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The influence of parent-child relationship on academic performance of Basic Science Students in Biase Local Government Area of Cross River State

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Abstract

This research was aimed at investigating the influence of Parent-child relationship on academic performance of Basic Science students in Biase Local Government Area of Cross River State. Three research questions and three hypotheses were formulated to guide the study. The study adopted the export facto research design. The population of the study was made up of all JSS 11 basic science Students of 2022/2023 academic session in Biase L.G.A, totally about 1500 Students. All the schools in the stratum were used since there were few public schools. Simple random sampling technique was used to select 230 JSS11 Students from the public schools in the area of study. The instruments for data collection were Achievement test tagged Basic Science Achievement Test (BSAT) and a Questionnaire tagged Parent-Child Relationship Questionnaire (PCRQ). The achievement test contained 25 questions drawn from the topics: Nature of Matter and Motion from the Basic Science curriculum. Face and content validity were used to validate the instruments. The achievement test and questionnaire were utilized as the main sources of data collection. The questionnaire consisted of 15 questions. Seven of which appraised the demographic information of the students while 15 questions (5 for each hypothesis) measured the variables of the study, while the reliability was determined using the test-retest method. The responses were correlated using Pearson Product Moment Correlation (PPMC). The coefficient obtained was 0.67 for cordial relationship between children and parents, 0.74 for meeting basic needs of children by parents and 0.69 for monitoring learners' progress. Acquired data was analysed using descriptive statistics consisting of frequency tables and percentages for the demographic information while the variables were correlated using independent t-test. The findings of the study revealed that basic science students who have cordial relationship with their parents have positive significant in their academic performance than their counterparts who do not have cordial relationship with their parents. Significant difference was found in the academic performance of basic science students whose basic needs were satisfied by their parents and those whose needs were not satisfied by their parents in favour of those whose needs were supplied. There is significant difference in the academic performance of basic science students whose academic progresses were monitored by their parents and those whose academic progresses were not monitored in schools in Biase Local Government Area of Cross River State. Based on the findings of the study, it was recommended that parents should strengthen their mutual relationships with their children to provide the home environment and the psychological disposition needed to enhance academic performances in schools.

Keywords: Parent; Child relationship; Academic Achievement; Basic science

1. Introduction

Over time, teaching of Basic Science at the primary and junior level of school have experience a lot of transformation in the curriculum. (Oluwayemi, 2014), defined Basic Science as the knowledge obtained by observation and testing of facts, he said that Basic Science is the knowledge about the structure and behaviour of the natural and physical world based

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on facts that can be proved such as an experiment. He also defined Basic Science as the systematic process of making enquiry about the living and non-living things in our environment.

In order words, Basic Science is defined as an approach to the teaching of science in which concepts and principle are presented so as to express the fundamental unity of scientific thoughts. Children in this study, reported having access to a variety of science -related tools such as: Camera, measuring cups and a calculator. However, many children reported a lack of perceived access to tools such as: thermometer, scale, science kits and so on.

In addition, children need to have experiences with the tools so they can build the knowledge and skills to use the tools as well. If children do not have prior experiences with these types of tools, they run the risk of being disadvantaged by having to learn how to use the tool or lacking the knowledge of what tools are appropriate while simultaneously learning new concepts in Basic Science. Without the ability to develop Basic Science processes skills by using these tools, they may lag behind their classmates in developing the scientific practice skills needed to conduct science inquiry in the classroom (Claussen & Osborne, 2013).

The relationship between the child and the parent(s) is very fundamental in all aspects of the child's development. In addition to the direct instructions' children get from parents to guide their conducts, parent-child relationship provides the enabling environment for the healthy development of the child. Linwood (2006:1) opines that "of the many different relationships people form over the course of their life spans, the relationship between parent and child is among the most important". According to the author, the manner in which parents respond to child's behaviour has an effect on the child's self-esteem and future interaction with others. This relevance of parent-child relationship is also collaborated by Birditt (2009:4) who observes that "the parent-child relationship is one of the longest lasting social ties human beings establish. The tie is often highly positive and supportive but it also commonly includes feelings of irritation, tension and ambivalence".

