

**MOTIVATION TYPES, ACADEMIC SELF-CONCEPT AND LEARNING STYLES AS
PREDICTORS OF ACADEMIC ACHIEVEMENT AMONG UNDERACHIEVING
HIGH-ABILITY STUDENTS IN OYO STATE, NIGERIA.**

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ABSTRACT

High-ability students are expected to perform consistently at a high level of academic achievement. However, literature established that some high-ability students fail to perform at a level commensurate with their ability level. Previous studies largely focused on interventions aimed at improving academic achievement of underachieving high-ability students with little emphasis on student-related factors such as self-esteem, locus of control and self-efficacy influencing academic achievement of underachieving high-ability students. This study was, therefore, carried out to examine motivation types (extrinsic, intrinsic motivation and amotivation), academic self-concept and learning styles (visual, auditory and kinaesthetic) as predictors of academic achievement among underachieving high-ability students in Oyo State, Nigeria.

Self-Determination Theory served as the framework, while the descriptive design of the correlational type was adopted. Multi-stage sampling procedure was employed. Proportionate stratified sampling technique was used to select nine senior secondary schools (three from each senatorial districts). One hundred and eighty Senior secondary II students with high-ability who were screened for underachievement through school academic records and achievement tests in English language and mathematics were purposively selected. Instruments employed were Slosson Intelligence Test ($r=0.81$) Academic motivation ($r=0.87$), and Academic Self-concept ($r=0.75$) scales, Learning Styles Questionnaire ($r=0.75$), English Language Achievement ($r=0.75$), and Mathematics Achievement ($r=0.65$) tests. Data were analysed using descriptive statistics, Pearson's product moment correlation and Multiple regression at 0.05 level of significance.

Participants' age was 16.20 ± 13.2 years and 55.0% were females. There were significant positive relationships between extrinsic motivation ($r=0.78$), intrinsic motivation ($r = 0.07$), amotivation ($r = 0.26$), academic self-concept ($r=0.35$), auditory learning style ($r=0.27$), visual learning style ($r=0.38$), kinaesthetic learning style ($r=0.42$) and academic achievement. There was a significant joint contribution of the seven independent variables to academic achievement ($F(7;179) = 47.57$; Adjusted $R^2 = 0.65$), accounting for 65.9% of its variance. Extrinsic motivation ($\beta = 0.72$), kinaesthetic learning style ($\beta=0.19$), intrinsic motivation ($\beta=0.06$), amotivation ($\beta=0.06$), academic self-concept ($\beta=0.06$), visual learning style ($\beta = -0.06$) and auditory learning style ($\beta = 0.01$) contributed to academic achievement.

Extrinsic and intrinsic motivation, amotivation, academic self-concept and learning styles enhanced academic achievement among underachieving high-ability students in Oyo State, Nigeria. Special education teachers should take cognisance of these for improving academic achievement of underachieving high-ability students.

Keywords: High-ability students, Academic achievement, Underachieving high-ability students

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CERTIFICATION

I certify that this study was carried out by Kemi Adejoke AKINMOSIN (Matric No. 67093) under my supervision in the Department of Special Education, University of Ibadan.

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DEDICATION

This research is dedicated to Almighty God who gave me the grace to start and complete this Ph.D programme; my late parents Mr. Jonathan OkeOgunniyi and Mrs Elizabeth Ogunniyi, my darling husband, and my children.

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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Students attend school so as to acquire the knowledge that would lead to their academic achievement. Academic achievement results in mental liberty and social freedom thereby ensuring a good living both in the present and future of the high ability students and the nation as a whole. It also determines their future prospects, especially that of the nation (Muraina and Oyadeyi, 2014). Every parents, teachers and guardians wish that their children, wards and students obtain good result. Thus, academic achievement is the display of knowledge acquired. It is also skills developed from the school. Therefore, the level of performance are indicators of achievement since, it is evaluation of the work quantified by marks or grades. It is the expectation of every society and every school that the high-ability students make crucial and outstanding positive contributions to community development. This perhaps is the reason why most countries of the world deliberately identify and nurture the high-ability students with the aim of making them positive contributors and agents of development and Nigeria is not an exception among these nations.

The Nigerian government's major objective with respect to education for all students including high-ability students is creation of appropriate environment for them to acquire knowledge and become patriotic citizens through the development of their talents, natural endowments/traits in national interest for economic and technological development (FGN, 2014). Fakolade (2009) identified high ability students as those who demonstrate outstanding potentials. Furthermore, he described them as physically active. According to Adelowun (2015) they display unusual curiosity and a large number of ideas. The high-ability students exhibits strength in cognitive fields as a result, they require activities beyond that which is provided in the school settings which will fully enhance their strength (Clark, 2012). Despite all these capabilities, however, some of these students, whom so much is expected from, perform below the level that is expected of their abilities earlier expressed. These can lead to frustration for all the stakeholders involved.

This unexpected level of poor academic achievement is recognized as underachievement due to terrible inconsistency observed in the expected achievement and actual achievement. An underachieving high-ability student is one who exhibits capability to excel but who eventually

does not perform up to expectation. He or she falls short of fulfilling the documented potential. Expectedly, this creates concern for the stakeholders involved. It is frustrating to see a child with ability to achieve possibilities and yet not attain the level. The teachers and of course the parents, get glimpses of the capabilities, only for their expectations and hopes to be dashed and instead replaced by a feeling of apathy (Reis and McCoach, 2015). The concern regarding academic underachievement among high-ability students has gained ground in recent times. Adelodun, (2013) submitted that appropriate interventions for underachieving high-ability students remain controversial issues. Apart from any serious physical, mental or emotional issue, underachievement among high-ability students can be caused by some psychological or personal factors including both factors in the home and at school. A singular definition of underachievement as a concept has proved to be difficult. A universal definition has not been easy to find and this has persisted for years.

Divergent opinion exists on the definition of the occurrence of underachievement among high-ability students. There appears to be a major reason for these differences as researchers have come to use several measures to arrive at who may be categorized as an underachiever, since, using intelligence tests only for some high-ability students, portends danger. Gallagher (2016). Gallagher, stressed on the risk involved in labeling the underachieving high ability because of poor academic performance. This has been related to the awareness that not much has been found concerning how their intellect function. Underachievement is indicated by difference between expected and actual performance of an individual (Lau and Chan, 2017). Several definitions however have addressed the issue of underachievement and to a large extent contributed to the definition. Many definitions underscore this gap between potential or ability and achievement. That is, the incapability of the high ability students to achieve expected and subsequently maximized potentials is a uniform factor in many of these definitions.

Ability and performance as dynamics of achievement are factors which are not static rather they are constantly drifting and therefore expected to change over time. These two must be put into consideration, since the position provides a general view of the concept of underachievement. The concept underachievement is as complicated as those high ability students who have been labeled as such. A student's performance at different times differ, these variance could be as a result of the degree of preparation before examinations. It is not impossible to see the same student, who though has invested a reasonable level of preparation,

not to perform well like he or she did earlier at other times. Adelodun (2013) submitted that the phenomena, underachievement is a behaviour that changes over time. Behaviour is directly modified unlike attitude. He went further to emphasize that the concept is not sets of work attitudes. Ogonnia, (2016) in his research involving the high-ability students in some secondary schools in Nigeria, had earlier submitted that behaviour problems, determine the causes of underachievement and not deficiencies in intellectual ability. Some school of thought is of the belief that to define it, the various components of underachievement is a more precise factor to put into consideration.

This is because underachievement is content and situation specific. As a result, one can observe that often, high ability students who did not excel in academics, could turn out to attain success in aspects that are outside school activities. These could be seen in areas like sports, music and so on. Therefore, to mark a student as underachieving underscores those areas where the student is not experiencing positive and successful outcome. To mark or label those areas of underachievement rather than the student is the appropriate thing to do. It can be adduced from all indication as evidenced in literature, that a definition which is acceptable universally of the term underachievement is under contention. The underachieving high-ability students include those students whose performance in a specific subject is not attuned with the assumption others have of them. They do not exhibit interest in learning and consequently their performance in some school subjects is not encouraging. Although, they possess appropriate learning skills but still underachieve. These inability to achieve (failure to perform) or attain maximum potential, could be linked to some students-related factors. Self-esteem, self-efficacy and locus of control are few examples of students-related factors that can influence intellectual ability of students.

It is pertinent to state that self-imposed limits is placed when a student sees himself or herself as not being able to perform to optimal heights, (Adelodun, 2013). The study of motivation has received attention from various psychologists, educationists and other researchers from various fields. Their different perspectives accruing from experience in different fields of study, has effect that is significant on learning and achievement. The concept of underachievement among high-ability students is entwined with motivation types, self-concept and learning styles. Maslow, 1970 (in Coetzer, 2014) explained that human motivation could be described from intrapersonal and interpersonal perspectives. This is explained as the driving force propelling people while working towards a goal, which is primarily at the top of all human

efforts. Pintrich and Schunk (2012) also opined along this line, they submitted that motivation can be explained from a cognitive perspective. They added that the process that enhances the activation and sustenance of goal-oriented activity is motivation. Suffice to say that, motivation is a process that arouse, direct, and sustain behaviour. It is a psychological procedure that signifies that a force is going on within or outside of a person. This directs a goal-oriented behaviour and maintains that it is important in academic achievement because it describes cognitive, emotional, and behavioural indices as important attempt in education.

Motivation, in order words, influences academic performance, as regarding underachieving high-ability students. Ogundokun and Adeyemo (2017) in similar vein, agreed that behaviour is directed and sustained. Further, motivation as a personal orientation influences approach to academic work and achievement. The three distinct types of motivation are intrinsic motivation, extrinsic motivation and amotivation which are also connected. A student is intrinsically motivated because the desire to learn is from within and will participate in learning tasks for the sake of fun derived from it. They understand the importance of mastery of concepts, as such, they learn for the mere satisfaction derived from learning. Their focus is on learning goals. Those high-ability students that can be classified as possessing extrinsic motivation engage in school tasks in order to acquire good grades, get approval and avoid punishment. The nucleus of their motivation is centred on obtaining positive outcome, which is a performance goal. The approval from teachers, parents, and peers is of utmost importance to them, they also avoid negative judgments of their competence (Duda and Nicholls, 2012).

Deci and Ryan (2015) observed that high-ability students are either internally or externally motivated. They can also be amotivated along the same continuum. These researchers believe that intrinsic motivation (internal) is an inner force of the individual, which propels performance, because of pleasure and satisfaction that is experienced during learning while making attempt at new ideas. At the extreme of the continuum, is externally induced motivation (extrinsic) which signifies the engagement in a task to achieve an end for tangible outcome that is derived through task performance and not as a result of fun and enjoyment of performing the task. They stated that amotivation, is when there is a lack of intention to act and or not even taking action in whatsoever way. These researchers furthermore, pointed out that the different profiles of motivation are related. It is possible for an individual to move far along the continuum of self-determination from amotivation to intrinsic motivation with increasingly positive developmental

outcomes. Motivation makes a person to act in specific manner under particular condition and is part of the high-ability students' goal structures. Motivation is also situated on their beliefs of a high-ability student on what is important. These determine whether the students will engage in a specific pursuit (Ames, 2002).

Intrinsically motivated high-ability students who are involved in academic tasks tend to exhibit greater creativity and risk taking. They exhibit more efficient performance and learning strategies when the individual is not extrinsically rewarded. Intrinsic motivation is related to how the underachieving high-ability students perceive their competence. They could be motivated by good grades or curiosity and through the orientation towards academic achievement, can attain mastery of different skills (Ames, 2002). Achievement, according to the findings of some researchers, is that ability and competence lead to the willingness to acquire knowledge that will be relevant for progress. Intrinsic motivation is not simple to apply because it combines the influence of these domain (Eccles, Wigfield and Reuman, 2016). When high-ability students see themselves as capable of performing to an optimal level in school activities, the tendency to attribute greater value to academic activities will be high as opposed to those students who do not perceive themselves to be capable of excelling. The interest in achieving positive outcome also influences short term strategies utilized inhibiting or augmenting achievement. Eccles, et al., (2016) argued that there is a possibility that high-ability students are comfortable with their academic work. They went further, to state that these set of students must be positively challenged in order to achieve and must work to achieve the set goal before developing the intrinsic motivation.

There is a link between high motivation and reduction in the rate of underachievement which will consequently result in improved performance. In every academic setting, like secondary education for instance, the most common determinants of achievement in academics is motivation (intrinsic and extrinsic motivation) of a high-ability student for learning. It is highly important to acquire an understanding of the various forms of motivation. This will assist educators to help high ability learners to attain the motivation relevant in the achievement of set goals. According to Coetzer (2014) motivation must be the combined effort in academic task with the desire to achieve. It involves the awareness of the goal of learning with favourable attitude towards learning. Importantly, all of the mentioned elements should be linked together, so as to achieve the set goal related to academic tasks. This will assist the student to be motivated

to learn. Mnyandu, (2016) further stated that no matter how an academic task proves to be difficult, the intrinsic motivation of the student would come to bear and help in task through students' persistence. The emergence of intrinsic motivation as factor relevant for teachers cannot be over-emphasized. Passion and tenacity are basic factors that define intrinsic motivation. Harackiewicz, Barren and Elliot (2014) asserted that intrinsically motivated students with high-ability exhibit higher concentration level in class.

Intrinsic motivation ensures that the high-ability students exert the efforts and skills required for the necessary tasks that is to be done. Elaborating further, Harackiewicz et al, (2014) impressed on the advantages of intrinsic motivation. These students are likely to spend their time and energy on a specific academic topic or task that they find to be interesting. It is clear from all indications, therefore that all the exhibited behaviours will influence academic achievement. Amotivation is one type of motivation that was identified by Harackiewicz, et al, (2014) in underachieving high-ability students. Helping the underachieving high-ability students to learn through threat and punishment had spectacular and suspenseful influence on the tendencies to achieve among students. Amotivated students do not possess the intention to exert the required effort and consistency necessary for attainment of academic excellence. Motivation to participate in learning is an intricate situation because of several sources that includes self-concept (Dornyei and Clement, 2010).

The phenomenon of self-concept refers to different categories of skills, and significance that defines a person (Berk, 2016) with two types that is non-academic and academic self-concept. Assessing personal academic ability is related to academic self-concept. The student is able to make an assessment of his or her capability to adapt to learning in academic context, when compared to others in the school (Fin and Ishak, 2012). This has implications for their well-being as well as their achievement, since it is a measure of the confidence that they repose in their abilities (Fin and Ishak, 2012). It influences their opinion as regards the tasks at hand relating to all academic achievement, planned goals and academic aspirations (Berk, 2016). Social comparison is an important factor that plays a crucial part regarding the development of the self-concept. High-ability students form perceptions of themselves through the use of peers as a reference group. A function of personal academic achievement is academic self-concept which also references the group achievement (Trautwein, Ludtke, Marsh, Koller, and Baumert, 2016). Assimilation in students with high-ability can be enhanced through academic self-concept

(Marsh, Kong, and Hau, 2000) which implies that academic self-concept of a high-achieving group is positively affected by the above-average performance.

Marsh and his collaborators (2001) proposed the Big-Fish-Little-Pond effect (BFLPE) which asserted that academic self-concept and academic achievement are positively related but contend that student with average ability can influence the development of required academic self-concepts. Academic self-concept in the submission of Red, Brooks and McGarvey (2009) is a personal perception of an individual's level of competence in an academic setting. Similarly, Trautwein et al, (2016) agreed that academic self-concept is evaluation of individual ability with regards to a specific academic domain. It has to do with a description of self or personal perceived academic abilities. While Marsh et al., (2004) averred that the academic self-concept of the high-ability students significantly predict academic achievement. Academic self-concept as a construct refers to comparison either internally or externally. The comparison is made by students between personal achievement that is internal and peers who makes up the external comparison. Therefore, high-ability students must remain at the peak since their achievement can positively compared with the performance of other students. Marsh, Chessor, Craven and Roche, (2004) averred the evidence indicating that the high-ability students possess a positive academic self-concept.

Marsh et al (2005) suggested further that they have more of these than the average students possess which could be evident when the high-ability students find themselves among students with different levels of ability. Furthermore, a positive self-concept has to be parallel to and or related to the academic achievement among high-ability students (Marsh et al., 2005). Literature has also indicated that underachieving high-ability students most times show low academic self-concept and low motivation. The individual differences in their preferences are employed to depict different phases of the learning cycles. Against this backdrop, this research work tilted towards the study of the learning styles of the underachieving high-ability students as it relates to the self-perception of their self-competence. The high-ability students possess a mix of learning styles and exhibit strength and preferences. Remali, Ghazali, Kamaruddin and Kee (2013) submitted that none of the high-ability student has a single style or preference of learning which is their exclusively preferred ways of acquiring knowledge.

These learning styles are dynamic as they also change the way they internally interpret, recall information, and even the vocabulary chosen. Remali, et al., (2013) affirmed that the

learning styles of a high-ability student shows how this student deal with his or her studies using different approaches through which they perceive their environment. They further show their adaptation skills in how they can cope with the task given while expecting positive and favourable outcome or results. Kolb and Kolb (2015) had earlier indicated that the concept of the learning styles explains individual learning preferences among students' with high-ability which is due to students' preference during various stages involved in the learning cycle. Cognitive, affective, and physiological domain determines the learning behaviours of students' with high-ability. The domain acts as indicators of how high-ability students perceive and respond to their environment in learning context. They further added that learning styles are individual consistencies. The high-ability students apply learning styles in perception of information, memory, thinking, and judgment which cut across all stimulus condition.

In every area of life, high-ability students are influenced by learning styles. These effect can be appreciated in their daily activities such as in their sleeping, talking, writing and so on. They respond to these activities or actions according to these traits (Bayley, 2012). To increase their success beyond doubt, the learning styles of a high-ability student should be determined and learning mediums arranged (Dunn and Dunn, 2012). The perception a high-ability student has of his/her ability to manage relationship with other people affects his/her behaviour and consequently defines the individual learning styles. The learning activities should be organised in line with the different styles of students with high-ability because doing that appropriately will help in estimating the expectation of learning. This would assist the teacher to arrange the process that can be employed in teaching high-ability students (Sunbul, 2013). More success will be achieved by high-ability students due to awareness of individuals learning styles and consequently the development of a positive self-concept. This can be attributed to learning styles which influences how high-ability students learn, how teacher carry out their responsibilities, and the interplay of the two.

The two interact and influence the academic achievement of the high-ability student. Every high-ability student is born with particular and peculiar learning styles. These peculiar learning styles are influenced by cultural value, personal experience, level of maturity and development but are contextual construct as it indicates and determines the experiences students possess before the learning situation(Sunbul, 2013). This is an aspect in the content that is relevant to the experience of students because the high-ability student has particular and preferred ways of

responding to stimulus such as perceptions, organization and retention (Bayley, 2012). The ways the high-ability learners acquire knowledge varies from each other (Fakolade, 2009). Research has discovered that the structure of the brain has influence on the acquisition of language. Vaishnav (2013) identified the three basic types of learning styles as visual which is responsible for reading, aural for auditory-perception and physical for Kinaesthetic, which is for carrying out actions. Also, most people show a distinct preference for one of these methods when compared with the others (Vaishnav, 2013). The most crucial and significant issue in learning to learn is, for an underachieving high-ability students to be responsible participants during classroom instruction. One pertinent thing for the high-ability student is to determine personal learning styles, understand the attributes of each style and strive to manage these accordingly.

This way, the underachieving high-ability students can get information required without the need for the assistance of others. Eventually, taking responsibility for personal learning by students with high- ability will be linked with the process of learning. They develop the understanding for personal form of learning styles. This helps them to become more satisfied with their environment. Every chance for learning is translated to an opportunity. The student has the major responsibility of using various learning styles that are developed to suit the teaching situation (Coffield, 2014). Preferred learning styles will be developed as a result of the assumption that learning occurs differently among two people because everyone is different from one another. The opportunity to learn through the use of a wider range of methods effectively is offered by the teacher of underachieving high-ability students. This eliminates the monotonous learning environment. McCarthy (2012) maintained that though every detail may not be known, however, being in the knowledge of the learning styles of an underachieving high-ability student with different motivational types will enable the teacher to plan the instructional content properly and accordingly.

In every learning situation, learning styles is critical, so when underachieving high-ability students know and understand their learning styles, they should be able to integrate it during the acquisition of knowledge. Learning will be done without disturbance, quickly which will therefore yield positive result and successful outcome. Secondly, the identification of personal learning styles will enable the students to become efficient in problem solving. The development of the ability to successfully solve a problem will result in ability to control and take charge of an individual's life (Biggs, 2014). It is therefore imperative for the high-ability

students to acquire knowledge using suitable learning styles. The underachieving high-ability student who has not mastered his or her own learning styles could suffer setback in learning due to challenges which may consequently result to frustration.

Knowledge of learning styles help to provide information to the underachieving high-ability students in the most appropriate form. This gives a clear understanding and explains the reason an individual learns in different ways and in better ways than others. It will be easy for high-ability students to acquire knowledge that is constantly changing when the factors like motivational types, academic self-concept and learning styles are considered. It is worthy of note that learning among this group of students will improved as the styles consistent with the individual is identified. The acquisition of knowledge using the suitable manner will reduce overbearing effect on the classroom interaction at the point where the students is supervised by the teacher. Students with high-ability are responsible for the way they learn. These high-ability students identify their learning preferences because they know the content that should be learnt and also understand how to manage the learning situation. This changes to a large extent will enable them develop interest in learning new concepts (Fidan, 2016).

Underlying the concept is the premise that effective and efficient learning is achieved when students focus their preferred learning strength. Rayneri, Gerber, and Wiley (2014) made the assertion that to deal with underachievement, understanding individual learning styles must be a focal point of reference. They added that the learning styles of underachieving high-ability students has beneficial function in classroom achievement. The teacher understands the relevant learning styles among high-ability students and endeavour to introduce differentiated curriculum, which would eradicate the issue of unfulfilled potentials. Failure to resolve the issue will result in more problems during learning situation. This research has been undertaken as a matter of urgency and observed an educational need to investigate the relationship (associative and predictive) existing between motivation types (intrinsic, extrinsic motivation and amotivation) academic self-concept and learning styles (Visual, Auditory and Kinaesthetic learning styles) as they relate to the academic achievement of underachieving high-ability students.

1.2 Statement of the Problem

Students' academic achievement is a crucial indicator in determining that learning is actually taking place. But when the high ability students with great academic promise fall short of these

academic expectations, that is, when they fail to perform at a level that is commensurate with their previously documented abilities, parents, teachers and guardians become frustrated and disappointed. This is an area of great concern for these stakeholders, even for the counsellors who see the great possibilities exhibited by the child. Occasionally, these professionals get a glimpse of their potentials, but then, like a flash, it disappears and in its stead is a feeling of apathy. This is because high-ability students end up with a discrepancy between their potential and achievement. The underachieving students end up demonstrating negative abilities and low achievement in one subject or the other, leading to, negative attitudes towards school subjects and to teachers. These negative outcomes of underachievement include failure in school, repetition of class or grades, exhibition of criminal tendencies, truancy and eventual dropping out of school. Non-existing or low motivation, negative academic self-concept and inappropriate learning styles that is inefficient could make them to end up with underachievement in one school subject or the other.

This simply implies that high-ability students could underachieve as the presence of motivation involves combining effort in addition to willingness to achieve the goals of learning with favourable attitude towards acquisition of knowledge. When the desire to attend school regularly, study, or sustain area of interest is diminished, performance is definitely going to be low and consequently lead to underachievement in such school subjects. The negative academic self-concept of underachieving high-ability students is also another aspect. This occurs when they possess negative self-perception of their ability when compared to the relevant others (peers) in the school. The student sees himself or herself as falling short of the requirement for excellence in such school subjects. This self-perception often times may not be visible in the academic context, yet it has influence on academic achievement. An ineffective utilization of learning styles could also be a factor contributing to academic underachievement in high-ability students.

Suffice to say that, these three basic learning styles which are Visual, Auditory and Kinaesthetic are important and necessary for effective learning to take place. Therefore, when a high ability students fails to utilize one of these three learning styles, either because of one deficiency or the other, his or her ability to learn effectively will diminish, consequently, performing below expectation (underachieve) becomes the resultant effect. The underachieving high-ability students would attain an optimum achievement in their academic pursuits when they

develop an intrinsic motivation, positive academic self-concept and effective use of learning styles. Therefore, this study seeks to investigate the relationship existing between the independent variables (intrinsic and extrinsic motivation, amotivation, academic self-concept and learning styles and the dependent variable (academic achievement).

1.3 Purpose of the Study

This study examined how motivational types, academic self-concept and learning styles predicts academic achievement among the underachieving high-ability students in Oyo State, Nigeria.

The purposes of the study specifically were:

1. Examine the relationships that exist between independent variables which are: Intrinsic motivation, Extrinsic motivation, Amotivation, Academic self-concept and Learning styles and the dependent variable which also is the Academic achievement among the underachieving high-ability students.
2. Determine the joint contribution of the independent variables to dependent variable (Academic achievement) among underachieving high-ability students.
3. Determine the relative contribution of the independent variables to dependent variable (Academic achievement) among underachieving high-ability students.

