminals are not exposed/it/good/religion forbids thefts/ enjoys people to expose crime/because the constitutions or law forbids theft	4
	v) Because it is a moral duty, obligation or responsibility of everyone in the society to tell the truth.	5

2A	**Attitudes towards friendship/need for friendship (SRO-2)**	**Score**
	i) Disagrees/no it is not important	1

	ii)	Sometimes/may be good, it may be bad	1
	iii)	Yes/it is important	2
	iv)	Any other response	
B)	**Reasons for having a friend/purpose of friendship (SRIU-2)**		**Score**
	i)	Because every one needs somebody who can protect him or help him fight his enemies	1
	ii)	To satisfy one's inner likes and dislikes (e.g. if you need someone to play with) no mention of the other person's interests or desires/egocentric motives	2
	iii)	Because everyone needs someone to assist in specific Situations or contexts/reciprocity/co-operate to achieve some ends	3
	iv)	Because friendship ensures mutual collaboration overtime for both personal and social ends/someone to assist or help" A friend in need is a friend indeed"	4
	v)	Friendship is a social necessity that serves several purposes. Gives a sense of personal identity/belonging	5
3A	**Conflict Resolution strategy in friendship (Reactions to one's name Being disclosed to security Agents by a friend) – (SRO-3)**		***Score***
	i)	Says that is the end of our friendship/I will fight him	1
	ii)	Keeps quiet/says I will not do anything to him. I will forget about it.	1
	iii)	Accepts responsibility/say it is alright/he is expected to tell the truth	2
	iv)	Accepts responsibility, apologies and promise never to do it again	3
	v)	Any other response	

B.	Explanation/Reasons for response to question 3(LSRIU-3)	Score
i)	Because the friend himself may be taken by the security agents/he may be detained or put to jail	1
ii)	Because if he was the one, he would have done the same thing/expecting favour from the security officers (e.g. may be by telling them by name, they will forgive both of us	2
iii)	Because it is good to tell the truth/because he committed the Offence/so that he will not do it again	3
iv)	Because the laws expect/encourage or require that crime and criminals must be reported/exposed/because God or religion forbids telling lies/encourages telling the truth	4
v)	Because it is his own moral obligation or social responsibility to tell the truth. He is bound by social obligations to do what will be of benefit to the greatest number in the society not just loyalty to his friend.	5

APPENDIX C[2]

SCORING GUIDE FOR SOCIAL COGNITIVE SKILLS ASSESSMENT TEST

TEST B

INTRODUCTION

In general, emphasis is placed on the respondents' ability to conceptualise as many solutions alternatives, consequences, or causes, (as the case may be) to each of the problem question following the three problems in this section. A mark is given for every additional point mentioned by the respondent. However, for question 1 and 3 (to problem two), focus is on the *quality of the response.*

Solutions to problem 1

All the possible ways of getting Mani to start writing his class Assignments

		Score
i)	*Seek information, ask him why, discuss with him*	1
ii)	Advice him, encourage him, persuade him	1
iii)	Point consequences, educate him, enlighten him	1
iv)	Report him to subject teachers, classmates	1
v)	Threaten him (e.g. I will cease to be your friend)	1
vi)	Solve the problem together (e.g. assist him in writing the assignments.	1
vii)	*Solve the problem for him (e.g. write the assignment on his behalf)*	1
viii)	Tell his parents, inform his parents	1
ix)	Teach him how to write assignments, study skills	1
x)	Take to the counselling centre, academic adviser	1
xi)	Force him to write the assignment	1
xii)	Any other response	1

2. ***All the possible ways of knowing why Mani has not been doing his Assignment*** **Score**

i)	Seek information directly from him, interview him, ask him why	1
ii)	Make close observation, move closer to him	1

iii) Ask significant others in his life (e.g. parents, brothers etc.) 1
iv) Administer study habits inventory, school adjustment test, students problem inventory 1
v) Enquire from continuous Assessment Master personal records Fi 1

2. <u>All the possible consequences of Mani's refusal to do his Assignment</u> **<u>Score</u>**

i) Could reflect his continuous assessment records, also lower his cumulative continuous assessmen 1

ii) Could affect his performance in exams, lead to poor examination results 1

iii) Might be punished by the subject teachers, class master 1

iv) Teachers might dislike him, be annoyed with him, lead to strained relationship with his teachers 1

v) Parents might be displeased with him, dislike him 1

vi) Parents could be angry with him, punish him 1

vii) Could be denied writing final exams 1

viii) Could lead to demolition or could be asked to repeat the Class/year, expulsion 1

ix) His classmates might not take him serious, refuse to associate with him. 1

x) Could lead to personal psychological problems (e.g. worries, Lack of concentration in class) 1

xi) Could lead to failure in career aspirations 1

xi) Any other relevant response

<u>Solutions to Problem Two</u>.