The relationship may produce positive and supportive effects when the parent and child maintain "healthy relationship. However, as children grow, they begin to assert their need for autonomy or independence by sometimes challenging their parents' decisions and authority and if this is not properly managed it can put a strain on the parent-child relationship thereby leading to a negative effect on the development of the child.

The kind of influence parents may exert on the development, be it academic, emotional or psychosocial can be linked to the dimensions of parent-child relationship. Some parents are responsive to their children's needs while some are care free towards their children. Some are more demanding than other; some others are tolerable. Parents who are sensitive to the needs of children will provide the necessary basic needs, demonstrate interest in their work and are ready to give assistance where necessary. On the other hand, parent who are insensitive are sometimes very reluctant, much demanding and may ignore the needs of their children. (Linwood, 2004) asserts that dimensions of parent-child relationship are connected with the child's psychological development, specifically, how responsive, and how demanding they are. Responsive parents according to the author are warm and accepting toward their children, enjoying them and trying to see things from the child's perspective. In contrast, non-responsive parents are aloof, rejecting and critical. They show little pleasure in their children and are often insensitive to their needs.

The assertions by these authors have great implications for the educational development of the child. The family is considered as the foundation of child's development. The success or failure of the child in life may be affected by the role the family plays. The school will do little to transform the child if the enabling environment is not provided by the family especially as the child returns to the home after school each day to continue his life. The parents are expected as a duty to provide the child's basic needs including the uniforms, books and other resources. Parents should as a matter of necessity develop interest in the progress of their children by monitoring their academic activities. In addition to these, the care, the attachment, the sense of belonging the child expected, needs to be provided as these have been found to support the development of esteem which is essential in progress in academic pursuit. This study therefore, attempts to examine the influence of parent-child relationship on academic performance of Basic Science Students in Biase Local Government Area of Cross River State.

1.1. Theoretical framework

To provide a base for this study, certain related theories have been identified and discussed. Their implications to the study were drawn. The two basic theories adopted are:

Attachment theory by John Bowlby in 1958
Maslow's hierarchical need theory by Abraham Maslow in 1943

1.2. Attachment theory

This theory was first developed by John Bowlby in 1958. The attachment theory is concerned with the lifelong developmental system that emerges from the child-parent bond in which people use increasingly complex physical, cognitive, and communicative strategies to form strong emotional bonds that will protect them from threat (Newman and Newman, 2006). In his theory, Bowlby saw children as competent, curious and fully engaged with environment which he called secure based behaviour. Based on this premise, he postulated that attachment to caregivers is most important as a barometer that enables the child to organize and regulate secure-base behaviour, expectations and emotions. Bowlby observed that by having available, attentive and supportive interactions with primary caregiver, the child is able to manage stress, exploration and risk-taking activities.

The implication of this is that a caregiver or parent who is loving, protective, and available represents a secure base, from which the child feels safe to engage and actively manage and learn from his environment. A loving parent is concerned about the success of the child end will do all possible things to meet the needs of the child as well as monitor his progress not only in education but in other aspect of the child's live endeavours.

1.3. Theory of hierarchy of needs

This theory was propounded by Abraham Maslow in 1943. The basic principle of this theory is that human behaviour is directed by need drive. The satisfaction of one appropriate need propels to another level of need. Abraham Maslow postulated that human needs exist in hierarchy and it is only when a lower need is met or satisfied that the individual will be motivated towards another higher needs. The basic categories of needs as identified by Maslow include:

- The basic needs or physiological needs: This includes the drive to satisfy hunger, thirst and so on.
- Safety needs: Personal, financial, health and wellbeing.
- The psychological needs: The psychological needs consist of the need for belonging, love, and achievement and so on.