1.4 Research questions

1. What is the relationship between independent variables – Extrinsic motivation, Intrinsic motivation, Amotivation, Academic self-concept, Auditory learning styles, Visual learning styles and Kinaesthetic learning styles and dependent variable (Academic achievement) among underachieving high-ability students in Oyo state.
2. What is the joint contribution of the independent variables - Extrinsic motivation, Intrinsic motivation, Amotivation, Academic self-concept and Auditory learning styles, Visual learning styles and Kinaesthetic learning styles to academic achievement of underachieving high-ability students in Oyo State.
3. What is the relative contribution of the independent variables- Intrinsic and Extrinsic motivation, Amotivation, Academic self-concept, Auditory learning styles, Visual learning

styles and Kinaesthetic learning styles to dependent variable of Academic achievement of underachieving high-ability students in Oyo State.

1.5 Hypotheses

The following hypotheses were tested at 0.05 level of significance:

There is no significant relationship between

1. Intrinsic motivation and Academic achievement of underachieving high-ability students in Oyo state.
2. Extrinsic motivation and Academic achievement of underachieving high-ability students in Oyo state.
3. Amotivation and Academic achievement of underachieving high-ability students in Oyo state.
4. Academic Self-concept and Academic achievement of underachieving high-ability students in Oyo state.
5. Auditory Learning styles and Academic achievement of underachieving high-ability students in Oyo state.
6. Visual Learning styles and Academic achievement of underachieving high-ability students in Oyo state.
7. Kinaesthetic Learning styles and Academic achievement of underachieving high-ability students in Oyo state.

1.6 Significance of the Study

The findings derived from this study, provided necessary data that would create a platform for developing motivation, academic self-concept and learning styles among underachieving high-ability students. It would also encourage the development of study behaviours and positive attitude in academic pursuit of the high-ability students and help in reduction of amotivational patterns among underachieving high-ability students. A desire to achieve to the optimum among underachieving high-ability students would be fostered while assisting them to develop task-commitment that is needed to attain expected academic achievement. The benefits, for the teachers of the underachieving high-ability students too cannot be under-estimated as they would

also benefit from the study by equipping themselves with information on developing the intrinsic and extrinsic motivation, positive academic self-concept and efficient learning styles.

This help in reducing the instances of truancy and criminal tendencies that may result from loss of self-regulated autonomy which comes from amotivation. The abilities of the under-achieving high-ability students will be tilted towards achieving excellence as their willpower to use appropriate learning styles is developed. Hence all the stakeholders such as their instructors, parents and guardians, special educators, non-governmental organizations (NGOs), psychologists, guidance counsellors working with the high ability students, will benefit from the findings of the study also. The findings of this research will help them and the school administrators to develop high motivation, positive academic self-concept and efficient use of learning styles. The identification and development of intrinsic and extrinsic motivation will assist them towards the attainment of positive academic outcome.

Their positive academic self-concept and efficient use of learning styles would be increased while improving and sustaining their academic achievement. On these bases, it would encourage an avenue for further study, the findings and improvement in academic achievement among underachieving high-ability students. The counsellors would utilize the results for counselling the underachieving high-ability students and even the regular students. The government would ensure that the set objectives of the education of the high-ability students is easily achieved. The results of this study will serve as basis for further studies and research on the potentialities that can further help the high-ability students for academic achievement.

In summary, intrinsic and extrinsic motivation among underachieving high-ability students as regards high academic achievement, would be developed. The amotivational patterns in underachieving high-ability students would be corrected since it enables the identification and utilization of a positive academic self-concept and efficient use of learning styles among underachieving high-ability students. This study will also serve as a source of literature for researchers, thus filling the lacuna resulting from the dearth of literature in this area.

1.7 Scope of the Study

The study examined types of motivations, academic self-concept and learning styles as predictors of academic achievement of underachieving high-ability students. The study identified underachieving high-ability students in Senior secondary school II from nine (9) selected schools

in Oyo State. The local governments covered in the study were Afijio, Akinyele, Egbeda, Ibadan North, Ibadan North-east, Ibadan South-east, Irepo, Iseyin and Itesiwaju.

1.8 Operational Definition of Terms

Academic achievement: This is the scholastic performance of high ability students in schools and it is measured in terms of their achievement tests in English language and Mathematics in this study.

Underachieving high-ability students: These are students who possess high academic potentials but whose academic records show a discrepancy between their potential and academic performance in English language and Mathematics.

Motivational types: These are factors that affect students' desire or the driving force that propels high-ability students to excel in their academic pursuit.

Intrinsic Motivation: Is the willingness to achieve an academic pursuit by high-ability students for the pleasure or satisfaction participation will give.

Extrinsic Motivation: is the academic drive by high-ability students to achieve for the sake of external rewards given for the participation in or for the completion of a task.

Amotivation: Underachieving high-ability students is amotivated when they fail to see any contingency between their actions and the outcomes, since they lack the task commitment to the academic pursuit.

Academic self-concept: This is the perception a high-ability students has of his or her ability within the academic realm.

Learning styles: Learning styles are methods of processing information peculiar to an high-ability students that is presumed to allow him or her to learn best.

Visual Learning styles: is a method in which high-ability students learn best using their sense of sight. They show an affinity for books, reading and other visual aids.

Auditory Learning styles: This is a method in which high-ability students use their sense of hearing mostly in learning. They understand much faster what their teacher explains to the class.

Kinaesthetic Learning styles: is the most physical of all the learning styles. Kinaesthetic learners absorb information best through touch, movement and motion.

Predictors: these are the independent variables (intrinsic motivation, extrinsic motivation and amotivation) that leads to the independent variables which is Academic achievement.

CHAPTER TWO

LITERATURE REVIEW

This chapter deals with reviews of relevant literature done conceptually, theoretically and empirically.

2.0 Conceptual Review

2.1 Nature and Concept of high-ability Student

Over time, the definition of high-ability students has ranged from cognitive and scores based on test of intelligence, to a view of intelligence from the multi-dimensional ability, potential and talents., Terman (1925) in his studies involving individuals with exceptional high cognitive aptitude, submitted that high intelligence is related closely with performance in academic and high score in Intelligence Quotient test is connected to ability. Terman asserted that intelligence as characteristics cannot be easily change because it is inborn and over time will not change significantly. Terman viewed intelligence as acquired by hereditary, which is solely a trait gotten through the parents. Many biases trailed Terman's era regarding the high ability persons who are under-represented in various ethnic groups. Today, they now recognize that such test can be inherently biased against individuals who are not from the dominant culture or who have not received a strong traditional educational foundation. Genetic and environmental factors are both important in determining the level of an individual's intelligence (Sternberg, 2000). In other words, Intelligence Quotient is no longer thought of as a fixed attribute of a person or as signaled only by a high score on an intelligence test. Rather, Intelligence Quotient is now being used as one of the premises for the identification of high ability students.

The Slosson classification chart, inferred that any child with an Intelligence Quotient score of 120 and above can be nominated as high-ability student. Nevertheless, ability and talent is defined in a specific way that all the learners who can profit from special education are also identified. Ability is the likelihood of an individual to succeed at the end of an upper talent continuum (Grantham, 2002). Thus, the concept of high-ability has gone beyond the Intelligence Quotient score to include all aspects of abilities as long as the abilities are expressed as continuum at the upper end. From all indications, the definition of who has high-ability is evolving and becoming less restrictive. The earliest definitions were exclusively based on intellectual potential as measured by intelligence test. Recently, a proposed definition

is wider in scope and recognizes the many facets of talents. These recent definitions and visions of high ability began to emerge at the end of the last century, as call for a new consensus definition that continues today (Coleman, 2004; Cramond, 2004; Gagne, 2004). No child is Left Behind (NCLB), (2002) posited that the high ability persons are those who exhibit high ability as it relates to cognitive, creative, leadership or artists, specific area of academic and who may require services beyond what is provided.

Factors such as intelligence, creativity, and talent are keys to many definitions (Daris, 2003; Dans and Rim, 2004; Stephens and Kernes, 2000). This is important to note so as not to undermine the screening procedure for the participants of this study. Gallagher (2012) postulated that some people are born with a neurological constitution; this accordingly, allows them to learn quickly, process information more efficiently, and create ideas more than their peers, given favourable environment. Gallagher asserted that environmental factor can inhibit or facilitate the development of individual's talent. Those having similar view, also believe that without some innate predisposition for accelerated achievement or performance, exceptional development is not possible. So, it can be surmised that high ability is multidimensional and that high academic aptitude and intelligence are facets of it. Intelligence and high ability is widely accepted as the best explanation of ability (Kornhaber, Fierros and Veenema, 2014). His view of ability is that, it is flexible and multidimensional.

Multiple intelligence theory refers to the various aspect of intelligence possessed by an individual in degree that vary. Gardner proposed that these multiple intelligences could be musical, verbal, visual-spatial, naturalistic, interpersonal, kinaesthetic, intrapersonal and existential. In addition, he submitted that each of this intelligence was independent and different from those that were developed. The importance of this, is its addition to continuing debate on the inadequacies of using IQ tests. Rather than focus on the analysis of test scores, Gardner submitted that expressing the human intelligence numerically, cannot give an accurate picture of people's abilities. He initially described seven types of intelligences, but went ahead to coin nine distinctive intelligences based on skills and abilities, within different cultures. Gardner (1999) believed that the intelligence quotient is too narrow in focus and argued that there are probably many more unaccounted for. Gardner felt that the testing for evaluation high ability and talented students were limited in

identifying the gifts the children have. He felt that students should be able to demonstrate their special talents. This work on multiple intelligences has a profound impact on the practices on education. The information presented by Howard Gardner helped teachers to develop curriculum that enable students with high-ability can learn efficiently. The first two, were associated with academics, schools norms, three are linked with the arts while the remaining two are associated with personal intelligences. Later in 1999, Gardner included two more.

The full explanation of the nine intelligences is:

1. Linguistic Intelligence: This involves being sensitive to the meaning and order of words. Authors and people in the media exhibit high degrees of linguistic intelligence.
2. Logical-mathematical Intelligence: Describes the ability to solve calculus and logical systems that is complex. Scientists, Mathematicians, Accountants, Engineers, and Computer programmers demonstrates intelligence in logical-mathematical.
3. Musical Intelligence: High musical ability is possessed by Musician, composers and dancers who are capable of appreciating and creating music.
4. Spatial Intelligence: the ability to interpret the visual world and recreate the perceived. This is highly developed in Artists, Architects, Designers and Sculptors.
5. Bodily-Kinaesthetic Intelligence: This deal with the potential to manipulate the body to expresses self, towards achieving a goal. Those who display bodily-Kinaesthetic intelligence are Dancers, Basket players and Goal keepers are among.
6. Interpersonal Intelligence: Teachers, psychologist, religious and political use this type of intelligence for motivating others.
7. Intrapersonal Intelligence: having an understanding of personal emotions. Some writers and counsellors make use of it in guiding others.
8. Naturalistic Intelligence: Ability to recognize and categorize plants, animals and other objects in nature. Molecular biologist and traditional medicine practitioners who work with herbs for remedies use naturalist intelligence.
9. Existential Intelligence: Being sensitive and showing capacity for tackling issues that has to do with human existence, meaning of life and death.

Finally, exploring the multiple intelligences allowed students to be successful according to their learning orientation. It also accommodates the strength that the teacher finds in their students. Marland (1972) reported that those identified by having scored sufficiently high enough on an assessment test due to their outstanding abilities are the academically gifted students because of the high performance who will require differentiated teaching programmes which are beyond the school curriculum of writing and reading programmes of the regular education. The demonstration of ability according to Marland (1972) can be in general cognitive skills, definite area of academic, creativity or productivity, ability to effectively leader, visual and performing arts, and gross motor skills. The focus of the Marland report was the realization that high-ability children are gifted across many fields and not particularly to an area. Additionally, the high-ability students can also have learning difficulties or disabilities. Student with high ability performance are usually exceptionally good in one or two areas of domain when it compared with that of students based on age, environmental exposure and experience but it defined by excellent gifts talents, motivation or interests (The Indiana Codes, 2007). The important thing to note is that students who possess high ability need to be properly motivated, academic self-concept should be positive and good learning style to be well nurtured and to prevent underachievement.

The child develops some set of aptitudes or gifts through interaction with different interpersonal and environmental catalysts into talents (Gagne, 1995). The intrapersonal catalysts enable motivational initiation which will play a crucial role in the process of identification and sustenance of developed talents. On the other hand, catalyst in the environment allows for the interaction between the school community and teachers roles is crucial in recognition and progress of high-ability. According to Gagne (1995) the natural abilities or aptitudes of high ability students is superior significantly to average students intellectually, creativity, socially and physically who demonstrate dexterity in a particular area of domain of human ability. Gagne added further that 10% of the population could at least be considered as having high-ability in intellectual domain. This description provides an understanding of underachievement; the definition suggests that underachievement is as a result of gifts not developing into talents.

2.1.2 Academic Achievement among Underachieving high-ability Students

The confusion resulting in the use of the two constructs academic achievement and academic performance is due to the different levels of measurable and observable behaviour of learners. Generally, researchers do not have consensus regarding the constructs similarities and differences. One reason for conceptual difference in educational research is that, researchers view it differently. Some researchers see it as the same thing while, some see it as meaning different things. The term academic achievement is the ability to successfully complete a task through the application of acquired academic content and skills. Achievement is the behaviour that is measurable in using series of standardized scales (Simpson and Weiner, 2009). The highly valued method used in determining efficiency in task realization among learners is quantitative in nature. This implies that grading and testing is done through the use of words and numbers to indicate the successful or unsuccessful content and skill mastery of the student (Simpson and Weiner 2009).

A score 90 percent by the student is equivalent to an A. that student is assumed to have successfully master the task while a score 18 per cent revealed that the task has not been efficiently master. Two students who obtained score 99th and 13th percentile will be described as achiever and non-achiever. Nzesei (2015) suggested that often time, accomplishment and achievement are used in place of the other. Standardized achievement test develop for specific subject in the school is used in measuring academic achievement of individual. The importance of academic achievement is measurement in relationship to attainment of set goals in education which can either short or long term objectives. A test is considered standardized if the validity has been determined based on the fact that every student in a school goes through similar scheme of work over time. Achievement in academic discussion focuses on grades and scores obtained. Students in the senior secondary school may not be allowed if there is inability to acquire a specific grade point or percentage score.

According to Steve (2000), academic achievement differ from academic performance because it is a long-term process leading to an end while academic performance can be measured from any point, which signifies that it is continual. In essence, achievement can be viewed as stagnant, reduced or improved when compared with others.

Academic performance index in the submission of Steve (2000) is the activities that occurs which will result in giving achievement award to individuals who is able to sustain performance and progress satisfactorily. The summation of accruing and continuous outcome is termed as academic achievement because the measurement is progressive in nature and cumulated at the end. It is the overall academic performance that will influence academic achievement. Achievement in the submission of Simpson and Weiner, (1989) is the quantifiable or tangible attributes of high-ability students in under specific conditions such as experimental situation. A performance test is conducted to quantify attributes that can be obvious at a specific period. Steve (2000) definition of achievement test is the type of mental test whereby one is required to perform rather than express view orally by shedding light on the ability as against symbols.

Therefore, academic performance can be equated with the observed behaviour. The scores obtained by students in a teacher-made-test during an academic session are referred to as academic achievement (Steve, 2000). Baadjies (2008) affirmed that the aim of most teachers is to ensure that optimum achievement is attained for all students because achievement in school subject will result in the students' progress. Examination score is used for representing academic achievement. Success generally is described with regards to performance but grades obtained are the most important factor in measuring academic achievement in any learning situation (Harackiewicz et al., 2008). Academic underachievement refers to a students' performing below his or her actual ability in the submission of McCoach and Siegle (2001). Generally underachievement describes the difference between expected and the actual performance or achievement. The implication is that an underachieving student will struggle rather perform excellently.

Underachievement in high-ability student is confusing and frustrating for stakeholders. Parents and teachers can momentarily get a flash of brilliancy, but it disappears after a glimpse, to be replaced by a feeling of unconcern. Seeley (2003) opined that an estimate of 15% to 40% of high-ability students may experience significant underachievement. Van Tassel-Baska (2000) earlier in his findings, indicated that 63% of high-ability students are academically underachieving. Clearly underachievement is when a student over time exhibits a noticeable pattern of poor achievement, especially when moments of brilliance is glimpsed. The student's old tests will show early potential. Implying that since, high achievement had been recorded

early in a student and is presently absent, there is an evidence of underachievement in the student. Using a comprehensive criteria that is lower would result to an increase in the number of underachievers and would certainly include most of the high ability population because they are so rarely challenged to use their abilities. Whitmore, (2000) reported earlier that, an estimate of 70% would probably be underachieving, if their individual aptitude test scores were compared with their level of performance.

2.1.3 Concept of underachievement among high-ability students

The adverse effect of the inability of the high-ability students to maximize their potential on the society cannot be down played. The society is at advantage only when they attain full potential and become productive adults (Hallahan and Kauffman, 2006). Many high ability students complain of being bored at school, this is related to a number of factors like negative academic self-concept, an inefficient learning style and low motivation. These could be traced to some psychological, personal and or cognitive factors.

That a student with high-ability could also be an underachiever is an irony of life. Going by the implicit definition, high ability students have high levels potential and performance is at the level commensurate to the ability (Clark, 2002) while, underachievement is connected with inability to perform satisfactorily in school. This puzzling contrast is at the opposite ends of educational spectrum. Barbara, (2006) amazingly, estimated number of underachieving students to be as high as 50%. Reis and McCoach (2000) three themes underliethe definition of underachievement are:

1. The potentials and actual performance is different
2. Assumed and realachievementvaries.
3. Failure to develop or useeffectively the potential.

The first theme is the most common definition of underachievement. However, Reis and McCoach (2000) noted that some issues could pose problems because the criteria for identifying the high ability vary from culture to culture.The result from standardized test may not be the direct reflection real school experiences making grades from classroom grades unpredictable and subjective. Additionally, in an attempt to use the second theme in the definition can result in problems. The reliability of a test use for measuring achievement can is below 100% because the result of a test can be affected by mood swing or health challenges on test day leading

toprediction errors. The reliability of the third theme is higher because it is applicable to learners irrespective of the educational level. Rimm's definition of underachievement which was cited by Dada (2012) fits this theme. According to him, under-achievement is the discrepancy observed actual performance and some ability index of an individual. Students, whose performance is below their expected ability, will be considered as underachiever. Rimm was quick to add that real under-achievement challenges occur at different levels, this definition of hers, explains the nucleus of underachievement in high ability students.

Gallagher (1991) and Rimm (1997) suggested that school factors and personal/family factors are causes of under-achievement. The school factors may include learning materials as well as learning environment. Also any of the variables of instructional strategy, curriculum, learning opportunities, and other school factors like teachers' attitude, school peers' attitude and administrative strategy of the school. The personal factors may include the students' motivation and learning styles. Lewis Terman's observed gifted students in a longitudinal study and described several characteristics of underachievement as lack self-confidence, lack of perseverance, unable to set goals and inferiority complex (Gallagher, 2010). These characteristics may be influenced (in addition to school factors) by self, relatives or parental lack of skills to support their students' unusual academic talent. These characteristics varies from one person to the other, no one student has all or even more than a few of these traits. These characteristics can be categorized into personal, family, social, and school related behaviours. Most significant predictors of underachievement is low motivation (Weiner, 2006) low academic self-concept (Whitmore, 2000) and ineffective learning styles (Delisle and Galbraith (2002).

2.1.4 Characteristics of underachieving high-ability students

Potential students who underachieve are identified with one or more of the following characteristics:

1. Self-concept is poor self-concept due to negative self-evaluations and a demonstration of the feelings of inferiority indicated by lack of trust, hostility and show and no concern to others.
2. Their social immaturity is more than that of achievers, they have no self-discipline and procrastinate a lot. They avoid tasks they see as unpleasant and they are they can be

distracted easily. They are impulsive and unwilling to accept situations as they are or even accept consequences for their actions.

3. Experience a feeling of rejection and assume they are not liked, they also think that their parents are not satisfied with them.
4. Feel helpless, may externalize conflict and problems and avoid challenges.
5. Do not identify relationships in their efforts and subsequent achievement
6. Rebel and are not responsible.
7. Feel victimized and have poor personal adjustment.
8. Show little or no interest or hobbies.
9. Not well known to peers as they have few friends. They hold lower status in class.
10. Challenge authority and distrust adult in general.
11. Resist influence of teacher or parent.
12. No ambitions and lack future plans or career goals and even reject goals set for them.
13. Withdraw from academics and become less persistent and assertive.
14. Skill to study independently is absent due to decrease in the level of motivation for academic tasks
15. Dislike schooling and associate with those who feel negative towards school.
16. Often, they leave school work unfinished and could be seen to nap during study time and often have fear of test.
16. Perform at higher levels on tests that require synthesizing than on convergent problem-solving tasks that require analysing information (David and Rimm, 2004).

2.1.5 Identification of underachieving high-ability students

Identifying underachieving high-ability student, involve certain procedures, initial recommendation regarding which areas of ability is to be identified. Intellectual ability, general academics and specific academic abilities are included for school programme, because they are the areas of focus. Creative ability may be included to support the cognitive and intellectual functions. Visual and performing arts talents need special resources that are not the same as those needed for other ability areas. However, general mental ability of the participants is determined through Slosson Intelligence Test, while English language achievement test and Mathematics achievement tests are used to determine their potentials. Peers have been extremely helpful in

identifying potentially able students for screening. Students' information that has been found to indicate academic ability includes evidence of high potential, levels of abstract reasoning ability, advanced vocabulary, advanced academic performance and or recognition of outstanding performance or accomplishments (Smith et al., 2000). The nomination of the teachers is of high significance to the identification search as well as the self-nomination which cannot be overemphasized.

The chance of underachievement occurring at any time of life is high. Some underachieving high-ability students exhibit cognitive ability and peculiar talents that are superior to their peers while some others show learning problems ranging from mild to severe that are made worse because of inaction between their peers (Rathvon, 1996). Poor performance can deceive care givers since they think that the present level of performance is an indication of a real picture of level of capability. The assumption of most parents is such children will outgrow phase of poor performance. Even educators may come to the conclusions, that their earlier observations were not correct. Rimm, Cornale, Manos, Behrend, (2003) suggested the following effective strategies are required for proper identification of underachiever:

1. Tendency of showing a decrease in achievement test or IQ scores over time.
2. An IQ score that is significantly different from achievement test score may be an indication of underachievement.
3. Display of difference in individual performance and group IQ scores.
4. Individual performance of underachiever who has attention dependent may be high in testing situation that involves individual.
5. The discrepancy in achievement test scores and grades obtain at school reveals underachievement.

2.1.6 Concept of Motivation

The Latin word moveo is the term that translated as motivation which implies to move or cause movement. Motivation is a force that is generally used to express behaviour arousal with regards to direction, selection and continuation. It also refers to the urge and desire to act in a specific way because of the innate desire which propels behaviour in the direction of set goals and work to attain the objectives. An internal force that is activates and sustains behaviour overtime in the submission of Thorkildsen et al., (2002) is motivation. According to Woolfolk

(2004) it is internal willingness that stirs and sustains behaviour. Motivation in opinion of Pintrich and Schunk (2002) described as the activities directed at promoting the task involvement psychologically. Coetzer, (2011) posits that motivation is the force that lies internally or externally in an individual which will lead to a strong desire to perform specific actions. Thus, academic motivation is a basic factor that can enhance performance of learners because it indicate the investment the students makes to achieve set goals through cognitive, emotional, and behavioural desire (Tucker, Zayco and Herman, 2002), and a factor that influence the performance of students the most (Francis et al., 2004).

Academic motivation as a variable sometimes does not only predict academic achievement directly (Tucker, Zayco, and Herman, 2002). Study from different field of psychology and philosophical perspectives attention has been focused on academic motivation because it significantly affects academic achievement and learning among students. Coetzer (2011) stated that human motivation is force drives an individual to achieve set goal and can be view from either intrapersonal or interpersonal perspectives. It is basically the force that enables human to achieve their desire. Pintrich and Schunk (2002) view motivation from a cognitive perspective. They stated that it is the process that involves the activation and sustenance of goal-oriented activity. Coetzer (2011) opined that motivation is process that enables an individual to psychological arouse, direct and maintain desired behaviour which can either be extrinsic or intrinsic) in other to achieve set objectives. Deci and Ryan (1985) observed that behaviour is motivated intrinsically, extrinsically or lack motivation across self-determination continuum. An inner motive of a person that propels the performing of a task, in order to derive satisfaction is intrinsic motivation, while extrinsic motivation involves engaging in a task for rewards and not for the sake of the satisfaction to be derived in engaging in the task. They defined a motivation as inability to act at all on not having the intent to act.