1A Abdullahi's major problem is:- **<u>Score</u>**

i) That he is from a polygamous family/his father married an additional wife 1

ii) He is psychological concerned/disturbed about/because

his mother has been divorced 2

iii) His father's attitude towards him/difficulty in continuing his education. 3

B. Explanation for choice/response to question 1A.

Students are expected to demonstrate clear understanding of Abdullahi's problem

Score

i) Being from a polygamous family, the father will have less money and attention for all the children 1

ii) Definitely, the divorce of his mother by the father is bound to create psychological problems for him as well as difficulties in communicating his problems to the father 2

iii) If the father cares for him even if the mother is not in the house and no matter how many children there are, (the father will find a way of knowing what problems Abdullahi is facing both at home and school) 3

2. **All the possible range of solutions to Abdullahi's Problem** **Score**

i) Ask close relations of the father or his (i.e father's) Friend to interfere/discuss his problem with the father 1(8)

ii) Ask his step mother to assist, to discuss his problem with the father. 1(7)

iii) Discuss/talk directly to his father/make his problems known to the father 1(6)

iv) Report his problem to the mother/ask for his mother's Assistance 1(5)

v) Report/ask the school principal to assist solve his problem Seek guidance from school guidance counsellor, school Psychologist 1(4)

vi) Win father's love by co-operating with new wife, other wives of the father 1(3)

vii) Appeal to father's conscience, preach to him (e.g. it is not Fair to discriminate among your own children, "we are all your children" 1(3)

viii) Point consequences (e.g. your action is causing me serious Psychological problems, may leave your house 1(3)

ix) Move to mother's apartment, leave father's house 1(3)

x) Report matter to child care organisations, social welfare agencies, etc. 1(2)

xi) Take up part-time employment to support self 1(2)

xii) Learn social problem solving/apply basic steps of social Problem solving skills 1(1)

xiii) Seek for legal advice 1(1)

xiv) Any other relevant response

3A. Selecting or choosing the best solution/alternative

Note: The focus of question 3A, is on the quality of choice made by respondents. To this end, the solutions to Shehu's problem mentioned in two (2) above, have been arranged in order of significance. Accordingly, the marks in the second column indicate what score a respondents' gets for this sub-question. For example, if a student says he will talk directly to the father is considered less effective than asking the relations of the father to interfere.

B. This sub-question is a follow-up to question 3A. It examines the students understanding of the implications of the choice made in 3A above.

Score

i) Like in test A, the highest score for this sub-question is 3 marks. This is given to students who, after indicating that solution one (to two A) is the best, explain that this

is because: in view of the recent divorce of Abdullahi's the best person to approach Abdullahi's father on the problem is a paternal relation of the father or similar explanations 3

ii) Explanation to other solutions that clearly indicate Respondent's understanding of why he had to choose the Alternative he has chosen, shall have 2 marks. 2

iii) Any other sensible argument following the chosen solutions coded 2 and below in question (2)A shall be given a score of 1 1.

3. Solutions to Problem 3

		Score
A)	Personality Related Causes	
i)	May be he is too aggressive, hot tempered, quarrelsome harsh or others, too emotional	1
ii)	May be he has a repulsive, unattractive personality/too dirty Untidy, rough	1
iii)	Lacks social communication skills	1
iv)	Too arrogant, proud, feeling too big to associate with other Students	1
v)	Does not respect other people's points of view	1
vi)	Too playful, has a bad habit which other students do not like	1
vii)	He is not interested in making friends	1
viii)	Too mean (does not want to share things with other students	1
B.	School Related Causes	
ix)	May be he is new to the school, does not like the school, wants to leave the school	1
x)	May be too junior/senior (i.e. age wise) to the other students	1
xi)	May be the other students have been asked not to associate	

with him, not to take him as their friend 1

xii) The other students may be too aggressive, hostile,

Quarrelsome 1

xiii) May be the other students do not take him as their friend

Because he does not take his studies seriously or vice versa 1

xiv) May be the other students are too dirty, untidy, rough or

unattractive for his liking 1

xv) May be the other students are simply studying him, trying to

understand him before they associate with him. 1

xvi) May be the other students want to teach him a lesson for

Something he has done to them, teach him a lesson 1

C) Other General/Possible Causes.