The basic needs or physiological needs are the physical requirements for human survival. These include hunger for food, thirst for water and so on. When the physical needs are relatively satisfied, the safety needs take precedence and dominate behaviour. The fulfilment of the safety need gives rise to the psychological needs - love and belonging. The need for friendship, intimacy and family life. It is characterized by the needs to be accepted in social groups (club, among co-workers, family, organization and so on.). This is followed by the need for esteem. This is the need for self-esteem and self- respect and being valued by others. The highest level of need is the self-actualization. This is full realization of one's potential, the desire to accomplish what one can.

The implications of this theory to this study is that the success of a child in academic activities will require the strong relationship of the parents to provide the child with basic needs like food, sense of belonging, love and intimacy. Also, the child needs books, uniform and other educational facilities. If all these needs are met, it may have positive implication for the child's success and the reverse may be the case if they are not provided.

Another implication is that as a matter of interest in the child's success, the parents as caregivers need to demonstrate interest in the child's progress to build his conducts and academic progress. This is reflected in the demands for both physiological and esteem needs. Parents have essential roles to meet this esteem needs to build the child's interest in realizing his potentials one of which is academic potential.

2. Literature Review

2.1. Parent-child relationship and academic performance in Basic Science

The family is important for the child's development and progress in life. Family relationship is characterized by both love and tensions, each exerting it impacts and associated consequences. Examining this, (Isangedighi, 2007) observed that from conception, through birth, infancy, childhood, adolescence, adulthood to old age and death, the family is a key element in every individual. In terms of the impact of the nature of relationship between parents and basic science students, (Isangedighi, 2007) again noted that there are families where affection flourishes, individual loyalty assured and members are treated justly as individuals of worth. Where these exist in blossoming manner, then it becomes apparent that the growing child is in the right place and will perform well in academics

(Birditt, 2009) at Purdue and Pennsylvania State Universities analysed data on 474 parents and adult children who were at least 22 years old. African Americans made up one-third of the sample and the rest were European Americans

(Birditt, 2009). According to (Birditt, 2009), tensions may be more upsetting to parents than to children because parents have more invested interest in the relationship with their children. Parents are also concerned with launching their children into successful adulthood.

In the study Birditt reported that both mothers and fathers reported more tension in their relationships with daughters than with sons. Daughters generally have closer relationships with parents that involve more contact which may provide more opportunities for tensions in the parent-daughter tie. Also, both adult sons and adult daughters reported more tension with their mothers than with their fathers, particularly about personality differences and unsolicited advice.

(Harris, 2006) suggested that the complex web of social relationships with basic science students experience with peers, adults in the school, and family members exerts a much greater influence on their behaviour than researchers had previously assumed. This process starts with students' core relationships with parents or primary caregivers in their lives which form a personality that is either secured and attached or insecure and unattached. Securely attached children typically behave better in school (Blair in Eric, 2009).

(Eric, 2009) opined that strong, secure relationships help stabilize children's behaviours and provide the core guidance needed to build lifelong social skills. Children who grew up with such relationships learn healthy, appropriate emotional responses to everyday situations. But children raised in poor households often fail to learn these responses, to the detriment of their school performance. For example, basic science students with emotional deregulation may get so easily frustrated that they give up on a task when success was just moment away. And social dysfunction may inhibit students' ability to work well in cooperative groups, quite possibly leading to their exclusion by group members who believed are not doing their part or pulling their share of the load. This exclusion and the accompanying decrease in collaboration and exchange of information exacerbate and risk students' already shaky academic performance and behaviour.

(Adewumi, Olojo, and Falemu, 2012:23) articulated the following ways parents could build better relationship with their children that enhances academic success.

- **Act as teachers**: Parents should create a home environment that promotes learning, reinforces what is being taught at school and develops the life skills. Children need to become responsible adult.
- **As supporters**: Parents should contribute their knowledge and skills to the school, enriching the curriculum, and providing extra services and support to basic science students.
- **As advocates:** Parents should help children negotiate the system and receive fair treatment and work to make the system more responsive to all families.
- **As decision maker:** Parents serve as an advisory council, curriculum committees and management teams, participating in joint problem solving at every level.