Furthermore, the researchers noted that positive development outcome will be on the increased because the underachieving high-ability students are moving to intrinsic motivation from a motivation, using self-determination continuum. Deci and Ryan (1985) identify tripartite type of intrinsic motivation, they are intrinsic motivation to know (IMTK), accomplish tasks (IMTAT), and experience stimulation (IMTES). Intrinsic motivation to know is the inner motive to participate in an activity for the purpose of deriving satisfaction that is attached with engaging in the task. Intrinsic motivation to perform a specific action deals with the urge to be

engaged because of the gratification an individual as a result of completing the task. Intrinsic motivation that refers to stimulating experiences involves sensory pleasure, and enjoyment an individual gets for doing a task. According to Coetzer (2011) intrinsic motivation to accomplish will enable an individual is directed at the process of achieving the goals and not the result. Using the continuum of self-determination Ryan and Deci (2000) identify four types of extrinsic motivation which are external, identified, introjected, and integrated regulation. Attribute that are sustain using rewards and control examples of external regulations (Deci and Ryan, 1985). Introjected regulation is behaviours maintained when the learner has not completely accepted the regulation as personal responsibility, it is an externally controlled behaviours performed so that guilt, pride and anxiety are avoided (Deci and Ryan, 1985).

Performance that are outcome of choices made by a person's free will according to Ryan and Deci (2000) is identified regulations while integrated regulation deals with the assimilation of the self, which relates values and needs of an individual. Motivation affects the level of achievement attained with time which depends on level of achievement and on the quantity of time spent on a task (Lens and Rand, 2000). Individuals who are motivated will spend longer time on a task and this would bring about growth in that task (Gottfried and Gottfried, 2004). A positive link, should then exist between motivation and ability (Garn, Matthews and Jolly, 2010; Lens and Rand, 2000). A high-ability students' level, overrides that of their peers, even as they are often incorrectly attributed with high motivation (Gottfried, Cook, and Morris, 2005; Garn et al., 2005) and result in underachieving high-ability students exhibit a paradoxical nature. These students display a disparity between demonstrated potential, through intellectual tests or observed competence and the lower-than-expected levels of achievement (Butler-Por in Coetzer, 2011). Achievement scores among high-ability students which is located at the centre on the continuum, could still be regarded as underachievement, since their abilities should predict superior results (Lens and Rand, 2000).

The high-ability students might fall into a cycle of underachievement as a result of reasons that are motivational in nature. Although there could be an expression of genuine capacity, when identification was made, as possessing high ability, their motivation toward the school experience gradually diminished. These underachieving high-ability students would then perform on average, or even below-average, with their intellectual capacity eventually reaching a plateau (Coetzer, 2011). In this framework, individuals might be viewed as actually falling

below their potential for academic excellence. The literature suggested that motivation is part of the definition of high-ability that serves to moderate gifted behavior (Phillips and Lindsay, 2006; Gottfried and Gottfried, 2004). For example, the term giftedness is described as the interrelated to high ability, creativity and task commitment, which some other researchers have tagged to be synonymous with motivation (Ruban and Reis, 2006; Lens and Rand, 2000). Other researchers presented a construct known as gifted motivation (Gottfried and Gottfried, 2004). Whether motivation presentation is as component of high-ability or as a separate construct, researches indicate that non-cognitive factors like motivation is important for exceptional levels of performance. According to Coetzer (2011) degree of motivation happens is an important factor in academic discourse because it significantly affects academic achievement. Therefore, it could be made a central focus in educational studies to improve student academic performance (Roeser, Strobel and Quihuis, 2002; Howey, 2008).

2.1.7 Motivation types

Intrinsic Motivation

Intrinsic motivation in assertion of Ryan and Deci (2000) operationally defined in two ways. The first refers to activity engaged in as a result of free will. The individual is not coerced into carrying out a particular task but rather done due to choice. The second type of intrinsic motivation is self-report of pleasure or fun derived which an individual makes of his or her involvement in and the pleasure of the tasks. Both type intrinsic motivations are internally driven in an individual based on the desire to successfully complete a task without coerced or force from the environment. Individuals who are intrinsically motivated are usually curious unlike those who are not. Intrinsic motivation involves carrying out an exercise because of the fun associated with it instead of some separable consequence (Ryan and Deci, 2000). Suffice to note that, it is intrinsic motivation that drives a high-ability student to exhibit persistence in academic studies, to attain academic achievement. There is a self-propelling force linked to intrinsic motivation which will function when an individual is not externally motivated (Sikhwari, 2004) or rewarded.

In the view of Ryan and Deci (2000) it a construct that was initially acknowledged based on studies various behaviour of animals using experimental approach, when it was found that many organisms explore and show curiosity, even when reinforcement or reward is

not presented. Individuals are not equally motivated intrinsically to participate in specific tasks. However, Spinath and Steinmayr (2007) contended that tasks with intrinsic significance signify the level of favourable impact assessment an individual derives as a result of participation in such task such as likeness, pleasure and not the reward that comes from such task. They further added that the reason for learning goes beyond intrinsic task-values, the pleasure of engaging in a task is critical of students, because participating in pleasurable activities will lead to efficient learning. Intrinsic motivated behaviours are based on desire, satisfaction of need for efficiency and independence (Ryan and Deci, 2000). They see the need for self-determined behaviour to be an important factor that motivates and closely associated with the need for competence.

Intrinsic motivation related to academics would be visible in task participation as it concerns specific subject and the fun of engaging in the lesson (Harackiewicz, Barren and Elliot, 2008). They also added that intrinsically motivated learners to be interested in acquisition of new information and they are more concerned with the instructional contents and the performance in examination. Such students possess high level of intellectual interest that will help acquire basic information relevant for understanding their environment (Crous, Roets, Dicker and Sonnekus, 2000). Attributes of students that are motivated intrinsically includes:

1. Willingness for enrichment
2. goal-orientated
3. anticipates and expects aim to be accomplished
4. concentrates on learning tasks
5. tenacity and stamina
6. scrutiny of the object or theme
7. study independently
8. views learning as meaningful
9. shows inquisitiveness
10. show determination
11. sets personal standards
12. at first attempts failure is abhorred, and the will for repeated attempts is nil

It is particularly important to consider intrinsic motivation in secondary schools since at this stage; the ability to progress successfully in learning is determined by interest in the studies.

Therefore, performance in a particular subject at school and within the society may be influenced by intrinsic motivation in the specific school subject (Harackiewicz et al., 1998). Intrinsic motivation will help ensure that effective learning takes place making it important to identify variables which can influence the development of motivation (Ryan and Deci, 2000). Learners that are motivated intrinsically will achieve better because they are interested in the learning process rather than only when faced with challenges (Mnyandu, 2001). He added that in any learning situation, most activities are not pleasurable enough to students therefore teachers cannot rely on intrinsic motivation to always enhance learning. He further noted that a crucial aspect of teaching is teachers' wide knowledge of various types of motivations that students usually possess so as to steer them towards using the specific type of motivation to enhance achievement in academics.

Extrinsic Motivation

Extrinsic motivation contrasts with intrinsic motivation because it is action of others to ensure the participation of an individual in a task and not for the purpose of having pleasure or the desire to be involved in the task (Ryan and Deci, 2000). The force to be engaged in a particular task is not within the person. The desire to perform a specific task is as a result of the reward that is attached to the task and the outcome of the task. Extrinsic motivation according to Areepattamanniland Freeman, (2008) refers to different attitudes that will indicate certain tasks are engaged in because it serves a purpose and for the willingness but not for the satisfaction that will be derived from participating in such task. Based on the theory of self-determination extrinsic motivation are of different categories. The performance of different actions by students could be the influence of extrinsic motivation and the desire to indicate the acceptance of the importance of utility of an action (Ryan and Deci, 2000).

The feeling of being propelled into action through external force can be evident. The latter, which is the extrinsic objective, is applied with the mind of free will. The result of self-determination is the extrinsic motivation as behaviour will vary greatly (Ryan and Deci, 2000). According to Crous et al., (2000) behaviour that is non-autonomous that is self-determined can result in behaviour that are autonomous. The implication is that intrinsic motivation can arise due to extrinsic motivation. In the assertion of Crous et al (2000),

focusing on extrinsic motivation will not enable the individual to be responsible for the actions taken but will rather increase the rate at which depend on reward before participating in a particular activity. Crous et al., 2000 submitted that attitudes of extrinsic motivated person include:

1. Uncertainty about level of abilities
2. Lack of creativity
3. Work is based on pressure from others
4. Lack focus
5. Action is based on pessimisms
6. Attention is not on the long term objectives
7. Separated from expectation

Amotivation

In the self-determination theory amotivation is another type of motivation which implies the lack of desire to engage in a particular activity. Amotivation is important in a study of this nature because it exist among high ability students that are underachieving. Mnyandu, (2001)opined that factor that could lead to lack of motivation among studentsincludes making students to learn by introducing punishment as reward, if they did not satisfy expectations, had profound effects, and can lead to the formation of maladaptive achievement patterns in students .Mnyandu (2001) further asserted that the use different techniques to minimize perceived autonomy among students while trying to develop extrinsic motivation can makes students become susceptible to behaviour patterns thatamotivational. Threat of punishment should not be applied as a means of making students perform academic activity by the teacher so that amotivation towards such task will not be developed.

The lowest point on the self-determination autonomy is amotivation. Ryan and Deci, (2000) in their findings, submitted that when amotivation is experienced by an underachieving high-ability student, thebehaviour that is exhibited will not have intent. Amotivation is not aligning with intrinsic or extrinsic motivation. Amotivatedstudents utilize irrelevant styles of learning; this does not increase achievement academically. The assumption of these groupsof learners is that capability to control the factors that influence their behavioural outcome is missing. For instance, in the event that an underachieving high-ability students' performance

is below expectation, students who lacks motivation will link it to inability to cope with the task rather than the attitude towards the task. Such students feels that the situation is normal believing they cannot influence any change or improvement. Amotivation according to Ahmed and Bruinsma (2006) confirmationis the effect of students' perception that their action will not lead to any difference in the result. The student will rather feel they are not capable of changing the outcome because they do have the ability to control it. In the submission of Clark and Schroth (2010) students who are amotivated are usually carefree and tend to disagree a lot with issues.

2.1.8 Academic Self-concept among Underachieving high-ability Students

There are different dimension that are considered in self-concept that are linked to specific personality traits such as physical, social, emotional but others are likely related to achievement in different school subject (Sanchez and Rhoda 2003). An individual perception and knowledge about one self is usually describe as self-concept because it helps to identify the characteristics, weakness and values that a person is aware of , which he or she believes gives a description of himself or herself and which the person perceived as information about his personality (Sanchez and Rhoda 2003). Self-concept is crucial; its importance sprang from notable contribution to personality development. Shavelson, Hubner and Stanton (2006) in Liu (2010) proposed that self-concept is the perception high-ability students have of themselves. This perception derives from the environment, as part of human development. Self-concept in the submission of Sanchez and Rhoda (2003) is the collection of seven important aspects which includes the psychological aspect of self-concept; multi-dimensional in nature; it is organized into various level (a general and specific self-concepts); consistency which is more specific at the lower hierarchy due to increase in vulnerability; various aspects are more differentiated with age and experience. It is also is a collection of attributes, values and so on, that forms an individual beliefs about them and defines who they are (Berk, 2000).

Academic self-concept is described by Bong and Skaalvi (2003) as subjective judgment concerning personal ability in an academic context. According to Redd, Brooks, and McGarvey (2001) the view of learner about personal level of ability during classroom interaction is academic self-concept. In the same vein, Trautwein, Ludtke, Marsh, Koller, and Baumert (2006) pointed it out as a ones self-evaluation as it concerns a specific academic domain. Shavelson, et

al., (2006) asserted the model of self-concept is in levels and multifaceted naturally. Researchers in various disciplines, over the past decades submitted that academic achievement and students' self-concept based on academic has correlation. There are findings which revealed that achievement in academic of learners and self-concept based on academic are significantly related (Choi, 2005; Liu, 2010). Most studies are in agreement with the submission that change in academic self-concept can influence achievement either positively or negatively.

Liu (2010) averred that the role of social comparison is critical to self-concept because peers view in school is used for develop perception among students but development of academic self-concept among students is done through assimilation (Trautwein et al., 2006). Using the Big-Fish-Little-Pond effect (BFLPE) Marsh and Parker (2004) they illustrated the correlation between achievement in academic and self-concept based on academic and asserted that relationship is positively significant. They further added that the level of peers' ability among high-ability learners can influence academic self-concepts development. The concern of educational psychology has been the analysis of relationships that is associate self-concept with academic achievement (Nunez, Nunez, Gonzalez-Pumariega, Alvarez, Roces, Garcia and Gonzalez 2008). There is no findings that have conclusively identified the relationship between the two variables. Nunez and Gonzalez-Pienda (2004) differentiated among three causal level of connection between achievement in academic and academic self-concept:

1. ***Academic achievement influences self-concept:*** The self-concept and self-image of students is affected by success and failure, this is explained by evaluation of important factors or by social comparison theory (Tajfel and Turner, 2006). Interventions that will modify the achievement level of students will contribute significantly to improvement self-concept.
2. ***The degree of academic achievement is influence by the development of self-concept:*** Academic achievement level is determined by self-concept. It influences contingencies made by the educators and learners (Pygmalion principle). Optimizing the levels of self-concept and particular degree of assumed capability will increase school performance.
3. ***The influence of and relationship between self-concept and academic achievement is mutual:***

The postulation is that self-concept has causal relationship with academic achievement by influencing and determining each other mutually.

Authors who are in agreement with this model suggested the addition of variables that could influence both academic achievement and self-concept are personal, environmental, academic and non-academic variables. Hay, Ashman and Van-Kjaayenoord, (2008) compared learners with high self-concept teachers' reports revealed that possessing high self-concept during class work were more persistent, lower levels of anxiety and expectations of success was higher. Generally academic achievement is predicted by academic self-concept because areas like GPA are determined and various aspects of self-concepts domain (for example mathematics or verbal self-concept) and are specifically to achievement in subjects (Marsh, Bryne and Shavelson, 1998; Choi, 2005). Findings from different studies revealed that self-concept influences achievement among students which subsequently predicts academic self-concept after previous performance is controlled, (Marsh and Yeung, 2008).

2.1.9 Concept of learning styles

Learning styles has to do with how a student go about his or her approach his or her study through perception towards his or her surroundings and the step involved in adapting a given task so as to produce result at the end of such task (Richardson, 2011). They apply applicable strategies to get information that will ensure easy comprehension of the task because such strategies can be efficient during classroom interaction (Chen, 2009). Every high-ability students possess unique way of learning and processing information. The different styles of learning are verbal repetition, writing and demonstration of the relevant stages. The difference in the learning styles of High-ability students is due to individual differences Vaishnav (2013) submitted that learning styles are set behaviours that enhances learning for a student by ensuring that students ability to comprehend and apply the information during learning. Specific ways adopted by students to ensure that they can easily recall classroom instruction is style of learning (Caliskan and Kilinc 2012).

Learning style as a process describe the method that students adopts for information acquisition (Cesur and Fer, 2009). In this context styles are determined by the uniqueness of perception employed by the high-ability student in relation to the instructional processes. They are traits that are inborn with influence the various stages of individuals life. An individual way of life like walking, sitting, talking, and so on is also influenced by styles of learning. The determination of individuals learning style with arrangement of the process of learning will to a

large extent ensure that success is achieved (Dunn and Dunn, 2002) because students will learn using learning style that suits them most. The perception of high-ability students' of the interpersonal interaction with significant others combined with intellectual and a physiological structure will determine their behaviour towards learning. No learning style is the best but it can enable teacher to effectively plan the learning situation for the benefits of the learners. Awareness of high-ability students approach to learning and effective use be more successful and will have more positive self-concepts to reverse underachievement.

The process of learning differs from one person to the other which is the effect of biological and psychological differences. Reiff (1992) postulated that every high-ability student has personal attributes with regards the process of learning. Sitt-Gohdes (2001) observed that the method of teaching is based on what the teacher has learnt previously which may be the factor responsible for a good number of underachieving high-ability learners are frustrated because their learning preferences in the learning situation are not accounted for by most teachers. It is even more complicated for students who are from different educational and cultural background. A major area that is often relegated to the background is the identification learning styles during the situation in comparison to the different findings on instructional methods and activities.

Abidin, Rezaee, Abdullahi and Singh (2011) pointed out learning style, is imposed biologically. Each student has peculiar and regular method of perceiving and retaining information, as a result, it can be said that high-ability students learn differently from each other. This is connected to the findings that opined that structure of the brain structure is a predictor of acquisition of language structure. Some researchers asserted that some brain function differently which is responsible for the variation in perception pattern among learners (Vaishnav, 2013). In the opinion of Keefe and Ferrell (2000) most challenges associated with learning are not connected with subject matter difficulty instead, it is linked to the kind and degree of ability required to process the learning material. Moreover, Dunn (2003) reported that the method of teaching students is more relevant than the subject matter taught in any school subjects. It is believed that when teachers succeed in analysing students learning needs, the process of instruction would be fully maximised for both teachers and students (Fairhurst and Fairhurst, 2005).

Learning styles according to some researchers show differences and varied needs of students. It affects learning behaviours. Since high-ability students differ in their preference of learning styles, it becomes imperative for the teacher to identify the various preferences since such information can enable the teacher to be more efficient during classroom instruction (Felder and Spurlin, 2005), however some students are able to combine two or more styles of learning effectively to optimised instruction. Learning styles consistently signifies different ways high-ability students respond to and apply the learning stimuli because it is made up of variables like cognitive, affective, and physiological. Charmghini, Ghanbari, Talab (2013) revealed that the way students perceives, relates with, applies with the learning environment. (Charmghini et al, 2013) added that there are certain classroom situations under which learners will acquire knowledge easily. Thus, the focus is not what students learn; instead the concentration is on how they prefer to learn.

Some prefer to learn by listening, while some prefer to read and discover while some will rather see a demonstration. The natural process of acquiring instruction and adapting the information based on the learning environment is generally known as learning styles. Many studies abound on this phenomenon, however, as earlier noted; no consensus has been reached concerning its definition. A meeting point is the way individuals learn vary (James and Gardner, 2005). To further substantiate this, are ample evidence indicating differences in ways of acquiring and processing information. They further suggested that learning will be optimized, if the appropriate teaching method for learning styles is applied (Pash-leret al, 2008). A teacher`s best way out is to introduce variety of teaching techniques that will allow students the best chance to succeed.

2.2.0 Theoretical Review

2.2.1 Theoretical Approaches to Motivation

There are four broad theories developed in the approach to motivation which are:

1. The behavioural view
2. The cognitive view,
3. The humanistic view, and
4. The achievement motivation theory (Brennen, 2009)

The Behavioural View

The behavioural interpretation of motivation is anchored on Skinner's theory of learning. This is focused on reinforcing expected behaviour using extrinsic reward. The interpretation of learning behavioural describes the reason some students respond positively to certain subjects and show disinterest in some (Biehler and Snowman, 2003). Albert Bandura, a social theorist, emphasized the importance of developing skills for identification among students' while imitating others, while revealing the positive outcome on academic achievement. The submission of Psychologists is that use of praise excessively and rewards may lead to resentment, consequently, dependency on teachers may arise. They further suggested that the use of appropriate reward for expected response can help in reducing excessive use of negative effects of extrinsic rewards.

The Cognitive View

The view emphasized that cognitive disequilibrium can be used in arousing the learning desire of students something new. An example is students having the urge to solve a learning challenge when confronted with such. According to Piaget, when one is faced with a discrepancy between something new and the old, that is what already known or believe, it produces a state of imbalance. To achieve this state of disequilibrium, Biehler and Snowman (2001) recommended should be asked questions so as to determine the level of knowledge, which they intend to acquire. The use of intrinsic motivation techniques by educators to arouse disequilibrium will ensure that learners learn for the purpose of acquiring information. A major challenge in the application of the cognitive view of motivation is the problem of inducing learning to experience satisfaction differently that will adequately enhance learning (Biehler and Snowman, 2001).

The Humanistic View

Humanistic approach to motivation was propounded by Abraham Maslow a prominent psychologist with humanistic view asserted that individuals are motivated based on peculiarity of needs to solve specific concerns. These concerns, is placed on a scale of hierarchy of relevance. Subsequently, a five-level hierarchy of needs was

proposed: physiological needs, safety needs, belongingness needs, esteem needs, and self-actualization needs.

Physiological needs includes hunger, thirst, and shelter, are the most basic human needs. Safety need is the intention to be in an environment that physically harm free and shielded from insecurity. Belongingness need is the desire of an individual to be appreciated by significant others. However, need for esteem is the desire to be recognized by others and have a positive self-image. The highest is need for self-actualization, which refers to developing innate capability within an individual. The major reason for this theory, satisfying higher needs is not what an individual will seek for first except lower needs are met which Biehler and Snowman, (2001) refers to as deficiency needs. Satisfaction and self-actualization are sought by learners with regards to primary needs such as relaxation, safety, belongingness among others. The role of the teacher is to meet students' basic needs.

Intellectual and aesthetic are crucial in meeting of rudimentary needs. According to Brennen (2009) suggested learning independently and investigation of interpersonal relationship plays a crucial role because without such it will almost impossible to satisfy the other needs. Maslow theory is limited by the presumption that educators may not be aware of the students various areas of needs not met or the steps that should be taken in meet the needs that they are aware of. The teacher can ensure that learners' academic self-concept is enhanced conducive learning situation for the students which in-turn will result in improved academic achievement.

2.2.2 Self-determination Theory

Self-Determination Theory (SDT) motivational strategy is another approach that is important to the understanding academic achievement of students (Deci and Ryan's, 1985, 1991, 2000). There is need for autonomy which is highlighted by SDT highlights (Ryan, Kuhl, and Deci, 1997). Autonomy signifies an individual choice in the regulation of personal attitudes (Deci and Ryan, 1985, 2000). The nucleus of the theory is the difference between controlled motivation and autonomous. Behaviours that are autonomously motivated implied that they self-determined because they are innate. They are part of the inherent and absorbed into the crucial development using integration process (Deci and Ryan, 2002). Humans learn from birth and within the environment learning can either be supported or

discouraged (Deci and Ryan, 1985, 2000). Categories of needs related to psychology of SDT are basically three which include the need for autonomy, competence and relatedness (Deci and Ryan, 1985, 2002).

The need for competence deals with obtaining contentment that one's ability is improved (Deci and Ryan, 1985, 2002), and skill facilitates intrinsic motivation. The need for autonomy is the need for self-directed behaviour attitude (Deci and Ryan, 1985, 2002). The need for relatedness is facilitated by intrinsic motivation, which is about having the feeling relationship with others in the community (Deci and Ryan, 1985, 2002), a prerequisite to facilitate self-determined motivation is to meet the three psychological needs. The initial work that led to self-determination theory started around 1970s. The self-determination theory is not based on quantitative but on qualitative differences in motivation, which indicates that they are basic to the theory which differentiates between controlled and autonomous. It is the experience of free will relate to individual behaviour; also known as behaviour that are autonomous (Mnyandu, 2001).

Self-determination theory differentiates between various categories of motivation which is related to the different objectives that bring about engaging in a task. The role of the two motivations (intrinsic and extrinsic) is crucial in the improvement of achievement among learners. The theory primary focus is relevant of self-perception of ability which is precursor of independent academic motivation. The different level of motivation both intrinsic and extrinsic can also be divided based on autonomy as self-determined motivation for instance, autonomous regulation refers to taking actions based on free will and personal choice in order to derive fun and amusement. Non-self-determined motivation is a function of behaviour based on external reward, putting up actions in order to avoid repercussion and guilt for not acting according to norms.

In summary, it is divided into identified regulation, intrinsic motivation and extrinsic motivation. So that, motivation, that does not act or acts with no intent, lacks autonomous and controlled regulation which may result subsequently to truancy and criminality. The theory of self-determination states that there is an innate predisposition in an individual required for behaviours and task to be internalized and integrated into a cogent sense of self (Deci and Ryan, 1985; Ryan and Deci, 2000). Factors like social and intra-individual are determinant of internalization and integration of the level of behaviour that can either be of

assistant or obstruction to the process. That is, the conditions of the environment which provides critical psychological support that is required for the development of capability, and optimum of an individual is still spontaneous or self-determined types of regulated behaviour. On the other hand, intra-individual and social factors that obstructs the basic psychological needs result in more controlled type of regulated behaviour but less internalized (i.e., less self-determined). That is, when the reasons presented for engaging in certain activities arise from inner motives, the end impact of the behavioural regulations would be characterized by self- determination, conversely, when there is a feeling of pressure to participate in tasks, there would be no spontaneous reaction.

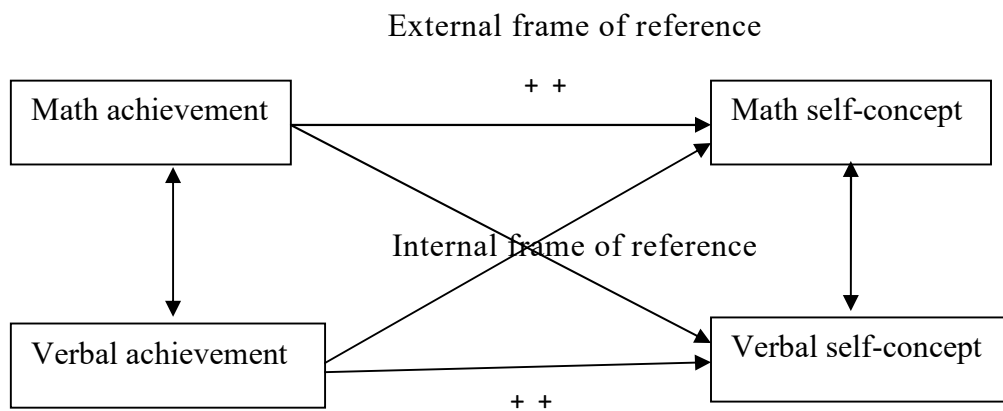
2.2.3 The Internal/External frame of reference theory

The construct of student's academic self-concept was explained from multiple facets by Hung and Liou (2013) quoted Marsh (2000) who developed the internal/external theory to be responsible for the corresponding correlation between students' mathematics and also the achievement in verbal ability with mathematics and verbal academic self-concepts. The conflicting pattern of relationships between academic self-concepts and achievement in different subjects is emphasized in this theory. That is, mathematics achievement and self-concept was related positively but had negative effect on verbal self-concept.