xvii) May be he has extreme ideas about religious, cultural or other

Similar backgrounds 1

2. All the Possible range of things Yaro could do to overcome his Problem **Score**

i) Learn aggression, emotion and other behaviour control

Techniques 1

ii) Acquire better social and interpersonal skills 1

iii) Visit school guidance counsellor school psychologist 1

iv) Engage in sporting and other extra-curricular activities

in the school so as to meet more students and make or

become their friend 1

v) Re-examine himself, reflect on his inner self to find-out

possible causes of his problem 1

vi) Organise social and interpersonal skills training for the

Other students 1

vii) Solicit assistance from other students to solve his problem,

Preach to them 1

viii) Adapt less extremist attitudes to religious, cultural and other Issues 1

ix) Change school, move to another school 1

x) Persuade, cajole, lure other students to become his friend (e.g. send greeting cards, attend birthday parties, etc.) 1

xi) Adopt better manners/good habits be less playful, appear smart and tidy always 1

xii) Report the other students to the school authority, class masters or hall masters for refusing to make friends, with Him. 1

xiii) Others 1

A list of all the possible difficulties that Yaro could face in applying These solutions (i.e. 2 above) **Score**

i) There may be no school guidance counsellor school Psychologist 1

ii) Yaro may not know the basic social and interpersonal skills/ There may be no books manuals on social and interpersonal Skills 1

iii) There may be no sporting facilities or other social activities in the school 1

iv) The other students may refuse to co-operate, the school Authority may not permit Yaro to organise social and inter-Personal training for other students 1

v) Does not have the skills for self reflection or self examination 1

vi) Difficulty in moving or changing school (e.g. the other schools may not admit, him, his present school may not allow the transfer, his parents may not agree, etc. 1

vii) May not have money to buy greeting cards, buy birthday present, etc. for the other students 1

ix) The other students might doubt his intention (e.g. when he Starts to become nice to them, they might think otherwise 1

x) They might take their responses, to his new behaviours/ Approaches to them, they might deceive him 1

xi) Others 1

SECTION C

Note: In this section, emphasis is generally placed on the quality of reasoning/response. Also, where a student gives more than one reason, points may be given only for the response that *represents the highest level of reasoning among the two or more responses*

	Solutions and Scores for Question 1A (SR0-1)		Score
1A	i)	Tells a lie or denies going to them	0
	ii)	Keeps quiet when asked/says nothing	1
	iii)	Admits that he had been going there to swim	2
	iv)	Admits that he been going there to swim and promise never to do it again	3

B.	Reasons/Explanations for Agreeing to tell the truth(LSRIU-1)		Score
	i)	Fear of punishment/physical harm (e.g. says they will Punish me if they had find out later	1
	ii)	Expecting something for telling the truth (e.g. they may May forgive if I tell them the truth, or they so that they will Know where to find me in case something happens to me	2
	iii)	Because it is not good to lie to one's parents/those who Tell the truth are admired by other people	3
	iv)	Religion encourages children to tell their parents the truth, forbid telling lies. Or the laws expect people to tell the truth	4
	v)	Because, he has a moral or social responsibility for his Parents because it is a moral duty upon him to tell the truth	5

2A	Reaction to punishment by one's parents after disobeying their Orders (SRO-2)	Score
i)	Says he will be angry, he will not accept it.	0
ii)	Says he will not be happy but he will not do anything	1
iii)	Admit it is right or says the parents have the right to punish children when they disobey	2
v)	Accepts responsibility for disobey his parents and promise Never to do it again/or shows willing to apologise to them	3

Recommended Scores for Probe 2B (LSRIU-2)		**Score**
i)	Says punishment serves no purpose/he will feel bad if Punished by his parents	0
ii)	Says punishment protects children from danger of Physical harm	
iii)	Because punishment makes children to think about their *Actions or deters them from misbehaving next time*	2
iv)	Because punishment can teach children to be good or teach them what is good/bad.	3
v)	Because punishment can ensure control in the family/ Maintain order and respect in the family	4
vi)	Punishment could be/is an expression of love and are from Parents to children.	