Basic science students who lack a measure of connectivity to family, to the community, or to a religious affiliation, demonstrate increased hopelessness over time (Bolland, Lian, & Formichella, in Eric, 2009).

(Onuka and Durowoju, 2008), in a study involving 250 junior secondary school students in Oyo state found that close relationship and open communications are necessary ingredients that can help parents and their children stay connected through all ages of their upbringing. One of the findings in the study indicated that Parent-child relationship significantly determined the cognitive achievement of students in Basic Science as the cordiality between the child and his parents enables the child to manage himself, time and academic well, thereby engendering better and progressively improved academic performance.

2.2. Parents' provision of basic science students' basic needs and academic performance

Children who are in school require many things from their parents to succeed academically. These may include social, emotional and material needs. Many writers and researchers have examined parents' ability or inability to provide their children basic needs from their socio-economic status.

(Isangedighi, 2007) noted that families differ in their ability to handle the needs of their children. In every situation, some families are more able than some. In the Nigerian setting, most families are rendered impotent in meeting the needs of their children due to social and economic uncertainties.

(Eric, 2009) equally observed that once basic science students are in school, the dual factors of socialization and social status contribute significantly to behaviour. The school socialization process typically pressures basic science students to be like their peers or risk social rejection, whereas the quest for high social status drives basic science students to attempt to differentiate themselves in some areas such as sports, personal style, sense of humour, or street skills and so on. The author further notes that socio-economic status forms a huge part of this equation. Children raised in poverty rarely choose to behave differently, but they are faced daily with overwhelming challenges that affluent children never have to confront, and their brains have adapted to suboptimal conditions in ways chat undermine good school performance.

He concluded that children whose basic needs are not met especially those children raised in poverty-stricken environment are most likely to significantly face the following risk factors: emotional and social challenges; acute and chronic stressors; cognitive lags; health and safety issues.

In addition, these factors present an extraordinary challenge to academic and social success. This reality does not mean that success in school or life is impossible. On the contrary, a better understanding of these challenges points to actions educators can take to help their less-advantaged basic science students succeed.

When basic needs are not met some consequences may include diminished ability to concentrate, learn, and behave appropriately, school absence, lateness rates, incidents of illness during class and sometimes rates of undiagnosed and/or untreated health problems or disabilities. Very young children require healthy learning and exploration for optimal brain development. Unfortunately, in impoverished families there tends to be a higher prevalence of such adverse factors as teen motherhood, depression, and inadequate health care, all of which lead to decreased sensitivity toward the infant and, later, poor school performance and behaviour on the child's part.

Going concurrently with language acquisition, reading is one of the most important factors affecting the development of a child's brain. Reading skills are not hardwired into the human brain; every sub skill of reading, including (but not limited to) phonological awareness, fluency, vocabulary, phonics, and comprehension, must be explicitly taught. This teaching requires attention, focus, and motivation from the primary caregiver. Again, the time and expertise to make this happen are unfortunately in short supply among poor families.

Evidence suggests that poverty adversely alters the trajectory of the developing reading brain (Noble, Wolmetz, Ochs, Farah, & McCandliss, 2006). The growing human brain desperately needs coherent, novel, challenging input, or it will scale back its growth trajectory. When a child is neglected, the brain does not grow as much.

Many children raised in poverty enter school a step behind their well-off peers. The cognitive stimulation parents provide in the early childhood years is crucial, and as we have seen, poor children receive less of it than their well-off peers do. These deficits have been linked to underdeveloped cognitive, social, and emotional competence in later childhood and have been shown to be increasingly important influences on vocabulary growth, Intelligent Quotient (IQ), and social skills (Bradley, Corwyn, McAdoo 2001). (Constantino, 2005) examined six communities in the greater Los Angeles, California, area and found that children in high- income communities had access to significantly more books than children in low-income communities did. In fact, she found that in some affluent communities, children had more books in their homes than low socio-economic status children had in all school sources combined. Milne and Plourde (2006) identified six second graders who came from low-income households but demonstrated high achievement and found that these children's parents provided educational materials, implemented and engaged in structured reading and study time, limited television viewing, and emphasized the importance of education.