The Internal/External (I/E) theory is based on the submission of Shavelson, Hubner, and Stanton (1976) that opined that self-concept is social stratum and different aspect in contradiction to the underdeveloped perception of one-dimensionality prior to the 1970s. Specifically, the social stratum of self-concept is grouped as academic and non-academic self-concepts, and each of the strata is further classified as multiple academic self-concepts (like mathematics, verbal, and science self-concepts). The comparison of process which emphasizes external comparison that deals with the I/E theory. An individual self-confidence can be increased through social comparison and the resulting effect is reflected on self-improvement towards academic tasks by the underachieving high-ability students. However, in comparison with others who perform better than the underachieving high-ability students, their academic self-concept decreases. Furthermore, the perspective of a person similarity internally, an high-ability student feel better about the performance in a particular subject, then a positive effect on his/her mathematics self-concept and a negative

effect on verbal self-concept would be experienced. It can be discovered from the above that an high-ability student pass through two comparison processes to construct his/her verbal and mathematics academic self-concept according to the I/E model (Hung & Liou, 2013). The other is the internal comparisons in which the high-ability students distinguish his/her own ability in different subjects. Therefore, internal and external comparison processes can simultaneously influence the formation of a subject's self-concept. The assumption of the theory is that achievement and self-concept has positive correlation for the similar subject but the correlation is negative for different subject.

Figure 2.1 Internal/External frame of reference model (adopted from Marsh and Hau, 2004)



The I/E frame of reference theory has a significant implication for high ability students. Verbal academic self-concept and math academic self-concept and high-ability students from a residential high school were related negatively although high levels of achievement was shown the both subject by the students (Plucker and Stocking, 2001). The result from another study revealed that there is high relationship between verbal and mathematics achievement but mathematics and verbal self-concept scores in 9th grade honours students has no correlation (Williams and Montgomery, 2010). This implies that internal comparisons effect on relationship between ability and self-concept is independent in a given subject. High-ability students' competency in one subject area will influence how less

competent they will feel in one different subject area, even where they have ability to perform well in both subjects.

2.3.0 Empirical Review

2.3.1 Motivation and Academic Achievement among Underachieving high-ability Students

Mnyandu (2001) established that teachers must possess broad knowledge of motivation (intrinsic and extrinsic) in order to help underachieving high-ability students apply specific of motivation that will best suit the learning environment and further ensure the enhanced achievement. The motivation that is within an individual is known as intrinsic motivation because no external stimulus is required. Furthermore, extrinsic motivation is associated with reward or external incentive. The assumption is that extrinsic motivation is less desirous when compare to intrinsic motivation. However, extrinsic motivation is relevant in specific learning situation.

Study by Deci and Ryan's (2005) showed that intrinsic motivation and academic achievement is positively related and noted that when an academic task is challenging to high-ability students but the present of intrinsic motivation will make them find solution to the problem. Ryan and Deer, (2000) emphasized that intrinsic motivation is a critical factor to the teachers which will help ensure that systematically the encouragement or undermining of learning by parent and teacher is done. Mnyandu (2010) found that passion and tenacity when performing tasks, time spent to solve challenges, and emotions associate with self-efficacy are indicators of intrinsic motivation. Expanding on the importance of motivating learners intrinsically, Harackiewicz et al. (1998) asserted the objectives of students will probably be focused during learning situation so that knowledge can be acquired to do expected task. High-ability students will likely devote more energy and time when interested in a specific topic. This reveals that all these attitudes will positively contribute to academic achievement.

Cokley, Bernard, Cunnigham and Motoike (2001) asserted that the correlation between achievement in academic and intrinsically motivating is significantly positive. The result of their study revealed that students who preserved and completed chosen courses levels of intrinsically motivation in performing tasks related to academic was better when compared to learners who were unable to complete the tasks as assigned. These indicate that motivating learners

intrinsically is related to broad variation of behaviour which is important and conducive to high-ability students' achievement academically but not possessed by underachievers. Mnyandu (2001) reported that motivating students intrinsically and academic achievement were not related positively. The importance of extrinsic motivation to education cannot be over emphasised because it contributes to achievement among students. Ryan and Deci (2000) submitted that extrinsic motivation is a critical factor that teacher can always depend on to promote acquisition of knowledge that will result in improved achievement. Ryan and Deci (2000) found that most activities educators want learners to perform are not interesting to arouse the desire of the learners.

Teacher must possess adequate skill that will enable them to use prompt during teaching to arouse intrinsic motivation which can be used while participating in uninteresting tasks (Mnyandu, 2001). Extrinsic motivation can be encouraged in underachieving high-ability students by promising them a reward. In a study conducted by Mnyandu (2001), it was reported that learners can be motivated (using intrinsic and extrinsic). There is a possibility for to possess both intrinsic and extrinsic motivation by a student. Mnyandu (2010) concluded that students that are motivated extrinsically do not always possess any desire for improvement in academic achievement because they are of the opinion that putting extra effort in completing academic activities is a waste of time and resources, except motivated using rewards like praise, prize, high grade or financial reward. Arepattamannil and Freeman (2008) insisted that extrinsically motivated students will likely experience more apprehension and possess less capacity to cope with failures. Mnyandu (2010) observed that high-ability students whose initially performance is high intrinsic motivation will decrease when exposed to extrinsic rewards. The reason is that the perception the extrinsically motivated is better than the intrinsic motivation (Harackiewicz et al., 1998).

Crous, Roets, Dicker and Sonnekus (2000) postulated that attempt should be made by the teachers to identify the meeting points between intrinsic and extrinsic motivation and determine the types of motivation relevant to the learning situation. Crous et al. (2000) averred that high-ability students should move away from extrinsic motivation and lean on intrinsic motivation which is a better type of motivation. Nilsen (2009) suggested that initially intrinsic motivation reduces among students with high-ability. He concluded that educator should find ways of not

destroying the motivation and morale of students and the policies should not be aimed as hinder positive development of motivation rather than identifying ways to motivate them.

Motivation and academic achievement has a complex relationship. Spinath and Steinmayr (2007) asserted that students with high-ability require high motivation that is sustainable to enable them to learn and be well prepared for life-long learning. The general consensus is that a different type of learning motivation will promote all students' academic performance (Schick and Phillipson,2009). Therefore a crucial aspect that contributes to the difference in achievements academically is motivation. According to Volet and Jarvela (2001), the desire to participate in learning activities is higher among intrinsically motivated students. However, there is absent of systematic learning attitude among students who are not motivated to learn and may have difficulty paying attention during learning situation, may not monitor the understanding level, or seek for assistance when faced with challenges during the learning situation (Sikhwari, 2004). Nilsen (2009) posited that motivation to learn does not depend on the level of intellectual ability because the scores obtained in general intelligence plays insignificant role in determining learning motivation – specifically among achievers.

High motivation correlates with high academic motivation. However, there are findings that contrast with the submission that motivation does not predict high academic achievement. Lau and Chan (2001) reported that motivational types as factors among high ability students were important in discrimination of under-achiever from high-achiever. The indication that high motivation and improvement in academic achievements correlates positively and it is consistent with Sikhwari (2004) who submitted that academic achievement and motivation have relationship that is significant. Academic motivation and achievements in academic in the submission of Ahmed and Bruinsma (2006) were positively related but reported that the achievement in academics of learners was better due to higher self-determination. However, Arrepatamannil and Freeman (2008) found that academic achievement and motivation types had weak correlation among migrant and non-immigrant groups.

2.3.2 Academic Self-concept and Academic Achievement of Underachieving high-ability Students

A good academic self-concept is required by learners to succeed academically (Olatunde, 2010). Vialle, Heaven and Ciarrochi (2005) argued that there is link between all

desired things in school and a positive self-concept among students, while undesirable result is equated to negative self-concept. This is echoed by Marsh (2000) who posited that a positive self-concept required in most learning situations, and usually help to mediate the variable that influences achievement of other outcomes that are desired like achievement in academics. Learners' positive self-concepts have the tendency of impacting on behaviours (Hamachek 2005). The result from Ahmed and Bruinsma (2006) confirmed that students' ability is predicted by feeling of positivity among students. Michie, Glachan and Bray (2001) reported that positive feeling of academic self-concepts among students admitted to the university will enable them identify desirable reason for university education.

The students experience compatibility in the degree energy put into studying and marks obtained. The level of confidence is increased when compare to others performance, and the rate of satisfaction with life in the college is greater. The conclusion based on the study is that having positive academic self-concept among students is beneficial because it is related with different types of positive academic behaviours and attitudes. An example of Muddra of Illinois University was used by Dambudzo (2009) to demonstrate the relationship between negative belief of the self and failure: the assumption of the boy about himself is critical for success. At Greenly a student obtained score 98-percentile in a test which made him thought that IQ level was 98. The findings of Lui (2009) indicated that a low academic self-concept will reduce a person's self-confidence, and the motivation to learn among students with low self-concepts is generally low. Therefore, the resulting effect is poor academic achievement among such students. Olatunde(2010) stated that the commitment of individuals with low academic self-concept to school is very poor.

The report of Lau and Chan (2001) based on findings asserted that negatively formed self-concept and underachievement correlated among students because the attainment of students with negative self-concept is low when learning and the learning strategies to school task is deficient. One finding that is consistent is the correlation between poor self-concept and underachievement among students(Lau and Chan, 2001). In general the report of Lau and Chan (2001) asserted that underachievers' assumption is that they do not possess the capacity to achieve as expected in school task and will therefore face challenges in their academics because they spend less effort studying. The self-confidence of underachievers with regards to studying to acquire knowledge is low and

the effect is revealed in degree self-concept. Academic self-concept and achievement in academic has negative relationship which is becoming a vicious cycle (Lau & Chan, 2001).

2.3.3 Learning Styles and Academic Achievement of Underachieving high-ability Students

The learning behaviour of students were influenced by learning styles and the effect is that the different learning styles preferences will make them to behave in a way they perceive will enable them to learn effectively by interacting and responding to the learning situations (Abidin, Rezaee, Abdullah and Singh, 2011). It is critical that the variation of learning styles among learners is determined and identified with the view of understanding the characteristics of each of the learning styles preferences because such information will enable the teacher become delicate to the different attribute of learners in the learning environment (Felder and Spurlin, 2005). However, attempt has been made by educators to enhance achievement in academic of learners because dedicated teacher and parents usually express concern about the concern of their students and children in every learning environment. In connection to this, most educators believe that students should possess positive attitude which is a criteria to academic achievement. A learning styles is most often identify as for achievement academically. Dunn, Beaudry and Klavas (2009) asserted that the score on standardized test for achievement and attitude for both low and average achievers were high when taught using appropriate learning styles.

The benefit of learning was noted by Chong-Cheng (2008) who submitted that it is not importance but of can help improve academic achievement of used correctly in the learning situations. The preference of students differs depending on how best they can manipulate information acquired during learning situation which will contribute to achievement in academic of learners. Report of the study indicated that 10% of texts read were recall easily, 26% of hearing, 30% from sight, 50% of combine sight and hearing, 70% of oral communication, and 90% from participation (Chong-Cheng, 2008). The implication is that each is associated with strengths and weaknesses associated but the way a particular student learns may differ from other. There is tendency that learners with more than one approach will acquire more information and score higher marks when compared to students with one style of learning (Dunn, Beaudry

and Klavas, 2009). In addition, the learning styles variation of gifted and underachieving learners have been reported; between the students with learning disability and average achiever; among different learners with special needs; and students in secondary schools and vocational training students and industrial arts (Dunn and Dunn, 2002). The preference of students can be Kinesthetic instruction (Dunn, 2003).

Students who are low achiever auditory memory may be poor (Dunn and Dunn, 2002), although they may perform well during learning situation while their ability to recall information through lecture, discussion, or reading will result in poor performance particularly in traditional classroom environment where teaching is centred on the teachers while the students listen only. Low achievers are not the only group of students that their learning style varies from high achievers but the style also differ within the group. The academic achievement of impulsive students when compared with students who are reflective in nature is usually poor (Kagan and Kagan, 2007). Academic achievement of learners in both primary and secondary school can be developed significantly when the teaching and learning styles are matched appropriately (Smith and Renzulli, 2004). In the submission of Felder (2005), more is learnt by students when the process of acquiring the information varies as against the use of one learning approach.

The style an individual prefer to acquire information is known as learning styles because it deals with specific way a learner acquire basic knowledge that might be learnt differently as presumed to be suitable (Ciccarelli and Mayer, 2006; Slavin, 2006). Education as a process is continuous that will result in the development of an individual ability for the purpose of achievement in academic in different areas of capacity that be both general and integrated. Academic achievement of students is use as means of determining the level of information that has been acquired by students over time. Students have unique attribute which make them different in various areas of learning (Chan, 2001) which also makes individual learning style to be unique. The differences in approach to learning are variables that can predict academic achievement of students (Wang et al., 2008). Furthermore, the use of appropriate style of learning is critical in the improvement of students' academic achievement. Research findings of Delisle (2002) averred that there is increased in students' performance as a result the using appropriate style of learning that suit the classroom instruction. The academic achievement of students are positively influenced when teacher consider the learning style of

the students (Yahaya and Abdul-Karm, 2003). Thus, employing appropriate learning styles by students will result in obtaining higher marks in test and will be able to gain admission into higher institutions of learning. The finding of Abidin, Rezaee, Abdullah and Singh (2011) on the importance of learning styles further confirms the need to identify students learning approach.

The style adopted in teaching can be adjusted to the learner styles of acquiring knowledge which will help in ensuring that the environment is made conducive to the learners to acquire relevant information. It is however, important that the instructors identify learning style of learners and use it in planning the instruction (Felder and Spurlin, 2005). Researcher has shown the learning styles and academic achievement of students is positively related (Rasimah and Zurina, 2008). The finding of Sriphai, Damrongpanit and Sakulku (2011) on influence of learning style in improving learning process besides effort and hard work was significant. The level of difficulty of a particular subject is not the only factor responsible for learning problem experienced by students but can also be connected with both learning styles and the processes of required to acquire information (Keefe and Ferrell, 2000). One of the characteristics Delisle (2008) and Delisle and Galbraith (2002) linked to underachieving high-ability students was specific preference for a learning style, which can influence motivation in a considerable way to participate in school activities. Irrespective of the high academic self-belief and interest in academic activities, Delisle (2008) averred that there is tendency for underachievers to be involve in learning when their learning style preferences is put into consideration.

The preference for a specific learning in current literature is based on assumption the way people learn varies (Redding, 2000; Tomlinson and Stone, 2009). The reason is that because an individual can learn efficiently and effectively when importance of the preferred learning style is considered during the learning situation. The view of Rayneri, Gerber, and Wiley (2006) that knowledge of learning style of students is important in dealing with underachievement because of the benefit on students' classroom performance. The effect of learning style preferences and students' achievement in academic was considered by Delisle (2008) who opined that it significantly correlates with the achievement of underachieving students. The preference of learning styles among selective consumers was conceptualised clearly (Delisle and Galbraith,

2002). The assertion of Delisle (2008) is that the character of underachieving students is the need for independent learning that directed by teachers minimally.

The study conducted by Kopsovich (2001) on students' learning styles and scores in Mathematics concluded that preference for a specific learning among students positively influenced the mathematics achievement of the students. Data collected from sample selected using random sampling method was analysed using appropriate method. The result showed correlation between learning style and mathematics scores was significant. In summary, the suggestion of the author is that the supply information to teachers about learners' style of acquiring information will be of benefit to academic achievement of students. Gappi (2013) conducted a study that examined relationship between learners' preference styles of learning and academic achievements. The result indicated that the impact of gender, academic programme and age on preference of students style of learning was not related significantly where $r = -0.056$. The implication of the result is that students learning styles preference and academic achievement did not have significant correlation.

Another study that analyse the prevailing learning styles of students in secondary school on academic achievement was conducted by Vaishnav and Chirayu (2013) by randomly selecting 200 students as the sample from 9th – 11th standard of Maharashtra state for the study. The result from the study showed that Kinaesthetic learning style when compared with auditory and visual styles of learning was significantly positive for students in secondary school. The relation between Kinaesthetic learning style and achievements in academic was positive correlation. Although, the correlation between style of learning (visual and auditory) and academic achievement of students was positive but not strong. The three variables that is variables - visual, auditory and kinaesthetic main effect on academic achievement were positively significant (Vaishnav and Chirayu, 2013).

A study conducted by Gokalp (2013) reported that a significant difference in test score (pre and post) of learners exist, that indicated that sample learning style was efficient. The finding revealed applications of the subtests of first and final score on learning styles and academic success had significant differences statistically; the items covered by the sub-tests were learning, effective reading, proposed study, listen, observation, writing, use of library, active engagement in class and motivation and readiness for and taking examination. Abidin, Rezaee, Abdullah, and Singh (2011) determined the prediction of learning styles on

achievement in academic using 317 students in an Islamic school in Malaysia as study sample for the study. The result revealed that the style of learning and achievement in academic had relationship that was significant. It also revealed that the style of learning was the same for learners irrespective of their ability. Moreover, the framework of the learning styles did not change based on subjects but a crucial role is played in learning of all the subjects. Therefore, the need for understanding this phenomenon is suggested by the result.

A study that is related closely investigated the effect learning styles on academic achievement of students in secondary school in Iran by JilardiDamavandi, Mahyuddm, Klias, Daud, andShabani (2011) using The Kolb Learning Style Inventory (1999) as instrument for data collection in eight public schools in Tehran. The sample size comprised of 285 students randomly selected in Grade 10. Academic achievement was determined by calculating the mean scores obtained in English, science, mathematics, history and geography. The results based on the data analysed revealed the corresponding learning styles and academic achievement of students in Iran wasdifferent statistically; specifically, the mean scores for the converging and assimilating groups when compare with the diverging and accommodating groups was higher significantly.

In another study conducted by Erton (2010) using students in first year from five faculties inBilkent University to determine the effect of learning styles on achievement. The findings of the study showed that the relationship between students learning styles and achievement in foreign language had statisticalrelationship that was weak. The correlation coefficient was 0.306.It is critical that different learning styles for assessment instruments exist. Due to the complex nature of learning styles it is difficult to develop a comprehensive instrument for assessment.Most of the instruments for assessment only measures one or two dimensions of learning styles. Since the above described related studies were conducted in non-African countries, the present study will help in understanding the relationship between learning styles and academic achievement in the Nigerian context.

2.3.4 Appraisal of Literature

It is important that teachers of underachieving high-ability students have knowledge of both intrinsic and extrinsic motivation so that they can effectively assist the students to learn using the most suitable motivation for specific learning environment which in-turn will ensure

high academic achievement. The motivation that is not stimulated by any external force is known as intrinsic motivation because it present within an individual while extrinsic motivation is present when there is an external incentive to make an individual act in a particular way. It would be appropriate that extrinsic motivation is less desirable than intrinsic motivation is however, required under certain learning environment.

Literatures review for the study revealed that the between intrinsic motivation and academic achievement is positive and also asserted that an academic activity may be difficult but the intrinsic motivation of students will enable them to persist with the task. This shows that intrinsic motivation is critical for the systematic improvement of students' academic achievement; efficient teaching and natural development of learning capability also requires intrinsic motivation of students. Elucidating on the benefits of intrinsic motivation showed that students who are intrinsically motivated will be more focused during learning situation so that they can acquire the right information that will be needed to achieve as expected. This indicates that both intrinsic and extrinsic motivation will contribute to students' academic achievement either positively or negatively.

Another factor that literature revealed is important to students' academic achievement is academic self-concept. A positive self-concept is synonymous with all things that students desires during learning situation is positive academic self-concept while negative self-concept refers to undesirable outcomes. This shows that the value of positive self-concept as desirable outcome in most learning situation, and is usually used as a mediating factor that will enhance the achievement of other desired outcomes like academic achievement. Different research findings suggested that possessing a positive self-concept is critical to the overall academic achievement among students. There is possibility for students with positive self-concepts to reflect their behaviours before participating in specific activities.

Students learning styles often influence behaviour towards learning. Different preference for learning styles preferences would result in students behaving differently based on perception of and response to the learning environment. Due to the difference in students' preferences for certain learning styles, this research was carried out to examine the variation in the approach to learning by the students, because such information can be of benefit to the teacher through awareness of the nature of the student in the classroom. Attempts have been made to enhance the

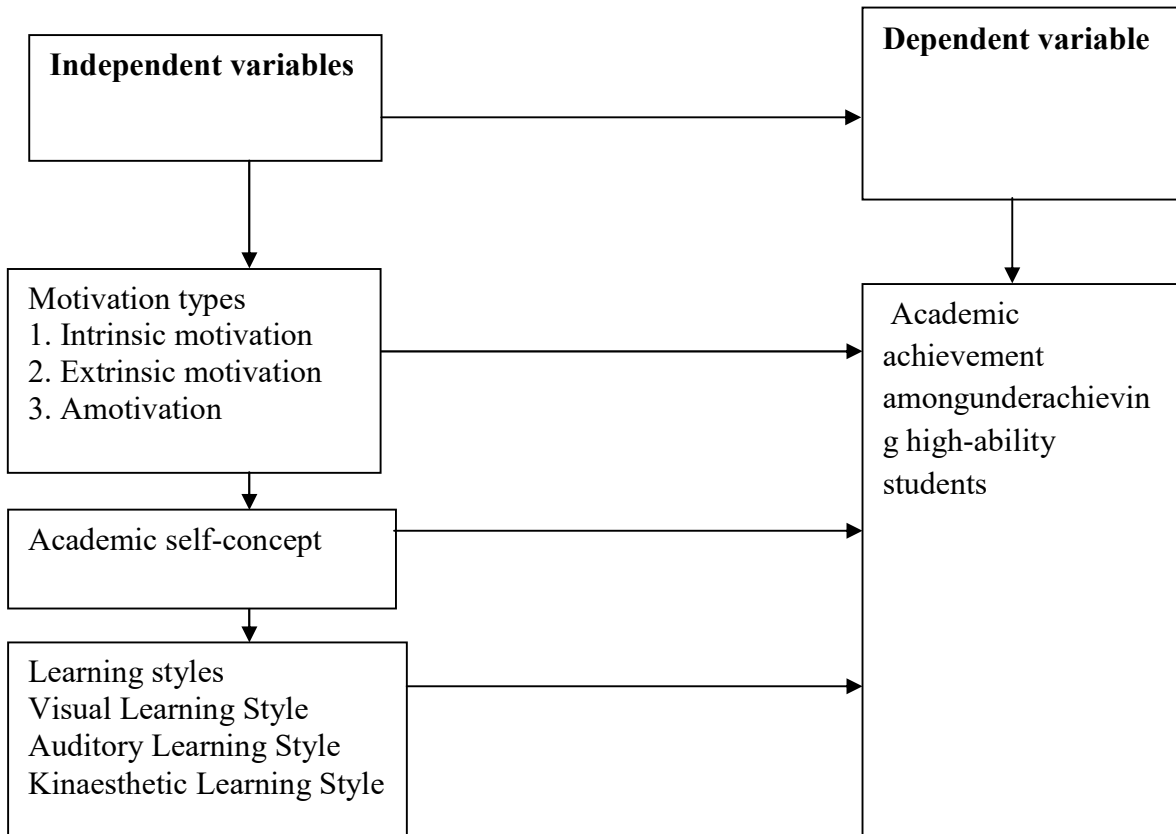
achievement of students through the knowledge of the learning styles. The concern of most teachers who are dedicated to having positive outcome has been the appropriate way to teach through the application of motivation, positive academic self-concept and efficient learning styles. Many educators are convinced that students require positive behaviour towards learning in order to excel academically. Often, one's learning style is identified to determine strengths for academic achievement.

Theoretically, scholars have observed that there is a group of high ability students who possess a discrepancy between their potential ability and performance. This group of high ability students are referred to as underachievers. Academic underachievement can be caused by different factors: personal, cognitive, psychological and pedagogical. Motivation, academic self-concept and learning styles have been identified as some of the variables affecting the academic achievement of high ability students. Motivation as an internal force that activates, guides, and maintains behaviour can influence academic achievement of underachieving high-ability students positively if it is high. This study therefore attempts to find out the predictive relationship between motivation types, academic self-concept as well as learning styles and the academic achievement of underachieving high-ability students. There is an urgent need which this research would meet by enlightening the teachers, school counsellors and policy makers on the way intrinsic motivation and extrinsic motivation can lead inherent pleasure and satisfaction in academic pursuit by the underachieving high-ability students in Oyo state, Nigeria. Also, a positive academic self-concept and efficient use of the three learning styles would be studied in relation to academic achievement among underachieving high-ability students in Oyo State in this study.