Recommended Scores for Question 3A (i.e. SRO – 3)

Response		Score
i)	Says No/It is not important/children do not have parents	0
ii)	Only young children need parents/sometimes it depends on the type of parents	1
iii)	Yes all children need parents	2
iii)	Having parents is a social necessity	
iv)		3

Recommended Scores for Responses To question 3B (i.e. LSRIU-3)

i)	Because children need someone who provide them with specific and immediate physical needs such as shelter, food and clothing.	1
ii)	Because children need someone who will take care of them protect them from danger and help them with their materials need over time(not just immediate needs on it stage one)	2
iii)	Because children need parental advice and guidance in Deciding what to do. Emphasis on providing psychological and emotional support (e.g. children need some who will provide them with love and care), rather than material needs.	3
iv)	Because parents are (a potential) source of psychological Satisfaction and self esteem for both children and parents themselves. Responses should show evidence of this mutual needs.	4
v)	Because having parents provide children and parents with experiences that are distinct from that which could be obtained in any other interpersonal relationship	5

APPENDIX D

Upper and Lower Confidence Intervals for all Research Variables Based on Pilot Study Data

Test A.

Variable	Mean	Lower Limit	Upper Limit
SIPSS	16.367	15.6359	17.0981
SRIU	15.570	14.9051	16.2385
PSPPI	16.232	15.3553	17.1048
ATSPS	35.47	34.0527	36.8872
TEST B			
SIPSS	17.167	16.4898	17.8442
SRIU	16.103	15.2267	16.9783
PSPPI	16.203	15.2250	17.2350
ATSPS	34.880	33.4353	36.3248
SPM	47.4333	46.5549	48.9258

N = 30

(Source: Data collected for Pilot Study).

APPENDIX F

Summary of Means and Standard Deviations for all Variables (By School) Based on Pre-test Raw Scores

	Variable	Treatment N =105		Control N = 64		Combined N = 75	
A	SIPSS	X	SD	X	SD	X	SD
1	RCSP	4.410	1.045	2.453	.561	3.669	1.296
2	CSP	3.838	.981	2.000	.471	3.142	1.211
3	PCSP	3.467	.869	1.813	.393	2.840	1.095
4	SISP	3.095	.817	1.500	.535	2.491	1.082
5	AST	3.498	.927	1.219	.254	2.633	1.313
6	PDAS	3.333	.966	1.453	.502	2.621	1.235
7	RCBA	4.371	1.298	2.094	.426	3.509	1.542
	TOTAL	26.012	6.898	12.531	1.134	20.907	8.180
B.	SRIU	2.876	.982	1.519	.629	2.249	1.073
1	SRO-1	2.752	.879	1.812	.467	2.396	1.002
2	SRO-2	2.762	.984	1.797	.477	2.396	1.002
3	SRO-3	4.029	1.134	3.078	.324	3.669	.998
4	LSRIU-1	3.810	1.009	2.750	.563	3.408	.979
5	LSRIU-2	4.086	1.162	2.969	.616	3.662	1.004
6	LSRIU-3	20.314	4.832	12.935	1.327	17.781	4.786
	TOTAL						
C.	PSPPI	11.448	3.234	17.938	1.592	13.905	4.409
D.	ATSPS	15.657	4.163	33.297	3.955	22.337	9.812

(SOURCE: Data collected for main study)

APPENDIX G

Summary of Treatment Effect Sizes and their Correspondence Percentages for all Research Variables Based on