The researchers concluded that many of the factors of low socio-economic status that negatively affect basic science student's academic success could be overcome by better educating parents about these essential needs.

(Jacobs and Bleeker, 2004) observe that children of parents who promote mathematics and sciences are more likely to study those subjects later on. Children whose parents' positive attitudes toward mathematics and sciences were reflected in the toys they purchased and activities they engaged in with them were more likely to subsequently be involved in those arenas.

(Joseph and Ikechi, 2018) on academic achievement of students in basic science among secondary schools in Rivers State: Synergy of parents' educational background, socioeconomic status and school revealed that parents' socioeconomic status significantly affects students' academic performance in basic science. Thus, children whose parents are socioeconomic statues are balance would look into their children's academic prospects as well as provide the basic needs for successful education.

2.3. Parents' monitoring of basic science students' progress and their academic performance

An essential part of any curriculum is the assessment of learning. Keeping track of basic science students' progress is necessary to ensure that instruction is effective, that special needs are being met, and that each student is moving toward the standards set by the state and the goals developed specifically for him or her. Teachers uses assignments, projects, quizzes, tests, and so on to monitor their students' understanding of concepts and their mastery of skills. Schools administer standardized assessments each year to measure academic performance.

But parents should not leave all the checking to school personnel. Parents need to be involved in making sure that their child is progressing. Since a child who receives special education services has the right to participate in the general curriculum, information about how well the child is doing in school must come from both special education and regular education sources. In addition, parents can gain valuable insight into their son's or daughter's learning by carefully observing him or her at home and in the community (Anderson, Chitwood, Hayden, and Takemoto, 2008).

Parents monitoring is the measured in multiple ways, including activities that parents engage in at home and at school and positive attitudes parents have towards their child's education, school, and teacher

The significance of parent attitudes toward education and basic science students is less well understood, although attitudes are believed to comprise a key dimension of the relationship between parents and basic science students. Parents convey attitudes about education to their children during out-of-school hours and these attitudes are reflected in the child's classroom behaviour and in the teacher's relationship with the child and the parents. According to The (Heritage Foundation, 2013), children with parents who demonstrate interest in what goes in school about them have higher academic achievement. Not only do students score higher on tests but they are more prepared to start school and have a greater likelihood of graduating.

Parent involvement in a child's education is consistently found to be positively associated with a child's academic performance (Topor, Keane, Shelton, and Calkins, 2007). In their study to examine the ability of the child's perceived cognitive competence and the quality of the student-teacher relationship to explain the relation between parent involvement and the child's academic performance

A multiple mediation model indicated that the child's perception of cognitive competence fully mediated the relation between parent involvement and the child's performance on a standardized achievement test. Findings from the study demonstrated that increased parent involvement, defined as the teacher's perception of the positive attitude parents have toward their child's education, teacher, and school, was significantly related to increased academic performance, measured by both a standardized achievement test and teacher ratings of the child's classroom academic performance. Results indicated a statistically significant association between parent involvement and a child's academic performance, over and above the impact of the child's intelligence.

Some writers have identified ways by which parents can monitor their children's educational progress to create positive impact. According to (Anderson, Chitwood, Hayden, and Takemoto, 2008) parents can gather important information by observing their child in settings outside the classroom, such as at home, at the store, in the playground, or at the library. These observations may reveal progress in a child's development, academic skills, social skills, or behaviour. Also, parents should talk to their child about school, as appropriate. They should ask about how things are going, what subjects are most enjoyable, how much time is spent on particular activities, and which assignments are easiest or most difficult.

These types of conversations not only provide parents with useful information; they also help the child develop a critical skill, the ability to monitor his or her own progress. Just as proper monitoring creates positive influence, lack of monitoring also produces negative influence on the child's performance. Parents who are struggling just to stay afloat rend to work extra hours, odd shifts, or multiple jobs and are less able to provide attention and affection and to devote their time, energy, and resources to their children. These deficits have been associated with higher levels of externalizing behaviours and poor academic performance on children's part (Hsuch & Yoshikawa, in Eric, 2009).