2.3.5 Conceptual Framework for the Study

The independent variables for the study are intrinsic motivation, extrinsic motivation, amotivation, academic self-concept and learning styles as they relate to the dependent variable which is academic achievement of Underachieving high-ability students. The response or dependent variable is the result or outcome of the study which is indicated as academic achievement among underachieving high-ability students. While the organism are the Underachieving high-ability students.

CONCEPTUAL MODEL FOR THE STUDY



CHAPTER THREE

METHODOLOGY

This chapter deals with the methodology used such as research design, population, sample and sampling technique, instrumentation, validity and reliability of the instruments, procedure for data collection and the method of data analysis.

3.1 Research Design

The study adopted a descriptive research design of the correlational type to examine the prediction of academic achievement from motivational types, academic self-concept and learning styles among underachieving high-ability students in Oyo State. In other words, it measured the level at which the independent variables relate to the academic achievement among underachieving high-ability students. The study measured the strength of relationship among independent variables and dependent variable using multivariate correlations. This involves studying the situations as they are without any form of manipulation of the variables of interest in the study.

3.2 Population

The population of the study consists of all the underachieving high-ability students in Senior Secondary Schools (SS II) of some public schools in Oyo state, Nigeria.

3.3 Sample and sampling technique

The samples for this study are one hundred and eighty (180) underachieving high-ability Senior Secondary School Students in Oyo state. The study used purposive sampling technique and Multistage sampling technique to select the sample for the study. Nine Secondary schools were selected in three Senatorial Districts in Oyo state using proportional sampling techniques. Twenty Underachieving high-ability students in senior secondary school II were selected from each of the schools in the local governments purposively using their school academic records. A total of nine local governments were involved for the study. At first, the selected participants were nominated by the class teachers based on academic records and screened by the researcher from the list of students using Slosson Intelligence Tests (SIT) for Children and Adult which test

their mental ability. Those that possess high performance on this test of Intelligence were selected as high-ability students.

3.4 Instruments

- i: Slosson Intelligence Test (SIT)
- ii: Student's Academic Record (SAR)
- iii : Academic Motivation Scale (AMS)
- iv: Academic self-concept scale (ASS)
- v: Learning Styles Questionnaire (LSQ)
- vi: English Language Achievement Test and Mathematics Achievement Test

3.5 Description of the Instruments

3.5.1 Slosson Intelligence Test (SIT)

Slosson Intelligence Test (SIT) was used to screen the students with high ability. This is an individual screening intelligence test that is given to one person at a time. It includes many items from the Stanford Binet intelligence scale. Slosson intelligence test is easy and quick estimate of an individual's mental ability and screening of intelligence. The SIT-R is specifically designed to measure the verbal intelligence factor, which is reflected in the Sternberg proposal of intelligence. The following cognitive domains are measured by SIT-R: Vocabulary (VO – 33 items), General Information (GI-29 items). Similarities and Differences (SD-30 items), Comprehension (CO – 33 items), Quantitative (QN -34 items), and Auditory Memory (AM -28 items). The rationale for using this instrument is for identification of high-ability students who later became underachieving high ability students. The instrument is intended to examine cognitive aptitudes. SIT-R has been in use for a long time with a history in mental measurement, it presents a quick estimate of mental ability and it is easy to administer.

Slosson's intelligence test revised (SIT-R) is a foreign instrument but is adapted to suit the Nigerian culture. The words such as “pennies” and “dollars” were replaced with “Naira” and “kobo” respectively. The content in the instrument are written in English language, and these were read to students as they all speak English Language.

The sub-categories are the following:

Vocabulary (VO): The items here show the capability to utilize, comprehend and define words orally. Vocabulary tests were used to evaluate mental ability by many authorities.

Another aspect is the General Information, (GI) is the learning of cultured knowledge that is not directly taught.

Similarities and Differences (SD) is an uncommon attribute that reflects the cognitive ability and the skill used to determine common attributes of two dissimilar concepts. It is a comparison of two dissimilar objects or concepts, which recognizes their likeness and differences, with the comparison at a higher level.

Comprehension (CO) is the cognitive domain that shows mastery of social behaviour. Here common sense with the ability to manipulate proverbs is reflected. It is not concerned with social knowledge and how to act in certain situations.

The Quantitative (QN) domain reflects the skill for mental calculations, to recall important numbers, and mastery of arithmetic process as well as arriving at correct answers.

Auditory Memory (AM): This cognitive area shows the ability to repeat at random, series of digit and several sentences, forward and backwards correctly. Cognitive aptitudes have a long history in mental measurement. Their value, validity and reliability over the years have been proven. This test (SIT-R) in particular was specifically chosen for its simplicity in its administration. There are 187 items in the SIT-R. The SIT-R yields Total Standard Score (TSS) and Mean Age Equivalent Scores (MAE). The total standard score can be converted to Z score, T score, Stanine and percentiles. The test developers warned that, the MAE is to be used with caution as they cannot be used to produce TSS, percentile or any other standard scores. This study is merely concerned with the TSS, which gave the estimate of the respondents.

3.5.2 Student's Academic Record (SAR)

The academic record of students was collected. Their scores on a number of subjects in their Junior Secondary School (JSS) 1-2 examinations were also collected from the classroom teachers. The mean scores were calculated. Those with mean scores of 60 and above and performance below average in one or two subjects were selected to participate in the study. Important information on anecdotal, psychomotor, affective and cognitive domains were taken into cognizance.

3.5.3 Academic Motivation Scale (AMS)

The original scale consisted of twenty-six (26) items which was design by Vallerand, Pellertier, Blais, Briere, Senecal, and Vallieres (1993) for the purpose of measuring Academic Motivation and adapted by the researcher to 33 items. The scale measures academic motivation orientation of the underachieving high-ability students. The name was initially known as Echelle de Motivation de Education (EME) with the aim of measuring motivation which was based on the self-determination theory of Ryan and Deci (2000) and translated into English language appropriately. The level of satisfaction of the internal consistency and temporal stability of the English version known as Academic Motivation Scale (AMS) was determined(Vallerand et al. 1992). The scale is made up of series of question developed to determine the differentaspects of motivation (Cokley et al. 2001). It was adapted to examine why high-ability students desire to attain academic excellence by evaluating intrinsic, extrinsic and amotivation types of motivation. The objective of the scale was to measure motivation among students in the college while the researcher adapted the questionnaire for high-ability students in secondary schools. It is a dependable scale (Ahmed and Bruinsma, 2016). Vallerand et al. (1992) submitted that the questionnaire factorial validity and reliability indicate it is appropriate for education based research. Kuder-Richardsondemonstrated adequate internal consistency. Internal consistency levels of 0.87 revealed that the instrument is valid.

3.5.4 Academic Self-concept Scale (ASS)

Marsh et al 1992 developed the self-description questionnaire which was adopted for collection of data on academic self-concepts of the high ability students. The SDQ was used because the quantifiable data was generated relevant for the study (Dambudzo, 2009). The original instrument validity in recent literatures hasbeen acknowledged as the best multi-dimensional self-concept instruments available. It used a 5-pointlikert format with values between 1 - 5. Kuder-Richardson formula 21 was used to confirm the suitability at 0.85.

3.5.5 Learning Style Questionnaire (LSQ)

The learning styles of the underachieving high-ability students were evaluated using an adapted version of the original Questionnaire. Dunn and Griggs (2003) classifies acquiring information based on the utilizations of various senses when learning (the theory recognizes seeing – visual, hearing-auditory and doing-Kinaesthetic types of learning approach). The questionnaire is a twenty-five item scale using the ordinal scale: (1) Strongly Disagree (2) Disagree (3) Neutral (4) Agree (5) Strongly Agree. A revalidation of this questionnaire has been done by the researcher. Kuder-Richardson formula 21 was used to obtain 0.75 which confirmed the suitability.

3.5.6 Achievement Test in English Language

This consists of 40 questions developed by experts which were drawn from English Language scheme of work. A pilot testing was done on twenty students from different schools out of the areas covered in this study. The achievement tests has been subjected to statistical analysis using Kuder-Richardson 21 to test the suitability. English Language was 0.75 reliability coefficient.

3.5.7 Achievement Test in Mathematics

This consists of 40 questions developed by experts which were drawn from Mathematics scheme of work. A pilot testing was done on twenty students from different schools out of the areas covered in this study. The achievement tests has been subjected to statistical analysis using Kuder-Richardson 21. The reliability coefficient for Mathematics was 0.85.

3.6 Validation of the Instrument

All the instrument used in his study were adapted. This helped the researcher to validate the instruments which were used to establish the content validity of the instruments. Slosson Intelligence Test was constructed and validated by Slosson (1961) and re-normed in 1981. The Revised Third Edition was in 2006. It was designed and organized as a test of general intelligence. Slosson's Intelligence Test (SIT) is foreign test but it has been adapted to suit African Children. For example, certain words and items were changed to suit the culture of the

Participants without altering the content validity of the test (Oduolowu,1998). The test were used in this study to assess the Intelligence quotient of the Participants. The 1960 revision of the Stanford Binet (BS) Intelligence test was used by Slosson as the criterion in building his testand in establishing it's validity. His sample included 701 persons with ranging age from 4 to 18+ tears. Concurrent validity coefficients were calculated separately for each age level and ranged from 0.90 to 0.98. Slosson concluded that the SIT correlated with its criterion.

3.7 Reliability of the Instrument

Reliability is the level of consistency of a measuring instrument to measure what it is supposed to. It represents the degree of accuracy of an instrument in relation to stability, consistency, repeatability and precision based on an appropriate measurement. To be sure of the internal consistency, the instruments was pilot tested on forty (40) respondents that were chosen from the selected schools in the local government areas of Oyo state. Thereafter, the instruments were analysed using Kuder-Richardson 21, and it was found to be 0.81 in overall, which was considered to be reasonable overtime, hence its acceptability for use in this study.

3.8 Procedure for Data Collection

The researcher collected a letter of introduction from the Head of Department of Special Education, University of Ibadan to the selected schools. The researcher visited the State Ministry of Education to collect the list of the total number of schools in Oyo State. The researcher visited the schools where the study were carried out in order to familiarize with the staff and students with the purpose of the exercise. Permission was sought from the Principals of the schools, after which the researcher collected the student's academic records for screening of the underachieving high-ability students. Research assistants were briefed adequately on the importance of the exercise to ascertain its success before the instruments were administered on the identified respondents. Proportional sampling technique were used to identify the participating schools from the list collected. The participants were selected using school academic record which were collected from the teachers. Subsequently the participants were screened using Slosson Intelligence Tests (SIT) and Achievement Test in English language and Mathematics. Afterwards, Academic Motivation Scale, Academic Self-concept scale and Learning styles assessment scale were administered on the participants.

3.9 Method of Data Analysis

The data collected from this research were analysed using Pearson Product Moment Correlation (PPMC) to determine how the independent variables (intrinsic and extrinsic motivation, amotivation, academic self-concept and learning styles) relate to dependent variable (academic achievement) because the study is a correlational study. The variables were measured and then the degree of relationship between independent and dependent variables were determined. Multiple Regression Analyses was used for the determination of the joint contribution of independent variables to dependent variables. All hypotheses were tested at 0.05 level of significance.

CHAPTER FOUR

RESULTS

This chapter presented the results from data examined. The study examined motivation types, academic self-concept and learning styles as it relates to academic achievement among underachieving high-ability students.

The three research questions and seven hypotheses raised were tested using correlation and multiple regression analysis. The summary of the findings were presented as follows:

4.0 Presentation of Results

What is the relationship between extrinsic motivation, intrinsic motivation, amotivation, academic self-concept, auditory learning styles, visual learning styles, Kinaesthetic learning styles and academic achievement of underachieving high-ability students.

Table 4.1: Summary of Correlation Matrix showing the Relationship between the Independent and Dependent variables among Underachieving high-ability students.

	1	2	3	4	5	6	7	8
Extrinsic motivation	1.000							
Intrinsic motivation	0.015	1.000						
Amotivation	0.284**	-.012	1.000					
Academic self-concept	0.265**	0.043	0.567**	1.000				
Auditory learning styles	0.211**	0.023	0.426**	0.752**	1.000			
Visual learning styles	0.422**	-.026	0.486**	0.550**	0.502**	1.000		
Kinaesthetic learning styles	0.456**	-.078	0.331**	0.189*	0.243**	0.617**	1.000	
Academic achievement	0.789**	0.073	0.266**	0.353**	0.276**	0.380**	0.424**	1.000

N.B: ** Significant at $p < 0.01$ *Significant at $p < 0.05$

Table 4.1 showed that extrinsic motivation had significant correlation with academic achievement motivation ($r = 0.789$), amotivation ($r = 0.266$), academic self-concept ($r = 0.353$), auditory learning styles ($r = 0.276$), visual learning styles ($r = 0.380$) and Kinaesthetic learning styles ($r = 0.424$) of the respondents. However, intrinsic motivation ($r = 0.073$) is insignificant with academic achievement. This implies that correlation between extrinsic motivation, intrinsic motivation, and academic self-concept, auditory, visual and Kinaesthetic learning styles were positive and significant.

What is the joint contribution of independent variables to academic achievement of underachieving high-ability students?

Table 4.2: Summary of Regression Analysis of the combined Prediction of Academic Achievement among Underachieving high-ability students by the Seven Independent variables.

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.812	0.659	0.646	3.40304

SUMMARY REGRESSION ANOVA

	Sum of Squares	Df	Mean Square	F	P	Remark
Regression	3856.125	7	550.875	47.568	0.000	Sig
Residual	1991.875	172	11.581			
Total	5848.000	179				

Table 4.2 showed that the dependent variable was predicted by the independent variables (extrinsic motivation, intrinsic motivation, amotivation, academic self-concept, auditory learning style, visual learning style and kinaesthetic learning style) positively. The multiple correlations coefficient as revealed in the table is ($R = 0.812$ and a multiple R square = 0.646) which implies that 64.6% of the variance in the academic achievement among participant is accounted for by the independent variables when considered holistically. This result indicated that the joint contribution of the independent variables to the dependent variable was significant while other variables that were not included in the model may have been responsible for the remaining variance.

What is the relative contribution of independent variables to academic achievement of Underachieving high-ability students.

Table 4.3:Relative contribution of the independent variables to the dependent variable (Test of significance of the Regression coefficients).

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	13.900	1.872		7.425	0.000
Extrinsic motivation	1.215	0.086	0.726	14.066	0.000
Intrinsic motivation	0.006	0.005	0.060	1.343	0.181
Amotivation	-0.093	0.086	-0.061	1.085	0.280
Academic self-concept	0.061	0.021	0.228	2.897	0.004
Auditory learning styles	0.005	0.065	0.005	-0.078	0.938
Visual learning styles	-0.066	0.044	-.0103	-1.491	0.138
Kinaesthetic learning styles	0.193	0.086	0.139	2.245	.026

Table 4.3 showed the relative contribution of the seven independent variables to the dependent variable. The partial correlation coefficients of extrinsic, intrinsic motivation, academic self-concept, auditory learning styles, visual learning styles and Kinaesthetic learning styles have positive relationship with the academic achievement among participants which is actually determined by positive reinforcement of the six variables. Standardized regression coefficient was used in determining the relative contribution of the independent variables on the dependent variable. Extrinsic motivation ($\beta = 1.215$, $t = 14.066$, $p < 0.05$), Kinaesthetic learning styles ($\beta = 0.193$, $t = 2.245$, $p < 0.05$), amotivation ($\beta = -0.093$, $t = 1.085$, $p > 0.05$), visual learning styles ($\beta = -0.066$, $t = 1.491$, $p > 0.05$), academic self-concept ($\beta = 0.061$, $t = 2.897$, $p < 0.05$),

intrinsic ($\beta = 0.006$, $t = 1.343$, $p > 0.05$) and by auditory learning styles ($\beta = 0.005$, $t = 0.078$, $p > 0.05$) in order of the contributions made. It could be inferred that extrinsic, intrinsic motivation, academic self-concept, auditory, visual and Kinaesthetic learning styles contributes significantly to academic achievement among underachieving high-ability students. The most potent contributor among the independent variables to academic achievement among underachieving high-ability students in Oyo state is extrinsic motivation followed by kinaesthetic learning style, intrinsic motivation, amotivation, academic self-concept, visual learning style and auditory learning style. Auditory learning style is the least contributor among the independent variables to academic achievement among underachieving high-ability students

Testing Hypotheses

There is no significant relationship between extrinsic motivation and academic achievement among underachieving high-ability students in Oyo state.

Table 4.4: Relationship between Extrinsic Motivation and Academic Achievement among Underachieving high-ability Students

Variable	N	Mean	Std Dev	R	P	Remark
Extrinsic motivation	180	49.97	5.46	0.789	<0.05	Sig
Academic Achievement	180	50.22	8.30			

Table 4.4 revealed that the correlation coefficient between extrinsic motivation and academic achievement among underachieving high-ability students is ($r = 0.789$, $p < 0.05$). Since $p < 0.05$ it indicates that relationship between extrinsic motivation and academic achievement among underachieving high-ability students is significant. Therefore, the researcher rejects the null hypothesis and concludes that relationship between extrinsic motivation and academic achievement among underachieving high-ability students is significant.

There is no significant relationship between intrinsic motivation and academic achievement among underachieving high-ability students in Oyo state.

Table 4.5: Relationship between Intrinsic Motivation and Academic Achievement among Underachieving high-ability Students

Variable	N	Mean	Std Dev	R	P	Remark
Intrinsic motivation	180	20.78	2.59	0.073	>0.05	NSig
Academic Achievement	180	50.22	8.30			

The results in Table 4.5 showed that the correlation coefficient between intrinsic motivation and academic achievement among underachieving high-ability students is ($r = 0.073$, $p > 0.05$) because $p > 0.05$ it indicates that there is no significant relationship between intrinsic motivation and academic achievement among underachieving high-ability students. Therefore, there is no significant relationship between intrinsic motivation and academic achievement among underachieving high-ability students. The null hypothesis is not rejected.

There is no significant relationship between amotivation and academic achievement among underachieving high-ability students in Oyo state.

Table 4.6: Relationship between Amotivation and Academic Achievement among Underachieving high-ability Students

Variable	N	Mean	Std Dev	R	P	Remark
Amotivation	180	34.81	4.07	0.266	<0.05	Sig
Academic Achievement	180	50.22	8.30			

The results in Table 4.6 showed that the correlation coefficient between amotivation and academic achievement among underachieving high-ability students is ($r = 0.266, p < 0.05$) as a result of $p < 0.05$ it indicates that there is significant relationship between amotivation and academic achievement of underachieving high-ability students. This implies that some high-ability students are amotivated in their academic achievement, thereby they underachieve in one school subject or more and the null hypothesis is not rejected.

There is no significant relationship between academic self-concept and academic achievement among underachieving high-ability students in Oyo state.

Table 4.7: Relationship between Academic Self-concept and Academic Achievement among Underachieving high-ability Students

Variable	N	Mean	Std Dev	R	P	Remark
Academic self-concept	180	49.44	5.24	0.353	<0.05	Sig
Academic Achievement	180	50.22	8.30			

The results in Table 4.7 showed that the relationship between academic self-concept and academic achievement among underachieving high-ability students is ($r = 0.353, p < 0.05$). $P < 0.05$ which implies that relationship between academic self-concept and academic achievement among underachieving high-ability students is significant. This indicates that some high-ability students who possess a positive self-concept are not underachieving. Therefore high-ability students in secondary schools underachieve as a result of a negative academic self-concept that is, when they compare negatively with their learning counterparts. This means that the underachieving high-ability students possess an individual assessment of their ability to learn in the school context which is negative in comparison to the relevant others in the school.

There is no significant relationship between auditory learning styles and academic achievement among underachieving high-ability students in Oyo state.

Table 4.8: Relationship between Auditory Learning Styles and Academic Achievement among Underachieving high-ability Students

Variable	N	Mean	Std Dev	R	P	Remark
Auditory Learning styles	180	28.99	4.70	0.276	<0.05	Sig
Academic Achievement	180	50.22	8.30			

Table 4.8 showed that the relation between academic achievement and auditory learning styles among underachieving high-ability students is ($r = 0.276$, $p < 0.05$). Since $p < 0.05$ it indicates that there is significant relationship between auditory learning styles and academic achievement among underachieving high-ability students. This reveals that participant with auditory learning styles who are underachieving high-ability students attain academic achievement when they learn according to their learning preference that is, when they learn using their sense of hearing. The null hypothesis was therefore rejected.

There is no significant relationship between visual learning styles and academic achievement among underachieving high-ability students in Oyo state.

Table 4.9: Relationship between Visual Learning Styles and Academic Achievement among Underachieving high-ability Students

Variable	N	Mean	Std Dev	R	P	Remark
Visual learning styles	180	37.60	4.37	0.380	<0.05	Sig
Academic Achievement	180	50.22	8.30			

Table 4.9 showed that the correlation coefficient between visual learning styles and academic achievement among underachieving high-ability students is ($r = 0.380, p < 0.05$). Since $p < 0.05$ it indicates that there is significant relationship between visual learning styles and academic achievement among underachieving high-ability students. Thus, it could be concluded that participant with visual learning styles among underachieving high-ability students attain academic excellence when they employ their sense of sight that is, reading, use of graphs, charts and other visual aids which means that the null hypothesis was rejected

There is no significant relationship between Kinaesthetic learning styles and academic achievement among underachieving high-ability students in Oyo state

Table 4.10: Relationship between Kinaesthetic Learning Styles and Academic Achievement among Underachieving high-ability Students

Variable	N	Mean	Std Dev	R	P	Remark
Kinaesthetic learning styles	180	50.16	9.11	0.424	<0.05	Sig
Academic Achievement	180	50.22	8.30			

Table 4.10 showed that the correlation coefficient between Kinaesthetic learning styles and academic achievement among underachieving high-ability students is ($r = 0.424$, $p < 0.05$). Since $p < 0.05$ it indicates that there is significant relationship between Kinaesthetic learning styles and academic achievement among underachieving high-ability students. Thus the conclusion is that the relationship between Kinaesthetic learning styles and academic achievement is significant among underachieving high-ability students.

4.3 Discussion of Findings

The discussion of findings is made in line with the stated hypotheses. The discussion of these findings is substantiated with reports of researches carried out about underachieving high-ability students.

4.3.1 The Relationship between Extrinsic motivation and academic achievement among Underachieving high-ability students in Oyo state

The finding shows that some underachieving high-ability students are mostly extrinsically motivated, their performance falls below expectation in one or more school subjects. This is contrary to the report of the study by Arepattamannil and Freeman (2008) who affirmed that motivational variables and academic achievement relationship is significantly

positive. Areepattannil and Freeman (2008) stated that extrinsically motivated learners are likely to experience high level of anxiety and difficulty coping with failures. The result confirms previous assertion that underachieving high ability students possess a high level of anxiety and a poor ability to excel in their academics. This results is also in agreement with earlier submission of Barron and Harackiewicz, (2001) and Elliot and McGregor, (2001) that those who are concerned with the effect of extrinsic motivation on their behaviours will perform as expected based on the objective which indicate academic achievement. Conversely, Dornbusch, Ritter, Leiderman, Roberts and Fraleigh (2007); Ginsburg and Bronstein (2003) found that students whose major focus is to satisfy the teacher will likely perform below their expected level of ability during assessment in both standardized and regular classroom test.

Extrinsic motivation is important in every learning situation because of the likely contribution to students' academic achievement. Ryan and Deci (2000) opined that it important for teachers to depend on intrinsic motivation so that learning and achievement can be fostered. They need to improve the skill to apply appropriate prompts during learning so as to enhance arousing motivation intrinsically among their students which in turn enable the student to participate in the assigned tasks that are not interesting to them (Mnyandu, 2010). In submission of Ryan and Deci (2000) students are engaged in tasks that they are not interested in performing. Mnyandu It is possible for them to experience both motivations. There is extrinsic motivation when there is external encouragement to achieve academically. Mnyandu (2010) further added that extrinsically motivated ones do not show determination. They have no cause to put in more effort to assigned academic tasks except they are motivated through the use of rewards that is in form of extrinsic motivation. Areepattamannil and Freeman (2008) stressed that motivating students extrinsically will result in creating more anxiety, exhibit poor coping ability with failures.

Teachers need to be watchful while encouraging extrinsic motivation in students. The reason is that exposure to excessive level of extrinsic motivation is detrimental to the development intrinsic motivation. In addition Mnyandu (2010) averred that students who are intrinsically motivated perform well initially but the level of performance will decline when exposed to extrinsic rewards because intrinsic motivation decreases when the perception that behaviour can be controlled using extrinsic motivation (Harackiewicz et al., 1998). Balancing motivation intrinsically and extrinsically is critical (Crous et al., 2000). The motivation to apply

will be determined by specific learning situation. Nilsen (2009) opined that the level of motivation decline among most students as they progress through schooling. He asserted that motivating students requires that attention is given to factors that lead to increase or decline in the morale through policies and practices. Motivation and academic achievement has a complex relationship. Spinath and Steinmayr (2007) reported that high and persistent level of motivation is required for an individual to be adequately prepared for life-long learning.