Posttest Data

Variable	Mean Treat Group	Mean Control	MT-MC.	Spooled Variance	S.E.	Percentage %
A SIPSS	N=105	N=64		N=169		
1 RCSP	4.410	2.453	1.957	3.845	.50897	50.90
2 CSP	3.838	2.000	1.838	3.332	.55162	55.16
3 PCSP	3.467	1.813	1.654	3.008	.5499	54.99
4 SISP	3.095	1.500	1.595	2.683	.5945	59.45
5 AST	3.498	1.219	2.279	2.780	.8198	81.98
6 PDAS	3.337	1.453	1.880	2.869	.6553	65.53
7 RCBA	4.371	2.094	2.277	3.787	.6013	60.13
TOTAL	26.012	12.531	13.487	22.153	.6085	60.85
B SRIU						
1 SRO-1	2.875	1.519	1.657	2.410	.6791	67.91
2SRO-2	2.752	1.812	.940	2.487	.3780	37.80
3SRO-3	2.762	1.812	.965	2.487	.3877	38.77
4LSRIU-1	4.029	3.078	.951	3.750	.2536	25.36
5LSRU-2	3.810	2.750	1.060	3.498	.3030	30.30
6LSIRU-3	4.086	2.969	1.117	3.763	.2968	29.68
TOTAL	20.314	12.935	7.595	18.182	.4177	41.77
C7PSPPI	11.448	17.938	-6.490	14.413	-.4503	45.03
D ATSPS	15.675	33.297	-17.640	24.169	-.7299	72.99

APPENDIX H

RESULT OF COMPATIBILITY TESTS

SOURCE	DF	SUM OF SQUARES	MEAN OF SQUARES	F.RATIO	F.PROB
(A) SIPSS					
Between Groups	2	30.4329	15.2165	7.0489	.0011
Within Groups	172	371.33360	2.1589		
Total	174	401.7689	2.1589		
Sheffs test		Computed Sheffs Valu=1.0390		Sheffs Range for .05	
School X					
1 11.263					
2 11.708*				3.49 3.49	
3 12.245					
(B) SRIU					
Between Groups	2	9.6918		2.8550	.0603
Within Groups	172	291.9424	4.8459		
Total	174	301.6343	1.6973		
(C) PSPPI					
Between Groups	2	15.6403	7.8201	2.7160	.0692
Within Groups	172	495.2397	2.8793		
(D) SPM					
Between Groups	2	32.4010	16.2005	1.6357	.1978
Within Groups	172	1703.5761	9.9045		
(E) ATSPS	KRUSKAL-WALLIS				
School	Mean Rank	Sample Size	H	P.Value	(using Chi. Squared Approximation)
1	95.7	62	2.22248	..3313	.000
2	83.7	49			
3	83.9	64			

* P=<. 05 (Source: Data Collected for main study)

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APPENDIX 1
RESULT OF THE TEST FOR MATURATION EFFECT

Variable	Mean (Pre-test)	Mean (Post-test)	DF	(T)Computed	(T) Critical at 0.5
SIPSS	12.2450	12.531	63	1.824 N.S	1.99
SRIU	13.1094	12.939	63	.8432 N.S	1.99
PSPPI	18.5780	17.938	63	1.7896 N.S	1.99
ATSPS	34.219	33.298	(N=18)(T=122)	W=OBS 49	

N/B NS=Not Significant.

APPENDIX J

N=175 CORRELATION MATRIX FOR ALL RESEARCH VARIABLE BASED ON PRETEST RAW SCORES.