The influence of parent involvement on basic science students' academic success has not only been noted among researchers, but also among policy makers who have integrated efforts aimed at increasing parent involvement into broader educational policy initiatives. Specifically, children whose parents are more involved in their education have higher levels of academic performance than children whose parents are involved to a lesser degree. (Topor, Keane, Shelton, and Calkins, 2007).

(Catsambis, 2001) reported that high school students whose parents are highly involved and have high expectations for them are more likely to enroll in an academic program and complete core courses. Compared with peers of similar socio-economic backgrounds, those whose parents were more highly involved and had high educational expectations were more likely to enroll in an academic program and more likely to complete credits in mathematics, sciences, and English languages. (Jeynes, 2003) found that minority students whose parents are highly involved with their education tend to do better in school than peers of less involved parents. Among African- American, Latino, and Asian- American students, greater parental involvement was associated with higher levels of academic achievement including, grades, standardized test scores, teachers' reports, and academic behaviour.

(Rodriguez, 2002) reported that Mexican-American students tend to have higher grades if their parents more closely monitor their extracurricular activities and their families are involved with their school. For first, second, and third generation high-school students of Mexican descent (based on their parents' and their own place of birth), those whose parents are more closely monitored their extracurricular activities and whose families were more involved with their schools tended to have higher grades.

2.4. Summary of literature review

In the course of this review there was a common trend and opinion on the impact of cordial relationship between parents and child exerted on the academic performance of students. Many experts' opinions and research findings revealed that there is positive relationship between Parents-child cordial relationship and the child's academic performance. There is also evidence from literature that parents' involvement in a child's education through provision of basic needs and monitoring of academic progress is consistently found to be positively associated with the child's academic performance. However, most of the reviews are foreign and are not based on empirical studies, so the researchers want to conduct this study in the research area, Cross River State to find out if similar results will be obtained. The study will also be based on empirical evidence produced and results that may be more reliable.

2.5. Statement of the problem

There is an overwhelming concern about the general performance of basic science students in both internal and external examinations in Nigeria. The government, parents, teachers and the public have on pages of newspapers, television and radio programmes express serious worries over the declining academics performance of basic science students at all levels of education.

While government accuses the teachers, the teachers point accusing fingers on the parents and government's inability to play their roles in the educational development of the Nigerian children. There is no doubt that the family has essential role to play in the educational advancement of children. Could the success or failure of basic science students' performance be attributed to the family? Is there any connection between the relationship parents establish with their children and their academic performance? Can students' academic performance be predicted on the basis of parent's monitoring of their children's educational progress? Can the performance of basic science students be attributed to the extent parents provide the basic needs of their children? These are the questions and that this study sought to address.

2.6. Purpose of the study

The general purpose of this study is to investigate the influence of Parent-child relationship on academic performance of Basic Science students in Biase Local Government Area of Cross River State.

Specifically, the study sought to determine if:

- The nature of relationship between Basic Science students and their parents influences their academic performance,
- Basic Science students differ in their academic performance on the basis of their parents' provision of basic needs.
- Basic Science students differ in their academic performance on the basis of their parents' monitory of their academic progress.

2.7. Research questions

The following research questions were posed to guide this study.

- How does the relationship between parents and Basic Science students influence their academic performance?

- How does Basic Science students whose basic needs are satisfied by their parents differ in their academic performance from their counterparts whose needs are not satisfied?
- To what extent do Basic Science students whose academic progress are monitored by their parents differ in their academic performance from their counterparts whose academic progress are not monitored?

2.8. Statement of hypotheses

To guide the researcher in the course of this study, the following null hypotheses were formulated.

- Basic Science students who have cordial relationship with their parents do not differ significantly in their academic performance from their counterparts who do not have cordial relationship with their parents.
- There is no significant difference in the academic performance of Basic Science students whose basic needs are satisfied by their parents and those whose needs are not satisfied by their parents.
- There is no significant difference in the academic performance of Basic Science students whose academic progress are monitored by their parents and those whose academic progresses are not monitored.