There is a general consensus among researchers that the different levels of learning motivation will enhance academic achievement among students (Schick and Phillipson, 2009). An important predictor to the differences observed in students' performance is motivation which makes it crucial for teachers of underachieving high-ability students to have a good grasp of the students. Motivated learners are enthusiastic and interested in the tasks that will lead to acquiring new information. However, students who are not motivated will not be able to follow instruction and pay less attention to acquiring new skills (Sikhwari, 2004). Nilsen (2009) averred that motivation to learn does not depend on the level of cognitive ability because the scores obtained generally play an insignificant role in determining learning motivation – particular for achievers. Literature supports the assumption that high academic achievement is predicted by high motivation while some findings contrast on the correlation between high academic achievement and motivation is not significant.

Deci and Ryan (2005) submitted that theories and practice revealed that motivation is crucial in determining students' academic achievement. The report is collaborated by Sikhwari (2004) who asserted that almost all academic activities students participate in are influenced by motivation. Lau and Chan (2001) noted the importance of motivation in differentiating between underachieving and high achieving. This shows that high motivation and high achievement in academic are related significantly. In a research by Sikhwari (2004) it was concluded that motivation and academic achievement has high correlation. In the same vein, Ahmed and Bruinsma (2006) reported that motivation and academic achievement are related in a positive way. The result of the study indicated that students with self-determination or intrinsic motivation exhibit high academic achievement. However, Arrepatamannil and Freeman (2008) reported based on study that use 573 students in Grade 11 and 12 in Toronto that the influence of academic achievement on motivational variables is weak correlation among non-immigrant and immigrant groups.

The research findings of Siana, Genda, Lightbody, Pauline, Stock, Ruth and Walsh (1998) concluded that students from Asia reported that their parents and friends contribution to academic achievement was crucial which is consistent with the present result of this study and may be linked to the learning situation. However, one fact that is revealed in the study is that academic achievement depends largely on different factors that can be used to motivate learning. In the assertion of Gesinde (2000) that the willingness to achieve differs among students while the desire to succeed among some students may high when compare with others but may be low for others due to the process of socialization and the learning situation. In the report of Moula (2010) academic achievement and motivation was positively related and submitted that the pleasure to succeed in academic tasks as students are motivated will probably result in improved performance during examinations. In an investigation that adopted the person-centred motivation, academic achievement, and participation in high school setting, a group of researchers examined how academic performance and school engagement were associated with motivational profiles (Wormington, Corpus and Anderson, 2011).

4.3.2 The Relationship between Intrinsic Motivation and Academic Achievement among Underachieving high-ability Students in Oyo State

Findings from the present study indicate that the joint relationship between independent variables and dependent variable is significant and responsible for the academic under-achieving high-ability students. Deci and Ryan's (2005) study confirmed the intrinsic motivation and academic achievement have statistical relationship that is significant. Cokley, Bernard, Cunningham (2001) opined that improving academic achievement can be done using motivation which confirmed that intrinsic motivation predicts academic achievement significantly. This is in contradiction to Mnyandu (2010) findings that intrinsically motivated students' academic achievement is not as high as expected. Gottfried and Gottfried (2004) reported that when intrinsic motivation decreases students' academic achievement will also be on the decline. The study of Deci and Ryan (2005) corroborates the submission that participating in learning process will enhance learning and achievement. Hence, intrinsic motivation leads to academic achievement among underachieving high ability students.

This study also confirms the results of Ames (2000) who stated that underachieving high-ability students who are able to take on challenges, master text independently which is the

influence of high scores and feedback that is positive, performs better academically. Cokley et al. (2001) averred based on findings of the benefits of intrinsic, extrinsic and amotivational styles in determining attitude that are persistence during learning situation that students who persevere during learning initial levels of intrinsic motivation was higher than learners who were unable to complete classes. The implication is that intrinsic motivation and rewarding behaviour are related statistically. The findings of Mnyandu (2010) contradicted the findings of previous researchers who assumed academic achievements and intrinsic motivation are positively correlated because the result revealed that the relationship between intrinsic motivation and academic achievement were not statically related.

4.3.3 The relationship between amotivation and academic achievement among Underachieving high-ability students in Oyo state

In this study, it was evidenced that amotivated students lacked the interest to study and attain academic excellence. However, some of the intrinsic and extrinsic motivated students report trait of amotivation. This contrasts with the study of Mnyandu (2010) who found that amotivated students have no trait of intrinsic or extrinsic motivation. The result indicates that some of these underachieving high-ability students are experiencing some traumatic incidence that influences their desire or motivation to excel or study hard. This finding supports Ahmed and Bruinsma (2006) who concluded that students who are amotivated do not feel the relationship between action that they intend embarking in and the outcome of such action. The students will feel that they lack the capacity and personal control over the outcome. This could be as a result of some traumatic experience(s). The result from this study revealed that amotivation correlates negatively with academic achievement among underachieving high ability students. Therefore, when amotivation is high, academic achievement among high-ability students diminishes.

This study confirms that the amotivated underachieving high-ability students lack intrinsic motivation. The finding corroborates the report of Ryan and Deci (2000) who said that an amotivated student lacks intentionality in academics. Berg and Coetzee (2014) found the level of significant of amotivation in the variance of students' academic achievement was 5% among learners in third-year. However, the corresponding influence shows that the relationship is minimal and the importance of the result is not relevant. The negative correlation

between students' academic achievement and amotivation revealed that the high score of students on the amotivation sub-scale indicated poor achievement academically. Academic achievement of high ability learners determines success in learning situations. For this reason, understanding which factors are responsible predicting academic achievements is important (Ahmed and Bruinsma 2016). In the same vein, Dambudzo (2009) opined that the concern of teachers is the physical, emotional and social development of student and focused specifically on cognitive ability that contributes to academic achievement among underachieving high-ability students.

Prescott (2008) asserted that the level of student achievement is consistent with self-belief among underachieving high-ability students. Literature reports that many underachievers' academic self-concept, self-regulation and self-motivation when compared to others is lower (Reis and McCoach, 2000). Moreover, their behaviour is less directed towards specific goal while negative attitude to learning is on the increase when compared with high achievers. McCoach and Siegle (2003) averred that two important determinants of academic achievement are academic motivation and self-perception. This is supported by Green et al. (2006) assertion motivation and self-concept influence performance among student, level of academic success and eventually long-term health and wellbeing. Sikhwari (2014) submitted achievement in academic of students and the students' self-concept is significantly related. He also opined that the correlation between motivation academic achievements of students was positively related. Zimmerman (2000) pointed out their beliefs as being crucial in academics. Rodriguez (2009) stated that motivational orientation is determined by academic self-concept. This means that the high-ability students who possess inherent satisfaction or pleasure in studying hard often possess a positive self-perception of their ability within the academic realm.

4.3.4 The Relationship between academic self-concept and academic achievement among Underachieving high-ability students in Oyo state

The relationship between academic self-concept and academic achievement is significant among underachieving high-ability students. This finding confirmed that students with high-ability require high academic self-concept for them to perform well academically. Vialle, Heaven and Ciarrochi (2005) also submitted that positive academic self-concept results in expected behaviour among high-ability students while a negative self-concept ends in

undesirable outcomes. Some of the participants of this study (underachieving high-ability students) claim that they have trouble with some mathematical equation, despite being good at most academic subjects. That is, the study confirmed that some underachieving high-ability students reported a negative mathematics academic self-concept as a result of failures or low performance. They lose their self-confidence in learning. Lui and Chan's (2001) study supported the findings that students whose level of ability is low exhibit perception of academic self-concept that is significantly lower when compare to the average and high-ability students. Olatunde (2010) also corroborated the result of this study, while stating that low academic self-concept indicate that commitment during learning situation is low.

This submission, contradicts the findings of Hamachek (2005) who stated that students whose academic self-concepts is positive exhibit behaviours that are discouraging. The study of Watkins and Dong (2007) are similar to the present study in that high-ability students had more positive self-perceptions on the scales for school compared to their average counterparts. A study by Lau and Chan (2001) contrasted the findings and stated that the self-confidence of underachievers decline with regards to learning and this will result in retardednegative academic self-concept. The vicious cycle of the negative relationship between academic self-concept and achievement is of concern to teachers and stakeholder in the education sector. Another study conducted by Ahmed and Bruinsma (2006) reported thatlearners' academic self-concept and achievement in academic is positively related. The result affirms the submission higher achievement is predictor by students' positive perception of personal capacity. Michie, Glachan and Bray (2001) concluded that student positive academic self-concepts identify intellectual interest as a factor for their university admission. The students were more interested in the coursework and score obtained is consistent with their assumed ability with likelyconfidence and greater satisfaction with the life at college.

Many research findings have concluded that self-concept based on academic and achievement are linked across various academic domain, age groups, and cultural difference (Marsh, 1992; Marsh et al., 2015). Moller, Streblow, and Pohlmann, (2009); Strein, (2006) found self-concept and achievement academically are significantly related, with correlation coefficients ranging from -0.57 to + 0.51. However, most of the studies found no significant correlation (Feiwell, 2007; Tabone, 2011). On the one hand, previous research found that academic self-concept diminishesduring adolescence but increases from early adulthood (Liu,

Wang, and Parkins, 2005; Marsh, 1989). In contrast, Chapman (1988a) found that academic self-concept of underachieving high ability reduces by Grade 3 and stabilizes through high school. Further, there is a mathematics achievement gap with underachieving high ability students and this achievement gap has continued to widen (National Assessment of Educational Progress, NAEP, 2013). Based on analysis of NAEP (2013) 55% of Grade 4 learners with disabilities in comparison to 85% of learners without disabilities in the same grade had above the basic level. At the Grade 8 level, the percentages were 35% and 79%, respectively. By Grade 12, the percentages were 25% and 69%, respectively.

The above data indicates that the mathematics achievement gap between underachieving high ability students increased from Grade 4 (31%) to Grade 8 (44%) and 12 (44%). In addition, in their meta-analysis study, reviewing 14 relevant studies published from 1974 to 2013 that focused on underachieving high ability students, Zhang and Cavendish (2015) found correlation between academic self-concept and achievement in mathematics was not significant for underachieving high-ability. The correlation increased from primary school to secondary school but decreased at high school, with the strongest magnitude at secondary school. Close examination revealed that achievement in mathematics has a stronger relationship to academic self-concept than other subjects (Jansen, Schroeders, Ludtke, and Marsh, 2015; Marsh and Yeung, 1997a; Moller, Streblov, and Pohlmann, 2009). Moreover, National Council of Teachers of Mathematics (NCTM) (1989) published a series of mathematics standards to improve mathematics achievement of all students in America, including students with special needs.

However, while these standards provide useful guidance for students, teachers and schools for teaching mathematics, equity in mathematics education is still a concern with regard to students with diverse backgrounds, especially for students with underachieving high ability students. As mentioned above, there has still been a persistence mathematics achievement gap between students with high ability students which keeps widening from Grade 4 to Grade 12 (NAEP, 2013). In the submission of Lent, Brown, and Gore (2007) academic self-concept predicted academic achievement of students significantly during college. Academic self-concept influences areas such as educational and career aspirations of high-ability students which in-turn affects academic achievement (Rimm, 2005; 2007). Students who are gifted and high ability are different from average ability students as regards

self-concepts, especially as relates to academic self-concept (Pyryt and Mendaglio, 2004). Generally, high ability student possess academic self-concept that are higher than average students (Colangelo, Kelly, and Schrepfer, 2007; Litster and Roberts, 2011). Findings have shown that level of confidence in academic abilities among high-ability students is high (Mathiasen, 2005). Further research has also proved that high ability students academic self-concept is higher than their equally able peers (Rinn, 2007).

In the findings of Kamba (2009) the correlation co-efficient of 0.695 (0.70) was found between self-concept and academic achievement which shows the relationship was positive and significantly moderate. In another study involving 1,722 Senior Secondary School II students in selected schools in southwestern Nigeria, Yara (2010) concluded that the performance of students with high and positive self-concept was satisfactory in relation to academic achievement. On the basis of the findings, it can be presumed that students with positive academic self-concepts have the pleasure of achieving high in academics, act fast during learning situations because they place high value on the benefits of high academic achievement. Moreover, students with high and positive self-concept may likely develop internal motivation to strive for excellence in mathematics rather than being indifferent and passive.

4.3.5 The relationship between Auditory learning styles and Academic achievement among Underachieving high-ability students in Oyo state

Table 4.5 showed that auditory learning styles and achievement is significant among underachieving high-ability students. The study by Dunn, Beaudry and Klavas (2009) affirmed that the scores on standardized achievement and aptitude assessment are high for both low and average achievers when the teachers consider different attitude of students to classroom interaction. Dunn and Dunn (2002) affirmed that underachieving high-ability students have the tendency to develop auditory memory that is weak. The performance is poor due to inability to efficiently recall information required to achieve as expected particularly in learning situation dominated by the teachers. Matthews (2005) averred that it is crucial for educationists to realize that there are different approaches to learning. This is asserted in the performance of individual participating in learning the same way but performing differently. The learning styles of the students is one concept that details the differences in students' academic achievement. Reid (1995) noted that in the field of language learning perception of learning styles, intellectual

learning styles and efficient learning styles are three important approaches required to acquire new information. Dunn (2000) reported that visual learner may have challenges when the mode of teaching is auditory (lectures) unlike learners that are auditory in nature.

In the view of Reid (2007) students may use two or more learning styles and switch between the styles to the one that suit the learning situation without difficulty so that information is easily acquired. It is critical that the variation of learning styles among learners is determined and identified with the view of understanding the characteristics of each of the learning styles preferences because such information will enable the teacher become delicate to the different behaviour that the learners will bring to the learning environment (Felder and Spurlin, 2005). The finding is consistent with Chong-Cheng (2008) who submitted that it is not importance but of can help improve academic achievement if used correctly in the learning situations. The preference of students differs depending on how best they can manipulate information acquired during learning situation which will contribute to achievements in academic of the learners. Report of the study revealed that 10% of texts read were recall easily, 26% of hearing, 30% from sight, 50% of combine sight and hearing, 70% of oral communication, and 90% from participation (Chong-Cheng, 2008).

Mullis, Martin and Foy (2008) reported that although students make adequate preparation and within classroom performance, the academic achievement of male is higher when compare to that of female at any level of education on standardised tools measuring Mathematics performance which contradict the submission of Ingels and Dalton (2008) who reported that females performance is not different to male peers.

4.3.6 The relationship between Visual learning styles and Academic achievement among Underachieving high-ability students in Oyo state

The results in table 4.6 showed that visual learning styles and academic achievement is significant among underachieving high-ability students. In a study by Delisle (2002), students' performance improved when learning situation consider individual difference. The finding revealed that some students depends the sight to acquire relevant information. Knowledge is organized based on spatial interrelationship among ideas and store it graphically (Nilson, 2003). While auditory learners' performance will improve based they can hear in the classroom interaction (Nilson, 2003). Interest in learning styles is due to the need to improve on the performance of students so that achievement can be real. According to Cassidy (2004) increased

interest on the influence of learning styles on academic achievement revealed that learning does not only rely on level of intelligence and that motivation improve performance. Drysdale Ross and Schulz, (2001) averred that academic achievement in higher institution is predicted by availability of material and the way students process new information. Nelson et al (in Drysdale et al) reported that assisting students to identify their learning styles and development of appropriate study skills based on learning styles preference influence academic achievement positively.

Similarly, O'Brien (2001) concluded that learning styles difference was connected academic achievement. Dunn et al (1995) revealed that learners who were with suitable learning styles academic performance was better when compare to learners who learning was not matched with their learning styles. In the vein, Griggs and Dunn (2006) asserted that students who approach instruction based on compatibility with learning styles had academic achievement which was higher and had positive attitude towards learning when compared to significant others. The study of Drysdale et al (2001) on learning styles as determinant of academic performance using 4,546 students in first-year concluded that learning styles and academic performance in (eleven) 11 of the (nineteen) 19 courses was related significantly but revealed academic performance and learning styles was not significant in liberal arts and social sciences' of learner. The assertion of Castro and Peck (2005) based on difficulties associated with learning among foreign students and style of learning at the college level is that learners has preference for learning styles that will ensure that success is achieved while participating in any learning situation including foreign language. However, there was no significant relationship between grade level and learning styles when Kolb's learning styles was use in analysing the grades distribution. In a similar study by Tight's (2007) that investigated student attending English college learning Spanish revealed the performance of students was the same on test of vocabulary irrespective of preference of learning styles perception. The study by Renou (2012) examined the relationship between a specific learning styles (visual, auditory or tactile) perception and success among students in an introductory university-level French course and reported that success was measured using grade obtained but did not particularly indicate proficiency level is accurate. However, the tendency to equate academic grades with success among students may occur.

4.3.7 The relationship between Kinaesthetic learning styles and Academic achievement among Underachieving high-ability students in Oyo state

The result reveals that the relationship between Kinaesthetic learning styles and academic achievement of participants was significant. This is consistent with Kopsovich (2001) who investigated the correlation between students' learning styles and scores obtained in Mathematics on Texas assessment of academic skills test submitted that preference of students' learning styles influenced achievement in mathematics scores significantly as a result of persistency. The Pearson Product Moment Correlation coefficient and the Point-biserial correlation analysis was used in analysing data collected from students in fifth grade in North Texas Intermediate school. The relationship was significant where $r = 0.542$ $p < 0.05$ level of significance. Another study conducted by (Gappi, 2013), on the student's preferred learning styles and their academic achievements indicated that there is a significant relationship between Kinaesthetic and underachieving high-ability students. This study corroborated the findings of this present study as some of the participants indicated that they understand what they learn better when they are involved in the practical aspect and creative work with their hands.

However, the study by Kagan and Kagan (2007) contrasted the findings of this study since they found that underachieving high-ability students are impulsive and exhibit poor academic achievement in some creative work. The study of Drysdale et al (2001) on learning styles as determinant of academic performance using 4,546 students in first-year concluded that learning styles and academic performance in (eleven) 11 of the (nineteen) 19 courses was related significantly but revealed academic performance and learning style was not significant in liberal arts and social sciences' of learner. Learners who preferred tactile styles of learning should be encouraged to learn by making the learning situation tangible so that they can put their hands on the instructional materials which will make the knowledge acquisition easy.

CHAPTER FIVE

SUMMARY CONCLUSION AND RECOMMENDATIONS

This study was carried out to examine how intrinsic motivation, extrinsic motivation, amotivation, academic self-concept and learning styles relates to academic achievement among underachieving high-ability students in Oyo state, Nigeria. The Independent variables were motivation types (Intrinsic, Extrinsic and amotivation), academic self-concept and learning styles (auditory, visual and kinaesthetic). This chapter discusses the summary of findings, conclusion, recommendations and suggestions for further study.

5.1 Summary of Findings

The findings of this study were as follows:

1. The relationship between extrinsic motivation, amotivation, academic self-concept, kinaesthetic learning styles, visual learning styles and auditory learning styles and academic achievement was significant which imply that the independent variables predicted academic achievement among Underachieving high-ability students in Oyo state, Nigeria.
2. The relationship between intrinsic motivation and academic achievement among underachieving high-ability students was not significant among study participants.
3. The joint contribution of the independent variables (intrinsic, extrinsic motivation, academic self-concept and learning styles) on academic achievement of underachieving high-ability students in Oyo state was significant.
4. The relative contribution of the independent variables (two types of the motivation - intrinsic and extrinsic motivation, academic self-concept and learning styles) to dependent variable (academic achievement) was significant among of underachieving high-ability students.
5. Auditory learning style is the least contributor among the independent variables to academic achievement among underachieving high-ability students.
6. The most potent contributor among the independent variables to academic achievement among underachieving high-ability students in Oyo State is extrinsic motivation followed by Kinaesthetic learning style, intrinsic motivation, amotivation, academic self-concept, visual leaning style and auditory learning style in this order.

7. The relative contribution of amotivation to academic achievement was significant among underachieving high-ability students.

5. 2 Implication of the Findings

The study established the relationships between independent variables (motivation, academic self-concept, and learning styles) and the dependent variable (academic achievement) among underachieving high-ability students. Various factors interplayed with the motivational types among the underachieving high-ability students. These factors are the internal drive and inherent satisfaction gotten from success in academic endeavour. It can also be deduced from the study that extrinsic motivation is more significant because most students put effort in their study because they want high scores that would make them proceed to higher institution. The students' achievement academically is used in determining successes during learning situations and impact on information acquired. This means that the study identified factors that correlates with academic achievement and result in variation in achievement. The concern of teachers in general is development of learners with reference to physical, social and emotional factors that can contribute to students' achievement not with-standing the intellectual capability of students. The study found that the level of students' achievement is probably related to the learners perceptions while the major focus was on the relationship between academic self-concept, intrinsic, extrinsic motivation and students' achievement in learning situation. It was also discovered in this study that underachieving high ability student have lower academic self-concept, intrinsic and extrinsic motivation and inefficient learning styles. Furthermore, amotivation is the negative aspect of motivation which occurs when the students does not get any pleasure in studying hard. The study has also exposed educationist to the fact that intrinsic and extrinsic motivation interplays with a positive academic concept to produce academic achievement in underachieving high-ability students. Also the combination of appropriate learning styles to suit the learning need of underachieving high-ability students would produce academic achievement.

The study has exposed educationist to the construct of academic self-concept which has been found to be the self-perception of underachieving high ability students which has been formed based on experiences with and interpretations of learning situation. There are different aspects to academic self-concept because as individuals, underachieving high-ability students can classify the various information acquired and justify their academic relationships with their school

counterparts. It is particular to their attitudes to the challenge demanded by different subject areas (English language and mathematics), and supposition generally about personality. Academic self-concept is crucial to success in school because it predicted the achievement of participants in academic pursuit.

5.3 Contribution to Knowledge

This study has contributed to knowledge in the following ways:

It has added to the existing literature on relationship between motivational types, academic self-concept, learning styles and academic achievement of underachieving high-ability students. It has exposed teachers to the knowledge of motivation and how the students who derive an innate satisfaction of joy in learning often experience a drive that propels them towards academic excellence.

The study has also filled the research gap which sought to improve the academic self-concept of underachieving high-ability students. This study has exposed the educationists to the fact that the self-perception of an high-ability student of his/her ability within the school context has a very great relevance in determining whether they underachieve or not. This is because a negative self-perception of one's ability within the academic realm which is a negative academic self-concept can lead to failure and eventual dropping out of school.

The result from the study has confirmed previous literature on the existing relationship between the three learning styles (Visual, Auditory and Kinaesthetic) and academic achievement of participants. The study has revealed to the educationists and policy makers that Underachieving high-ability students need the combination of all the learning styles to learn effectively, that is, the use of all the senses eyes (sight) for reading, ear for hearing and hands for touching and feeling. The study has also shown that improvement in academic achievement of underachieving high-ability students can be made with the application of appropriate learning motivational strategies such as games, quiz competition and so on.

5.4 Recommendation

Recommendations are made based on the research findings which are:

Intrinsic motivation is significant in controlling academic underachievement among underachieving high-ability students. Therefore, it is recommended that underachieving high-

ability students should develop an inherent satisfaction or pleasure in learning. Parents, teachers and guardians of high-ability students should assist the learners in the development awareness of future ambition that should be stream-lined in setting of goals in the academic endeavour. The underachieving high-ability students would please their parents, guardians, teachers and peers when they perform well in their study. Thus, the development of extrinsic motivation in the underachieving high-ability students would enhance their academic achievement. Also governmental authorities can introduce grants and scholarships into the schools to encourage students whose performances are above average. Thus, the high-ability students would desire to excel to their utmost ability and potential despite any financial setbacks. Teachers, parents and guardians should also reduce the use of punishment as controlling strategies so as to reduce amotivation among underachieving high-ability students.

The teachers should organize extra-mural lesson for underachieving high-ability students so as to increase achievements of individual students in academics as this is a good method of developing personal academic self-concept. Also school authorities, principals, teachers, parents, guardians and the public should build good values by inviting community members into the classroom as role models that exhibit good morals worthy of emulation. Teachers should improve on the strategies for enhancing student-teacher relationship, expectations of the teacher and learning situations.

The interventions for learner whose academic self-concept is low should consider their deficiencies and targeted towards the individual needs. Moreover, teachers should guide the use of appropriate learning styles by the underachieving high-ability students. The method of teaching should align with the preferred learning styles of students to correct their underachieving patterns. To prevent and reverse underachievement, supportive strategies must be put in place such are strategies for remedial and develop intrinsic motivation. Such strategies will consider the different learning styles in the learning situation, students' interest will be focused on, and the concern of students with special needs.

Counselling should concentrate on personality dynamics that influences underachievement of high-ability students and how it can be effectively managed such counselling sessions can be done on individual, family or community bases. The goal of the session is to find alternative means of making the students improve on their academic self-concept; identify the most suited learning styles and apply appropriate motivation when learning.

Special instructional strategies can be adopted for underachieving high-ability students either on part-time or full-time learning situation.