	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	RSCP	1.000																
2	CSP	.1585*	1.000															
		.037																
3	PCSP	.0565	.1665**	1.000														
		.457	.028															
4	SISP	.0538	.0546	.0035	1.000													
		.480	.473	.964														
5	AST	.1860**	.0199	.0194	.1567*	1.000												
		.014	.458	.799	.043													
6	PDAS	.0265	.0299	.0702	.1164	.0164	1.000											
		.703	.620	.250	.119	.829												
7	RCBA	.0174	.1685**	.2889**	.1719**	.1963**	.0393	1.000										
		.819	.012	.000	.025	.009	.671											
8	SRO-1	.0783	.0434	.0980	-.0311	.0543	.0736	.246	1.000									
		.710	.569	.109	.682	.475	.332	.746										
9	ARO-2	.1215	.1451*	.0758	.01201	.1572	.0998	.0832	-.0190	1.000								
		.109	.055	.319	.0113	.038	.189	.273	.803									
10	SRO-3	.0625	.0545	.0416	.0627	.1153	.0690	.0721	-.0613	.1664*	1.000							
		.411	.474	.584	.410	.129	.329	.343	.420	.023								
11	LSRIU-1	.0364	.0257	.0486	.0347	.1197	-.0473	.1157	.1497	.0512	.0539	1.000						
		.633	.733	.523	.649	.115	.534	.129	.048	.501	.497							
12	LSRIU-2	.0469	.0774	.0651	.1103	-.0427	.0313	.2409**	.1510	.0199	.1837**	.0344	1.00					
		.538	.309	.392	.146	.595	.681	.001	.046	.793	.015	.32						
13	LSRIU-3	.1697*	.0072	.0474	-.0272	.2938**	.0129	.0480	.2149**	.0937	.1507*	.0089	0.510	1.000				
		.025	.925	.532	.721	.000	.865	.528	.009	.208	.046	.907	.422					
14	PSPPI	.0852	.0523	.0161	.0396	.0138	.0054	.1770	.0258	.0270	.0672	.1553*	.0306	.0760	1.000			
		.262	.492	.833	.603	.856	.944	.019	.735	.723	.370	.040	.687	.317				
15	ATSPS	-.0827	.1962**	-.1062	-.2013	.0380	-.1513*	.0470	-.2675**	.0751	-.0757	.0280	.0307	.1029	.0866	1.000		
		.276	.009	.166	.008	.907	.046	.537	.000	.323	.0757	.713	.686	.175	.253			
16	SPM	.1780**	.1195	.2203**	.0693	.0308	.0768	.3198**	.1462*	.1666*	.2119**	.1492*	.1089	.1598*.0	-.1188	.0354	1.000	
		.018	.115	.003	.361	.685	.313	.000	.053	.028	.005	.049	.151	.35	.118	.642		
17	AGE	-.0971	-.0180	.0534	-.0412	-.1509	.0066	.0439	.0074	.0561	.1326	.0050	.0541	-.0360	.0312	-.0641	.0150	1.000
		.201	.813	.483	.588	.046	.931	.564	.923	.461	.080	.947	.477	.636	.682	.215	.844	

APPENDIX K

N=169 CORRELATION MATRIX FOR ALL RESEARCH VARIABLE BASED ON POST TEST RAW SCORES

	VARIABLE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	RCSP	1.000														
2	CSP	.82984** .000	1..000													
3	PCSP	.8247** .000	.8606** .000	1.000												
4	SISP	.7810** .000	.7957** .000	.7621** .000	1.000											
5	AST	.8408** .000	.8675** .000	.8723** .000	.8380** .000	1.000										
6	PDAS	.7641** .000	.8182** .000	.8146** .000	.7649** .000	.6733** .000	1.000									
7	RCBA	.7763** .000	.8217** .000	.8154** .000	.7694** .000	.6748** .000	.8069** .000	1.000								
8	SRO-1	.7526** .000	.7549** .000	.7726** .000	.7387** .000	.7931** .000	.7157** .000	.7201** .000	1.000							
9	SRO-2	.7377** .000	.7165 .000	.7448** .000	.6409** .000	.6908** .000	.7166** .000	.6430** .000	.7391** .000	1.000						
10	SRO-3	.7074** .000	.6972 .000	.6757 .000	.6708** .000	.6804** .000	.6480** .000	.6417** .000	.7023** .000	.6593** .000	1.000					
11	LSRIU-1	.7174** .000	.6918** .000	.7110** .000	.6409** .000	.6908** .000	.6466** .000	.6810** .000	.6451** .000	.7258** .000	.7392** .000	1.000				
12	LSRIU-2	.7239** .000	.6907** .000	.7375** .000	.6787** .000	.7035** .000	.6591** .000	.6728** .000	.6828** .000	.7392** .000	.6971** .000	.6749** .000	1.000			
13	LSRIU-3	.7711** .000	.7149** .000	.7088** .000	.6683** .000	.7008** .000	.6560** .000	.6377** .000	.6790** .000	.7228** .000	.6875** .000	.6694** .000	.7023** .000	1.000		
14	PSPPI	-.2068** .006	-.2503** .000	-.2652** .000	-.2351** .000	-.3863** .000	-.3442** .000	-.2995** .000	-.3072** .000	.0905** .234	.0644** 397	.0039** .959	.8590** .000	.2350** .000	1.000	
15	ATSPS	-.4013** .000	-.4257** .000	-.4325** .000	-.4498** .000	-.5575** .000	-.4593** .000	-.4431** .000	-.5103** .000	-.1066** .000	-.2727 .000	-.2049** .000	-.2822** .000	-.1617** .000	-.8613 .000	1.000

*=P<. 05