5.5 Conclusion

Academic underachievement among high-ability students has created a situation of great concern for parents, guardians and teachers. Hence, it is critical to address the issues causing underachievement in academics. The need to end the inconsistencies between potential and ability in the performance of high-ability students should be the concern of professionals in the educational sector. This will maximize the potential of the students and the nation in general. Motivating intrinsically and extrinsically is related to perceived competence of underachieving high-ability students. They need to possess the willingness to learn through the internal drive of excelling or gaining the parents approval, guardians and peers.

Furthermore, exposing students to strategies that will limit their initiative to learn by promising or attaching positive or negative rewards repeatedly will often lead to loss of enthusiasm to learn which is amotivation. Amotivated students will feel that failure is due to lack of ability to control intended action. Thus, such students will feel that nothing can be done to change the situation but to accept it the way it is. Also students with negative academic self-concept often underachieve because of assumption that such performance is within an individual competence level. This study showed that students' academic achievement is significantly predicted by academic self-concept. From this study, it is evident that learning styles also influence how students learn and each student learn in their own unique way. However, a combination of the learning styles leads to academic achievement.

As a result of the afore-mentioned reasons, the researcher suggested that the teachers of the high-ability students should always create awareness of the importance of intrinsic and extrinsic motivation and academic self- concept among the underachieving high-ability students through proper guidance and developing their interests by creating a sense of goal valuation in these students. The underachieving high-ability students should also be guided by teachers through the employment of appropriate learning styles in combination with teaching strategies to suit the learning materials.

5.6 Limitations of the study

The findings of the study were limited to underachieving high-ability students in nine secondary schools in Oyo state. Broader data and information will be achieved if the scope can be expanded to include other populations of gifted and talented such as pre-school gifted or gifted handicapped and more participants from other geographical zones of Nigeria. At the secondary schools visited, the researcher experienced some limitation because of non-payment of the salaries of teachers. Some of the teachers were reluctant to participate in the study because of this. However, the researcher persuaded them and persisted in visiting the schools until the completion of the study. The findings were equally limited to motivational types, academic self-concept and learning styles. However, these limitation does not underplay the accuracy of the result, conviction and acceptance of a true research which this has provided.

5.7 Suggestions for further studies

Based on the limitation stated above, the following suggestions are hereby made as extension for further studies around this study:

1. The study could be replicated in special schools outside or within the state for generalization on the intervention of underachieving high-ability students.
2. Further research is needed to determine the predictive role of motivation types, academic self-concept and learning styles on academic achievement of other populations in gifted education.
3. Some intervening strategies should also be used in further research to make the study an experimental research rather than survey.
4. Some other moderating variables such as gender and age that could contribute to the differential effect of the motivation types could be examined.
5. A longitudinal research to explore more predictors of academic achievement of underachieving high-ability students could be done.

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APPENDIX A
UNIVERSITY OF IBADAN
FACULTY OF EDUCATION
DEPARTMENT OF SPECIAL EDUCATION
QUESTIONNAIRE ON MOTIVATION TYPES, ACADEMIC SELF-CONCEPT AND
LEARNING STYLES AS PREDICTORS OF ACADEMIC ACHIEVEMENT AMONG
UNDERACHIEVING HIGH ABILITY STUDENTS IN IBADAN, OYO STATE,
NIGERIA

SECTION A: BIO-DATA

Gender of Student: (i) Male () (ii) Female ()

School of student Class student.....

Age of student: (i) 10 – 15 () (ii) 16 – 20 ()

Instructions

Indicate how each of the statement below applies to you. Tick ‘one’ column for each statement.

SD= Strongly Disagree, D = Disagree, NA = Neither Agree nor Disagree,

SA= Strongly Agree, A = Agree

MOTIVATION TYPES SCALE
WHY DO I WANT TO ATTAIN ACADEMIC ACHIEVEMENT?

Extrinsic Motivation

SN	STATEMENT	SD	D	NA	SA	A
1.	Because with a school certificate, I would enter into university to study a good course later on.					
2.	Because I think that attaining academic achievement will prepare me for the career I have chosen.					
3.	To prove to myself that I am capable of going for university degree.					
4.	Because it will prepare me for the job market in the area of my choice.					
5.	Because I believe that a few additional years of education will improve my character as a worker.					
6.	Because it will enable me to make a good decision with respect to my career.					
7.	Because I need a higher paying job and to better good salary later on in life.					
8.	I have the belief that if I study hard, I will become an important personality in the society in future.					
9.	I strive for excellence to get my parent and teachers approval.					
10.	I want to excel so that I would obtain a prize at the end of the term.					
	Intrinsic Motivation					
11.	Because I have excitement and fun when new knowledge is acquired.					
12.	Because of the satisfaction I have when sharing my dreams with others.					
13.	Because attending school will bring the experiencesatisfaction in my desire to be the best during learning situation.					
14.	Because I have pleasure when I perform better than I had done.					
15.	Because I experience pleasure when new information that I did not have before is discovered.					
16.	Because I experience pleasure when I am able to expand my knowledge with regards to exciting subjects.					
17.	Because of the feeling that as a matter of fact my success is relevant for advancement.					
18.	Because I am satisfy with what I read from some authors.					
19.	Because I feel satisfy with my ability to complete difficulty academic tasks.					
20.	I want to be seen as someone that is intelligent.					
21.	I want to have the excitement that I also surpass my					

	personal achievements.					
22.	Because my studies will not prevent me from doing things that I am willing to do.					
23.	Because discovering something new gives my pleasure.					
24.	I have 'high' feeling when reading subjects that are of interest to me.					
25.	For the pleasure I experience when I read interesting authors					
26.	Because of the desire to be seen as successful in any learning situation					
	Amotivation					
27.	I find it difficult to learn something new because understanding is a challenge.					
28.	Honestly I don't know what should be done to attain academic excellence.					
29.	I once had reasons why I want to attain academic achievement but now I feel it is not necessary to continue.					
30.	Some experiences are discouraging me from exerting more effort in my study.					
31.	I feel that I am being forced to come to school.					
32.	I experience difficulty in finishing school/home assignments.					
33.	I cannot study on my own without adult supervision.					

ACADEMIC SELF-CONCEPT SCALE

SN	STATEMENT	SD	D	NA	SA	A
1.	Most academic tasks are interesting and rewarding					
2.	I have challenge when I want to express my thoughts through writing.					
3.	I am excited working on my academic tasks.					
4.	I have difficulty finding solution to new academic problems.					
5.	I usually have hesitation doing any course that related to mathematics					
6.	I write efficiently.					
7.	I dislike studying different subject areas.					
8.	I like using initiative in a unique way.					
9.	Generally my performance in mathematics is better when compare to other subjects.					
10.	My vocabulary is poor in relation to my peers.					
11.	I enjoy all assigned academic tasks.					
12.	I have desire to develop my imagination and unique ability.					

13.	I have a feeling of inadequacy when solving Mathematics.					
14.	I read wide and broad to learn something new.					
15.	I have challenge with all assigned academic tasks.					
16.	I have pleasure discovering new solution to academic problems.					
17.	I have peculiar ability in solving Mathematics					
18.	My performance on test of verbal reasoning ability is very poor.					
19.	I am good at most academic subjects.					
20.	I have great difficulty solving problems independently.					
21.	I find it difficult to understanding Mathematical based tasks.					
22.	I have good verbal skills when compared to peers.					
23.	I have no special interest in majority of academic activities.					
24.	I am curious intellectually.					
25.	I always perform above average in mathematics task.					
26.	I have to read more than once to have good grasp of the information.					
27.	I am a fast learner.					
28.	My ability to initiate ideas, thoughts, and actions is poor.					
29.	My performance in mathematical reasoning test has always been below average.					
30.	I am good at sharing my ideas.					
31.	I dislike majority of academic tasks					
32.	I imagine a lot about new things.					
33.	My friends usually approach me for assistant in mathematics related task.					
34.	I have more difficulty developing my reading skills when compared to my peers.					
35.	I obtain high scores in all my academic tasks.					
36.	I am not interested in inventing something new.					
37.	I do not feel excited doing Mathematics.					
38.	I am good at reading comprehension.					
39.	I feel that achieving academic distinction is impossible no matter how hard I try.					
40.	I usually find alternative methods of solving a task.					

LEARNING STYLES QUESTIONNAIRE - AVK

		SD	D	NA	SA	A
	AUDITORY					
1.	I perform better if the book is read to me by another person other than myself.					
2.	I speak to myself when working number problems.					
3.	I find it easy to recall information I heard compare to the one I read.					
4.	I can add number without difficulty when the numbers are called without writing in a book.					
5.	I find it easy to recall information I once heard than the one I read.					
6.	I can recall phone numbers I heard easily without having to write it.					
7.	I learn better when I participate in group discussion than personally reading.					
8.	I perform on test that related to when I heard in the classroom.					
9.	I feel comfortable when the numbers of challenges is describe while solving it.					
	VISUAL					
10.	I find it easy to work with numbers that are written than oral ones.					
11.	I easily remember words that I have written many times					
12.	I prefer reading story than listening to it.					
13.	I am comfortable with directions that is written than describe.					
14.	I have not challenge understanding written number problem like the one I hear					
15.	Numbers that are written are easy to remember than the one I heard.					
16.	Spelling a word is better recall when written than orally done.					
17.	I prefer reading instruction from a book than the teacher telling me about it.					
18.	I describe a problem to myself for better understanding..					
19.	I understand the prices of things that are written down than having say it to me.					
20.	I do not understand a number that is said to me except I see it written in a book.					
21.	I understand academic tasks that are written in books.					

	KINAESTHETIC					
22.	I have better understanding when I participate actively in the academic task.					
23.	I prefer to do things using my hands.					
24.	I remember the instruction better when I am involved in the practical aspect of the studies.					
25.	I like doing things that are creative with my hands.					

ENGLISH LANGUAGE ACHIEVEMENT TEST

There are four sections in this subject.

SECTION 1

Choose the word opposite in meaning to the underlined word.

1. Nobody expects Blessing to show.....for her brother but she certainly bestows too much affection on them. (a) Consideration (b) association (c) partnership (d) devotion (e) hatred.
2. What should have been a source of motivation for him proved a terrible source of..... (a) failure (b) harm (c) discouragement (d) uncertainty (e) distribution.
3. Too many theories will not help us, we need to be.....(a) bookish (b) hypothetical (c) antithetical (d) shred (e) practical.
4. The old contractor is good at terminating younger associate's projects but has not been able ofany new one (a) initiating (b) finishing (c) completing (d) integrating (e) perfecting.
5. The woman who expected to be accorded respect was treated with.....(a) honour (b) scorn (c) kindness (d) disloyalty.

SECTION 2

From the words or groups of words lettered A to E below each of the following sentences, choose the 5.6 word or group of words that is nearest in meaning to the underlined word or group of words as used in the sentence.

6. But for the principal actor the play would have been dull (a) important (b) head (c) main (d) master (e) famous.
7. Chinua Achebe is a renowned novelist (a) wonderful (b) famous (c) trustworthy (d) fascinating (e) witty.
8. The task before us is enormous (a) great (b) awkward (c) heavy (d) ominous (e) serious.
9. The professor showed much erudition in the lecture he delivered (a) ostentation (b) quotation (c) acclamation (d) learning (e) tautology.
10. Nelson Mandela surmounted all the oppressive measures to break his will (a) overcame (b) fought (c) renounced (d) voluble (e) embraced.

SECTION 3

From the words lettered A to D, choose the word or group of words that best completes each of the following sentences.

11. Joy is by far..... of the girls (a) most brilliant (b) the most brilliant (c) the more brilliant (e) more brilliant.
12. We have started operating the(a) national new education policy (b) new education policy (c) new national education policy (d) new national policy education.
13. The lady.....here tomorrow (a) arrive (b) arriving (c) arrives (d) arrived.
14. There is a serious conflict.....the two of them (a) between (b) amidst (c) across (d) among.
15. The old woman has been ill.....(a) before (b) for (c) since (d) through.

SECTION 4


From the words lettered A to D, choose the word that has the same vowel sound as the one represented by the letter(s) underlined. An example is given below:

Example: Seat (a) sit (b) cite (c) set (d) key

The correct answer is D because only key contains the same vowel sound as the one underlined in seat.

16. Coin (a) lawn (b) coy (c) alone (d) com.
17. People (a) meat (b) leopard (c) shone (d) pip
18. Pool (a) book (b) suit (c) pole (d) shock
19. Leagues (a) lick (b) pleasure (c) people (d) learn
20. Teak (a) tick (b) take (c) tide (d) heed

MATHEMATICS ACHIEVEMENT TEST

1. If x and y are positive integers, which of the following is equivalent to $(2x)^{3y}$?
 (a) $(2x)^y$ (b) $(2x)^{2y}$ (c) $(2x)^y (2x)^{2y} - 1$ (d) $(2x)y(4xy-1)$ (e) $(2x)y(2x)^3-1$
2. 4, 11, 18.....
 In the sequence above the first term is 4 and each term is 7 more than the previous term. What is the 12th term of the sequence? (a) 77 (b) 81 (c) 84 (d) 86 (e) 92.
3. The average (arithmetic mean) of t and y is 15, and the average of w and x is 15. What is the average of t, w, x and y ? (a) 7.5 (b) 15 (c) 22.5 (d) 30 (e) 60.
4. In the figure above, triangle ABC is inscribed in the circle with centre O and diameter AC. If $AB = AO$, what is the degree measure of $\angle ABC$? (a) 15° (b) 30° (c) 45° (d) 60° (e) 90° .
5. If x and y are integers $7 < y < 16$, and $\frac{x}{y} = \frac{2}{5}$, how many possible values are there for x ?
 (a) One (b) Two (c) Three (d) Four (e) Five
6. In  ABC above, $AB = AC$, E is the midpoint of AB, and D is the midpoint of AC, If $AE = X$ and $ED = 4$, What is length BC? (a) 6 (b) 8 (c) $2x$ (d) $4x$ (e) $4x^2$
7. If x is the median of the 7 numbers listed above, which of the following could be the value of x ? (a) 5 (b) 8 (c) 9 (e) 16
8. Two spheres one with radius 7 and one with radius 4, are tangent to each other. If P is any point on one sphere and Q is any point on the other sphere, what is the maximum possible length of PQ? (a) 7 (b) 11 (c) 14 (d) 18 (e) 22
9. How many vertices has cone? (a) 5 (b) 4 (c) 3 (d) 2 (e) 1
10. Evaluate $\log_{10} 20$ (a) 2 (b) 3 (c) 4 (d) 5 (e) 1
11. Evaluate $(20_{\text{three}})_2 - (11_{\text{three}})_2$ in base three (a) 101 (b) 121 (c) 202 (d) 2020 (e) 201
12. If N varies directly as M and $N = 8$ when $M = 20$, find M when $N = 7$ (a) 13 (b) 15 (c) $17\frac{1}{2}$ (d) $18\frac{1}{2}$ (e) $9/8$
13. A man is four times as old as his son. The difference in their age is 36. Find the sum of their ages (a) 45 years (b) 48 years (c) 60 years (d) 74 years (e) 95 years
14. Factorize $6x^2 + 7x - 20$

(a) $(6x-5)(x+4)$ (b) $2(3x-5)(x+2)$ (c) $(3x+4)(2x-5)$ (d) $(3x-4)(2x+5)$ (e) $(6x+5)(x+4)$

15. Simplify $\frac{2}{8} \times \frac{-1}{27} \times \frac{3}{3}$

(a) $1\frac{1}{3}$ (b) $1/9$ (c) $1/3$ (d) $9\frac{1}{3}$ (e) $1/3$

16. Calculate, correct to two significant figures, the percentage error in approximating 0.375 to 0.4. (a) 2.0 (b) 2.5 (c) 6.6 (d) 6.7 (e) 6.3

17. The gradient of the line $x = \frac{1}{2}y$ is (a) 0 (b) $\frac{1}{2}$ (c) 1 (d) 2 (e) undefined

18. What is the 10th term of the arithmetic progression -3, 7, 17.....?

(a) 33 (b) 37 (c) 87 (d) 97 (e) 107

19. Evaluate $(-3)^3 \times (-2)^4$ (a) 12 (b) $(-6)^{12}$ (c) 6^3 (d) 12^3 (e) 12

20. $Px^2 - py^2 + qx^2 - qy^2$

(a) $(p-q)(x+y)(x-y)$ (b) $(p+q)(x^2-y^2)$ (c) $(p+q)(x+y)(x-y)$ (d) $(p-q)(x^2+y^2)$ (e) $(p-q)(x+y)$

APPENDIX B
ADAPTED SLOSSON INTELLIGENCE TEST (SIT)
From Third Revised Edition by Richard Slosson (2006)
TEST QUESTIONS

Begin testing the items as suggested by the subject's age. Continue until a basal often ten (10) correct responses are obtained. If necessary, begin at a lower level than indicated and/or proceed backwards until ten (10) correct responses are obtained. Continue testing upwards until ten (10) incorrect responses are obtained, at that point discontinue testing. Items marked refer to back of the score sheet.

Begin age twelve

1. HOW MANY DAYS ARE THERE IN A YEAR?

365; 365¹/₄; 366; 36.25

2. WHAT DOES ENVIRONMENT MEANS?

Surroundings; the outside things which influence us; all around us

3. WHY DOES THE GOVERNMENT REQUIRE A NURSE TO PASS A WRITTEN EXAMINATION BEFORE WORKING AS A NURSE?

To be sure the nurse knows what to do; has been trained well; has the knowledge to do nursing; knows how to take care of sick people

FINISH WHAT I SAY: ART IS CREATIVE A TORNADO IS.....

Descriptive

4. SAY THIS SENTENCE EXACTLY AS I SAY, LISTEN CAREFULLY AS I CANNOT REPEAT IT, SAY: "GOES FAST", NOW LISTEN CAREFULLY AND SAY EXACTLY WHAT I SAY: "THE TRAIN GOES FAST ON THE TRACKS CARRYING PEOPLE AND BAGS OF MAIL".

Must repeat sentence exactly and in the correct order.

5. WHO WAS THOMAS EDISON? WHAT DID HE DO?

Inventor; worked with electricity; invented (discovered) light bulb; movies; phonograph (or any of his other invention)

6. HOW LONG MUST A PERSON WORK AT #5.00 PER HOUR TO EARN #60.00?

Twelve (12) hours

7. WHAT WOULD A MAN DO IF HE TOOK AN INVENTORY OF HIS STORE?

He would count everything to see how much he had; itemize his goods; make a list of what he had on his shelves; take stock of his goods; list his goods (at the end of the year)

8. WHY SHOULD WE RECYCLE GLASS AND PAPERS?

To conserve glass, wood, trees; for conservation reasons; to save energy needed to make (produce) glass and paper.

Score zero: It is the patriotic thing to do.

9. HOW MANY MINUTES ARE THERE IN THREE-FOURTHS OF AN HOUR?

Forty-five (45)

Begin age thirteen

10. WHAT DOES MIGRATE MEANS?

To move (from one place to another); to go from one place to another; to go south in the winter like birds and north in the summer; to go like fish from fresh water to salt water; like salmon

11. WHAT IS AN ADVANTAGE OF WORKING A LONG TIME AT ONE PLACE THAN CHANGING JOBS OFTEN?

One builds up security and retirement; establishes a good reputation; is more likely to advance. *Any sensible response in reference to working a long time at one place.*

12. WHAT SHOULD A HEALTHY PERSONS TEMPERATURE BE WHEN HE/SHE HAS NO FEVER?

97-99degrees F or 36-38degrees C. Accept either answer.

Must pass one set.

13. SAY THESE NUMBERS BACKWARDS. FOR EXAMPLE, IF I SHOULD SAY: 1 2 3, YOU WOULD SAY: 3 2 1, NOW SAY THESE NUMBERS BACKWARDS WHEN I FINISH SAYING THEM: 7 2 4 8 1. If failure say: say these numbers backwards: 5 3 9 6 2.

Say the numbers slowly, about one second apart; do not group the numbers in any way.

Must repeat one series backwards.

14. WHAT IS THE DIFFERENCE BETWEEN LATITUDE AND LONGITUDE ON A MAP?

Latitude-imaginary lines north and south of the equator while longitude goes east and west; latitude is horizontal to the equator while longitude is perpendicular to it: longitude runs

from the north pole to the south pole and latitude runs east and west; longitude goes east and west from the Greenwich Meridian.

If there is any doubt, have the individual illustrate “which is which” on the circle on the back of the score sheet.

15. WHY SHOULD LEADERS OF POWERFUL NATIONS MEET OFTEN?

To talk to settle differences so there will not be war; to work out agreements so there won't be conflicts; to show some trust; to work together; so there will not be war.

Any sensible response in reference to why leaders of nations should meet.

16. WHAT IS THE PRINCIPAL KIND OF WORK DONE BY AN ARCHITECT?

Makes plans for the construction of buildings and houses; designs churches and buildings; tells the carpenter what kind of a house to build with drawings.

If the individual responds by defining a landscape architect in any way, say: “Yes, that’s a landscape architect, but what does a regular architect do for a living”.

17. WHY DO WE NEED TO VOTE FOR PEOPLE TO RUN THE GOVERNMENT?

To get people who will represent the majority of the people's opinions (feelings); that is what we do in a democracy; so we won't have the same people in office pass the job down to others.

18. WHAT IS AN ECLIPSE?

The Earth gets between the sun and the moon and its shadow covers the moon; the Earth gets between the sun and the moon and blocks out the light to the moon; the moon gets between the earth and the sun and we cannot see (the moon's shadow blocks out) the sun.

19. EIGHT BOYS EARNED #96 AND THEY DIVIDED IT EQUALLY AMONG THEMSELVES. HOW MUCH DID EACH BOY RECEIVE?

Twelve naira.

BEGIN AGE FOURTEEN

20. WHAT DOES DETAIN MEAN? WHAT WOULD IT MEAN IF SOMEONE WERE TO BE DETAINED?

To be kept back (delayed, restrained, withheld); to check; to hold back or keep in custody, etc.

Must pass both.

21. IF I TEAR A PIECE OF PAPER IN HALF, I WILL HAVE TWO (2) PIECES, IF I TEAR BOTH OF THESE IN HALF AGAIN, I WILL HAVE FOUR PIECES, IF I TEAR EACH OF THESE AGAIN I WILL HAVE EIGHT PIECES, HOW MANY WILL I HAVE IF I TEAR EACH PIECE AGAIN?

Wait for answer: Then say: AND IF I TEAR EACH OF THESE AGAIN, HOW MANY WILL I HAVE?

Sixteen (16) and thirty-two pieces.

22. WHAT IS A GEYSER?

A natural hot water fountain; spouts (hot) water regularly.

Score zero: Yellowstone Park has them.

23. SAY THIS SENTENCE EXACTLY AS I SAY IT. LISTEN CAREFULLY AS I CANNOT REPEAT IT. SAY: "AS THE HURRICANE APPROACHED, THE SAILORS SECURED THE SHRIMP BOATS TO THE ROCK".

Must repeat sentence exactly and in the correct order.

24. FINISH WHAT I SAY: A DOG IS A CANINE, A CAT IS A _____ Feline

25. FINISH WHAT I SAY: THE SUN GIVES OFF LIGHT, BUT THE LIGHT FROM THE MOON IS _____

Reflected.

26. WHAT DOES THIS SAYING MEAN? "THE EARLY BIRD CATCHES THE WORM?"

Be there first and you will get it; be first to get things; be first to get credit

27. WHAT DOES MUTILATE MEAN?

Injure; make imperfect by cutting off a part; demolish; hurt; deface.

Must pass one set

28. SAY THESE NUMBERS JUST THE WAY I SAY THEM WHEN I FINISH:

1429356. If failure, say: Say these numbers when I finish: 9742658

Say the numbers slowly, about one second apart, do not group the numbers in any way.

Must repeat one set of numbers correctly

29. MOTHER BOUGHT EIGHT CANS OF BEANS FOR #2.00 HOW MUCH DID SHE PAY FOR EACH DAY?

Twenty-five kobo

30. WHAT DOES ABUNDANT MEANS? FOR EXAMPLE, IF YOU HEARD THAT POTATOES WERE ABUNDANT, WHAT WOULD IT MEAN?

Plenty of them; plentiful, lots and lots of things; not scarce, etc

Must pass both

32a. IN WHAT WAY ARE AN OCTAVE AND OCTOPUS THE SAME OR ALIKE?

Both pertain to eight

b. HOW ARE OCTAVE AND OCTOPUS DIFFERENT?

Octave pertains to music and octopus is an animal (with eight arms or tentacles)

33. WHO WAS LONGFELLOW? WHAT DID HE DO TO BECOME FAMOUS?

Author; writer; wrote poems; wrote novels.

34. WHICH FRACTION OF A MILLION NAIRA WOULD YOU PREFER TO INHERIT:

$\frac{3}{5}$, $\frac{2}{3}$, $\frac{5}{8}$ Two-thirds

35. LISTEN CAREFULLY TO THE FOLLOWING STORY, I CAN SAY THIS ONLY ONCE. A NIGHT WATCHMAN JUST CAME OFF WORK AND MET HIS BOSS. THE WATCHMAN SAID, "I JUST HAS A DREAM THAT O WON A \$10,000,000 (TEN MILLION DOLLAR) PRIZE, I HOPE IT COMES TRUE. "HIS BOSS BECAME ANGER AND IMMEDIATELY FIRED HIM, WHY?

The watchman was sleeping on the job.

36. A girl rented a fishing pole for 50 kobo an hour for $5\frac{1}{4}$ hour. How much money did she spend?

#2.75

37. SAY THIS SENTENCE EXACTLY AS I SAY IT, LISTEN CAREFULLY AS I CANNOT REPEAT IT.

"THE PRESIDENT AND VICE PRESIDENT MADE A SPECIAL TRIP TO THE EMBASSY TO MEET THE AMBASSADOR".

Must repeat sentence exactly and in the correct order.

38. WHAT IS THE PURPOSE OF SOCIAL SECURITY?

To help people in their old age; to give people an income in their old age; to help dependents (those who become disabled); to help those who cannot work and earn an income

39. A boy who had #10.00 took his girl to the movies, if the tickets cost #1.50 each and they both had 60 kobo soft drinks after the show. How much money did he have left?

#5.80

Must pass one set

40. SAY THESE NUMBERS JUST THE WAY I SAY THEM WHEN I FINISH: 51748294. If failure say: Say these numbers when I finish: 24963817.

Say the numbers slowly, about one second apart, do not group the numbers in any way.

Must repeat one set of numbers correctly.

Begin age sixteen and above

41. WHAT IS A DEFICIT?

Deficiency in amount; to be “short”, an amount lacking; a negative difference between income and outgo (spending).

If the examinee responds: The government has it, request further explanation.

Must pass both

- 42a. HOW ARE CARNIVORE AND HERBIVORE ALIKE?

They are both animals

- b. How are they different?

One eats meat and the other eats plants

Must pass both

- 43A. WHAT PLANET IS CLOSEST TO THE SUN?

Mercury

- b. WHAT PLANET IS FARTHEST FROM THE SUN?

Pluto (Also accept Neptune)

44. WHY DO JUDGES HAVE THE AUTHORITY TO GIVE DIFFERENT SENTENCES FOR THE SAME OR SIMILAR CRIMES?

There may be different circumstances under which the crime was committed; it may be a first (repeated) offender; it may be a very young offender; the person may have a family to support and could not if in jail.

Score zero: Someone bribed the judge, the judge showed favouritism.

45. A GIRL TOOK 80 NAIRA TO SCHOOL FOR LUNCH, IF SHE GAVE 20 NAIRA TO A FRIEND, WHAT FRACTIONS OF HER MONEY DID SHE HAVE LEFT?

$\frac{3}{4}$ or 75 or 75%

Must pass both

46. HOW ARE CONCAVE AND CONVEX ALIKE AND HOW ARE THEY DIFFERENCE?

Alike: They are both curves

Difference: They are curved differently; concave is curved inward and convex is curved outward.

47. WHAT DOES MALICIOUS MEAN? (Pronounced mǝ-līsh'ǝs)

Wicked or mischievous intentions or motives; showing malice or ill will; something evil.

48. SAY THIS SENTENCE EXACTLY AS I SAY IT, LISTEN CAREFULLY AS I CANNOT REPEAT IT. SAY: "THE OPERA SINGER MADE A LASTING IMPRESSION ON THE AUDIENCE WITH HER INTERPRETATION OF THE SONG".

Must repeat sentence exactly and in the correct order.

49. WHY DOES THE GOVERNMENT HAVE THE POWER TO BUY YOUR LAND FOR A ROAD, EVEN IF YOU DO NOT WANT TO SELL IT?

The government has the right to do the most good for its citizens. The government has the right to reclaim property keeping in mind what is in the best interest of its citizens.

Any sensible response referring to the governments right to buy land.

50. WHAT DOES THIS SAYING MEAN? "BUY OAKS FROM LITTLE ACORNS GROW".

Big (important) things may have small (unimportant) beginnings.

51. WHAT DOES MUTIN MEAN?

A rebellion on a ship (army, navy, etc); like on a boat when the sailors take over and refuse to obey the captain; when any group under discipline refuses to take orders.

52. WHY DO NATIONS NEED TO USE ESPIONAGE?

To gather information which could not be gathered by any other mean to check on the internal affairs of other nations, to get information.

Any sensible response referring to why nations need to use spies and espionage.

Must pass both

53a. WHAT IS THE HIGHEST MOUNTAIN IN THE WORLD?

Mt. Everest

B. WHERE IS IT LOCATED?

China, Tibet, Nepal and/or the Humalaya Mountains.

Score zero: India

54. A GIRL WENT TO THE RINK EARLY EACH SATURDAY SO SHE COULD RENT SKATES CHEAPER, IF SHE RENTED SKATES FOR 50KOBO AN HOUR AND SKATED 1¹/₂HOURS FOR SIX SATURDAYS. HOW MUCH MONEY DID SHE SPEND?

#4.50

55. WHAT DOES FACSIMILE MEAN? (Pronounced fâk-sîm'ô-lê)

An exact copy; duplicate; reproduction; the same; letter sent by telephone (lines) to another fax (facsimile) machine.

Must pass both

56a. HOW ARE A PROVINCE AND A STATE ALIKE?

Both are (geo) political divisions within a nation.

b. IN WHAT WAY ARE THEY DIFFERENT?

Some nations have states and some have provinces. Canada has provinces and the United States (US) has states.

Any sensible response referring to how a state and a province are alike and different

Must pass one set.

57. SAY THESE NUMBERS BACKWARDS, FOR EXAMPLE, IF I SAY: 123, YOU WOULD SAY: 321. NOW SAY THESE NUMBERS BACKWARDS WHEN I FINISH SAYING THEM: 832947. If failure, say: Say these numbers: 527416.

Must repeat one series backwards.

58. WHAT DOES THIS SAYING MEAN? "A BIRD IN THE HAND IS WORTH TWO IN THE BUSH".

A sure thing is better than something (very good) which is not so sure.

59. WHAT IS A PANORAMA?

An unobstructed or complete view of a region in every direction; a comprehensive presentation of a subject; a complete picture exhibited a part at a time, by being unrolled before the spectator.

Must pass both

- 60a. WHAT IS THE AREA OR HOW MANY SQUARE FEET (METERS) ARE THERE IN A ROOM WHICH IS 9 FEET (METERS) WIDE AND 12 FEET (METERS) LONG?

108 square feet or 108 square meters

- b. WHAT IS THE PERIMETER OF THE ROOM?

42 feet or 42 meters

61. SAY THIS SENTENCE EXACTLY AS I SAY IT. LISTEN CAREFULLY AS A CANNOT REPEAT IT. SAY: “IT IS NECESSARY TO EMPLOY ALL PERSONNEL WITHOUT REGARD TO THEIR RELIGIOUS OR ETHNIC BACKGROUND?”

Must repeat sentence exactly, and in the correct order.

Must pass both

62. WHAT AND WHERE IS THE GANGES?

A (sacred) river in India

Must pass both

63. TOW PEOPLE PAINTED A BARN FOR #1,000 IF ONE PERSON WORKED 8 DAYS AND THE OTHER WORKED 12 DAYS, HOW MUCH MONEY SHOULD EACH RECEIVE?

The one who worked 12 days would receive #600 and the one who worked eight days would receive #400.

64. WHAT DOES PROGNOSTICATE MEAN? (Pronounced präg-‘näs-tô-kāt)

To foretell from signs or symptoms. To prophesy. To predict.

Must pass both

65. HOW ARE THE NUMBERS 25 AND 36 ALIKE AND HOW ARE THEY DIFFERENT?

Alike: Both are perfect square; have perfect roots; can take the square root and not have any left over; both are numbers times themselves

Different: One is odd and one is even; the square roots are odd and even.

If the examinee responds: They are composite numbers; both are two digit numbers, ask for another answer.

66. FINISH WHAT I SAY: A MAPLE TREE IS DECIDUOUS: A PINE TREE IS _____
Evergreen or coniferous.
67. AT A PUBLIC MEETING CONSISTING OF 300 PEOPLE, THE MEN OUTNUMBERED THE WOMEN 5 TO 1. HOW MANY MEN WERE PRESENT?
250 Men
Must pass both
68. A BOTTLE AND CORK COST #1.10. IF THE BOTTLE COST A NAIRA MORE THAN THE CORKS. HOW MUCH DID EACH COST?
The bottle costs #1.05 and the cork \$.05.
Must pass one set.
69. SAY THESE NUMBERS BACKWARDS, FOR EXAMPLE, IF I SAY: 123, YOU WOULD SAY: 321. NOW SAY THESE NUMBERS BACKWARDS WHEN I FINISH SAYING THEM: 9357184. If failure, say: Say these numbers backwards: 3719465.
Say the numbers slowly, about one second apart, do not group the numbers in any way.
Must repeat one series backwards.
70. WHO WROTE THE ADVENTURES OF SHERLOCK HOLMES?
(Arthur Conan) Doyle
Must pass one set.
71. SAY THESE NUMBERS JUST THE WAY I SAY THEM WHEN I FINISH: 578421369.
If failures, say: Say these numbers when I finish: 685142943.
Say the numbers slowly, about one second apart; do not group the numbers in any way.
Must repeat one set of numbers correctly.
72. WHAT DOES PREVARICATE MEAN? (Pronounced pri-‘var-ô-kât)
To lie, to deviate from the truth, to equivocate, to be false.
73. WHAT IS THE CIRCUMSTANCE OF THE EARTH?
Accept the correct answer in miles or kilometers. Meridian is 24,860 miles and equatorial is 24,900 miles. About 25,000 miles or about 40,000 kilometers. Any answer between 23,000 and 27,000 miles or 37,000 and 43,000 kilometers.

74. WHY MIGHT AN ANTHROPOPHAGITE RELISH A VISIT FROM AN UNSUSPECTING ANTHROPOLOGIST? (Pronounced an(t)-thrō-‘pā` f-ōgīy) an(t)-thrō-‘pāl-ō-‘pāl-ō-jōst)

An anthropophagite is a cannibal and so he would enjoy eating an anthropologist.

Must pass both

75. WHAT IS THE DIFFERENCE BETWEEN VORTEX AND VERTEX?

A vortex is a whirlpool while a vertex is the top or apex. A vortex is like a liquid having a whirling or circular motion and tending to form a cavity or vacuum in the center of the circle.

A vertex is the top portion, the zenith or summit, the point opposite to and farthest from the base. The point where the two sides of an angle meet.

76. A MAN LEFT #40,000 IN HIS WILL AND SPECIFIED THAT THE MONEY BE DIVIDED SO THAT THE RATIO OF THE WIFE’S SHARE TO THE DAUGHTER’S SHARE SHOULD BE 5 OR 3. HOW MUCH MONEY WOULD THE DAUGHTER RECEIVE?

#15,000

77. A GIRL BOUGHT A PAIR OF RABBITS, AT THE END OF THE FIRST YEAR SHE HAD 4 AT THE END OF THE SECOND YEAR SHE HAD 12 AT THE END OF THE THIRD YEAR SHE HAD 48 AT THIS RATE, HOW MANY DID SHE HAVE AT THE END OF THE NEXT OR FOURTH YEAR?

The first year the rabbits multiplied by 2, the second year by 3, the third year by 4, the fourth year by $5.5 \times 48 = 240$.

78. WHAT DOES PRESTIDIGITATION MEAN? (Pronounced pres-tedij-e-ta-shen)

Sleight of hand. Legerdemain. Tricks done by a magician with cards.

79. A CHICKEN FARMER HAD 1,000 EGGS. IF 10% OF THE EGGS ARE CRACKED AND 5% OF THE REMAINDER WERE FOUND TO BE DEFECTIVE AFTER CANDLING, HOW MANY EGGS COULD BE SOLD ON THE MARKET?

(10% of 1,000 = 100, 1,000-100 = 900. 5% of 900-45 = 855)

80. IN ANCIENT TIMES, WHO WAS THE GOD OF DREAMS?

Morpheus

81. SAY THIS EXACTLY AS I SAY IT. LISTEN CAREFULLY AS I CANNOT REPEAT IT. “THE DOCTOR FOUND THE BOY WAS SUFFERING FROM A SEVERE PSYCHOSOMATIC DISORDER AND THEREFORE SENT HIM TO A PSYCHIATRIST FOR THERAPY”.

Must repeat sentence exactly and in the correct order.

Must pass 3 out of 4.

82. WHAT WOULD THE FOLLOWING PEOPLE CARRY IN ORDER TO IDENTIFY THEMSELVES?

- a. A PHILATELIST (Pronounced fɔ-‘lat-lɔst)

A stamp album or some stamps.

- b. A LEXICOGRAPHER (Pronounced lek-sɔ-‘kæg-rɔ-fɔr)

A dictionary

- c. AN ORNITHOLOGIST (Pronounced or-nɔ-‘thäl-ɔ-jɔst)

A bird or something to do with birds.

- d. AN ICHTHYOLOGIST (Pronounced ik-thē-‘äd-jɔst)

A fish or something to do with fish.

83. WHAT IS THE CUBE ROOT OF 216? OR IN OTHER WORDS, WHAT NUMBER WHEN MULTIPLIED BY ITSELF AND THEN MULTIPLIED BY ITSELF AGAIN, EQUALS 216?

Six

Must pass both

84. WHAT IS THE DIFFERENCE BETWEEN A PLUTOCRACY AND A THEOCRACY?

Plutocracy means government by the wealth. Theocracy means government by the priests, ministers as representatives of God.

85. WHAT DOES RATIOCINATION MEAN? (Pronounced rat-ē- ōs-^on-‘ā-shɔn)

Reasoning or the process of exact thinking.

86. SAY THIS SENTENCE EXACTLY AS I SAY IT. LISTEN CAREFULLY AS I CANNOT REPEAT IT. SAY: “THE PROPER AND SAFE DISPOSAL OF HAZARDOUS INDUSTRIAL WASTE PRESENTS A MONUMENTAL TASK IN THE HIGH LEVEL DECISION MAKING”.

Must repeat sentence exactly and in the correct order.

Must pass both

87. WHO WROTE THE FOLLOWING?

a) COMMUNIST MANIFESTO

Karl Marx and Friedrich Engels

b) PILGRIM'S PROGRESS

John Bunyan

c) A TALE OF TWO CITIES

Charles Dickens

d) MUCH ADO ABOUT NOTHING

William Shakespeare

e) ALICE IN WONDERLAND

Lewis Carroll

Must pass 3 out of 4.

88. WHAT DOES EACH OF THE FOLLOWING MEAN?

a. SUB ROSA (Pronounced sɔ̃b-rō-zə)

It strict confidence, privately.

b. SAVOIR FAIRE (Pronounced sav-wär-'fa(ə)r,-'fe(ə)r)

Tact, poise, sophistication.

c. ESPRIT DE CORPS (Pronounced is-prēd-ə-'ko(ə)r)

Comradeship, spirit.

d. BETE NOISE (Pronounced bet-nə-'wär, bāt-)

An aversion, strong dislike

89. SAY THIS SENTENCE EXACTLY AS I SAY IT, LISTEN CAREFULLY AS I CANNOT REPEAT IT, SAY: "MICROCOMPUTERS IN USE TODAY HAVE SIGNIFICANTLY MORE STORAGE CAPACITY THAN THE MAINFRAME COMPUTERS FROM OVER A DECADE AGO"

Must repeat sentence exactly and in the correct order.

Must pass 5 out of 6.

90. WHAT PARTS OF AN ANIMAL'S BODY ARE INDICATED BY THE FOLLOWING?

a. CAUDAL Tail

- b. DORSAL Back
- c. VENTRAL Abdominal
- d. CEPHALIC Head
- e. ORAL Mouth
- f. OCCIPITAL Back portion of head

91. SAY THIS SENTENCE EXACTLY AS I SAY IT, LISTEN CAREFULLY AS I CANNOT REPEAT IT. SAY: THE LATEST ATOMIC REACTOR HAS THE MOST RECENT SAFETY AND ENVIRONMENTAL SAFEGUARDS TO PROJECT THE LOCAL POPULATION FROM ANY POTENTIAL NUCLEAR ACCIDENT".

Must repeat sentence exactly and in the correct order.

92. WHAT DOES UBIQUITOUS MEAN? (Pronounced yü-‘bik-wât-ôs)

Existing or being everywhere at the same time. Omnipresent.

93. DISTINGUISH BETWEEN A PALEONTOLOGIST AND A PHILOLOGIST.

(Pronounced pā-lē-än-‘täl-ô-jôst) (fô-‘läl-ô-jôst also fî-)

A paleontologist is a scientist who studies the life of the past geological periods through analysis of rocks and fossils. A philologist studies all phases of languages and literature.

APPENDIX C

Department of Special Education,
University of Ibadan, Ibadan, Nigeria.

25th of January 2017

The Honorable Commissioner for
Education, Science and Technology,
Ministry of Education, Ibadan.
Oyo state, Nigeria.



Dear Sir,

REQUEST FOR ASSISTANCE

I hereby request for a list of enrolment of students in all the Senior secondary schools in the three senatorial districts in Oyo state.

I am a Research student in the department of special Education, Faculty of Education, University of Ibadan. I am carrying out a research that requires the information on students in the senior secondary schools that span across the senatorial districts in Oyo state.

The study if for academic purposes and all information to be used will be confidential. I hereby attach a letter of introduction from my project supervisor who is the Head of Department of Special Education, University of Ibadan.

Yours Faithfully,

AKINMOSIN K.A (MRS)

08131073126



UNIVERSITY OF IBADAN
IBADAN, NIGERIA
DEPARTMENT OF SPECIAL EDUCATION

ACTING HEAD
Olufemi Aremu Fakolade, B.Ed; M.S.W; M.Ed. Ph.D (Ibadan)
Tel: (+234) 8023504549, (+234) 9082142510
E-mail: fakolade1@yahoo.com, oa.fakolade@mail.ui.edu.ng

10 January, 2017.

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-----,
-----,

Dear Sir/Ma,

TO WHOM IT MAY CONCERN
AKINMOSIN, Kemi Adejoke Matric No. SI 67093

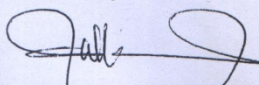
The above named is a Ph.D. Student with Matric. No.: SI 67093 in the Department of Special Education, (Gifted & Talented Unit), University of Ibadan.

She is carrying out a research on **“Motivational Variables, Academic Self-concept and Learning Styles as Predictors of Academic Achievement among Underachieving High-ability Students in Oyo State, Nigeria.**

The study is for academic purposes and all information will be for the purpose of her area of research.

Kindly assist her.

Thank you.


Dr. O. A. Fakolade



VISION:
To make the Department a beacon in Africa
and beyond in the field of Special Needs Education

PROFESSORS IN THE DEPARTMENT
I. A. Nwazuoike, Moji Oyebola,
J. A. Ademokoya, M. S. Eniola



MINISTRY OF EDUCATION

SECRETARIAT, IBADAN. OYO STATE

PR & S DEPARTMENT

Your Ref. No
All communications should be addressed
to the Hon. Commissioner quoting:

Our Ref. No TBU815^{T1}/249

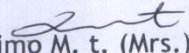
2nd. February, 2017

Akinmosin Kemi Adejoke,
Department of Special Educational,
University of Ibadan.

RE: REQUEST FOR INFORMATION

I am directed to acknowledge the receipt of your letter dated 25th January, 2017 in respect of the above subject and convey to you that the Honourable Commissioner has given approval for the release of the data you requested for.

2. A copy of the data is hereby attached.
3. You are kindly requested to submit a copy of the research work after completion to the Ministry of Education, Science and Technology for information and record purpose.
4. Thank you.


Jimo M. t. (Mrs.)
for: Honourable Commissioner

**MINISTRY OF EDUCATION, SCIENCE & TECHNOLOGY
OYO STATE OF NIGERIA**

STATE SUMMARY OF NUMBER OF STUDENTS ENROLMENT IN PUBLIC SENIOR SECONDARY SCHOOL BY SEX CLASS AND LOCAL GOVERNMENT 2015/2016

S/N	LOCAL GOVERNMENT	SSS 1			SSS 2			SSS 3			SSS TOTAL		
		MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
1	AFIJO	531	557	1088	467	482	949	416	402	818	1414	1441	2855
2	AKINYELE	1715	1605	3320	1603	1463	3066	1349	1281	2630	4667	4349	9016
3	ATIBA	860	889	1749	833	912	1745	705	661	1366	2398	2462	4860
4	ATISBO	339	311	650	324	327	651	344	291	635	1007	929	1936
5	EGBEDA	1942	2019	3961	1532	1634	3166	1275	1307	2582	4749	4960	9709
6	IBADAN NORTH	3075	2897	5972	2783	2800	5583	2097	2061	4158	7955	7758	15713
7	IBADAN NORTH EAST	2071	1918	3989	1773	1471	3244	1112	1096	2208	4956	4485	9441
8	IBADAN NORTH WEST	936	901	1837	631	738	1369	572	682	1254	2139	2321	4460
9	IBADAN SOUTH EAST	3085	3375	6460	3055	3362	6417	2898	3032	5930	9038	9769	18807
10	IBADAN SOUTH WEST	2881	2874	5755	2653	2617	5270	2072	2054	4126	7606	7545	15151
11	IBARAPA CENTRAL	500	579	1079	423	498	921	348	403	751	1271	1480	2751
12	IBARAPA EAST	483	433	916	444	409	853	334	309	643	1261	1151	2412
13	IBARAPA NORTH	363	320	683	322	302	624	240	291	531	925	913	1838
14	IDO	1123	1004	2127	886	886	1772	580	632	1212	2589	2522	5111
15	IREPO	289	272	561	267	213	480	209	212	421	765	697	1462
16	ISEYIN	1265	1331	2596	1216	1238	2454	1101	1018	2119	3582	3587	7169
17	ITESIJAJU	268	251	519	294	265	559	288	250	538	850	766	1616
18	IWAJOWA	234	225	459	251	264	515	313	323	636	798	812	1610
19	KAJOLA	739	802	1541	727	715	1442	757	785	1542	2273	2302	4575
20	LAGELU	1478	1721	3199	1314	1576	2890	822	1071	1893	3614	4368	7982
21	OGBOMOSO NORTH	1240	1166	2406	1010	941	1951	706	757	1463	2956	2864	5820
22	OGBOMOSO SOUTH	901	962	1863	840	786	1626	701	709	1410	2442	2457	4899
23	OGO OLUWA	385	405	790	370	351	721	304	297	601	1059	1053	2112
24	OLORUNSOGO	265	258	523	199	245	444	212	172	384	676	675	1351
25	OLUYOLE	1829	1946	3775	1722	1662	3384	1002	1071	2073	4553	4679	9232
26	ONA-ARA	2188	2348	4536	1913	2120	4033	1204	1317	2521	5305	5785	11090
27	OORELOPE	323	299	622	293	258	551	210	243	453	826	800	1626
28	ORIIRE	401	318	719	426	303	727	388	292	680	1215	911	2126
29	OYO EAST	882	961	1843	802	892	1694	715	726	1441	2399	2579	4978
30	OYO WEST	476	586	1062	422	394	816	378	350	728	1276	1330	2606
31	SAKI EAST	243	242	485	220	217	437	275	232	507	738	691	1429
32	SAKI WEST	1164	1198	2362	1098	1083	2181	820	796	1616	3082	3077	6159
33	SURULERE	562	482	1044	526	469	995	456	366	822	1544	1317	2861
	TOTAL	35036	35455	70491	31639	31891	63530	25203	25489	50692	91878	92835	184713

OYO SOUTH SENETORIAL DISTRICT TOTAL SS ENROLMENT

SERIAL NO	LOCAL GOVERNMENT	SS ENROLMENT
1.	Ibadan North	15,713
2.	Ibadan North-East	9,441
3.	Ibadan North-West	4,460
4.	Ibadan South-East	18,807
5.	Ibadan South-West	15,151
6.	Ibarapa Central	2,751
7.	Ibarapa North	1838
8.	Ibarapa East	2412
9.	Ido	5111
	Total	75,684

OYO CENTRAL SENETORIAL DISTRICT TOTAL SS ENROLMENT

SERIAL NO	LOCAL GOVERNMENT	SS ENROLMENT
1.	Afijio	2855
2.	Akinyele	9016
3.	Egbeda	9709
4.	Ogo Oluwa	2112
5.	Surulere	2861
6.	Lagelu	7982
7.	Oluyole	9232
8.	Ona-Ara	11,090
9.	Oyo-East	4978
10.	Oyo-West	2606
11.	Ajiba	4860
	Total	67,301

OYO NORTH SENETORIAL DISTRICT SS ENROLMENT

SERIAL NO	LOCAL GOVERNMENT	SS ENROLMENT
1.	Saki West	6159
2.	Saki East	1429
3.	Atisbo	1936
4.	Irepo	1462
5.	Olorunsogo	1351
6.	Kajola	4525
7.	Iwajowa	1610
8.	Ogbomoso North	5820
9.	Ogbomoso South	4899
10.	Iseyin	7169
11.	Oorelope	1626
12.	Oriire	2126
13.	Itesiwaju	1616
	Total	41,728

Grand Total = 75,684 + 67,301 + 41,728 = 184,713

APPENDIX D

PICTURES FROM THE FIELD

The Researcher on the field with students filling the questionnaires.



The Researcher on the field with students filling the questionnaires.



The Researcher on the field with the students filling the questionnaires.



The Researcher took group photographs with the students (the respondents).