2.9. Significance of the study

This study is considered to be important and the findings that emerged from it would be of relevance to parents, teachers, students, school administrators and guidance counsellors. To the parents, the findings shall help them understand how the pattern of relationship between them and their children enhances or impede their children's academic performance. With this, they will develop better relationship with their children. The students also will gain insight as to how their relationship with their parents influences their academics performance and then make necessary adjustment. The teachers and school administrators take the responsibilities of parents when the students are in school. The findings of this study shall help them understand how the relationship between parents and children impart on the training of children. The results may help the school guidance counsellor guide the students appropriately.

3. Methodology

3.1. Research design

The design adopted for this study is the export facto design. According to Kerlinger as cited by (Cohen, Manion and Morrison, 2007) export-facto design is that in which the independent variable(s) have already occurred and in which the researcher starts with observation of a dependent variable. The researcher then studied the independent variable(s) in retrospect for their possible relationship to, and effects on, the dependent variables. The design was considered appropriate because the variables studied such as parent-child cordial relationship, parents' provision of basic science students' basic needs and parents' monitoring of basic science students' progress have already occurred.

3.2. Research Area

The research area is Biase Local Government Area of Cross River State. Biase Local Government Area is one of the 18 Local Government Areas in Cross River State. It is located in the Southern senatorial district of the state. It is bounded in the North by Yakurr and Abi Local Government Area of Cross River State, in the East by Akamkpa Local Government Area and in the South and West by Odukpani Local Government Area, Abia and Ebonyi State respectively.

The people of Biase are hospitable with rich cultural heritage. The Efik language is the main language of Biase people but several variations of the Efik language, such as Ubaghara and Ukwa, are also spoken in Biase. Other languages spoken in Biase are the Agwagune, Efut, Erei, Ubaghara and Umon.

The major language in Biase Local Government Area is the Ukpet language, which is spoken among the Ukpet group of communities like Akparavuni, Umia, Ibogo, Akpet Central, Akpet 1, Ufut, Betem and so on. Majority of the populace are farmers; some are civil servants and some businessmen and women. The Local Government is blessed with many primary and secondary schools.

3.3. Population of the study

The population of this study consisted of all the junior secondary school students in public secondary school in Biase Local Government Area. Currently, there are six public secondary schools with a total population of over 1,500 students in the 2022/2023 academic session JSSII basic science students were considered appropriate for this study because they are the current students in the school.

3.4. Sampling Technique

Two major sampling techniques were employed in this study. There were the stratified and simple random sampling techniques. Stratified sampling method was used to give the different school proportional representation, while simple random sampling technique provided all the members of the population equal opportunity of being sampled.

The schools were already stratified. Since the public schools were not many all the schools were used for the study.

From the schools, a sample frame consisting of JSSII basic science students were collected. Proportional sampling procedure was carried out. This implies that the sample size varies according to the population size of each school. The balloting method of simple random sampling technique was adopted. Serial number as found in their class register was allocated to students in each school. These serial numbers were written on each piece of paper and folded into a container and each respondent then dipped hand and picked a piece of paper at a time. For each paper picked the student whose serial number is represented became a sample. This procedure was carried out in each of the six schools. 20% of the population (JSS11 basic science students) in each school was sampled. From the sampling process, 230 basic science students were sampled. Therefore, the sample size for this study is 230 Junior Secondary School II (JSS11) basic science students.

3.5. Instrumentation

The major instrument used in gathering data for this study was the structured questionnaire and Achievement Test designed by the research tagged "Parent-Child Relationship Questionnaire" (PCRQ) and Basic Science Achievement Test (BSAT). The instruments were arranged into two sections: A and B. Section A was further divided into two sections (A and B). Section A contained demographic information while the section B contained 15 statements modified into four-point Like scale according to the variables studied. The second instrument (section B) was a Basic Science Achievement Test (BSAT) that measured students' academic performance in Basic Science. It contains twenty-five (25) objective questions on relevant topics in Basic Science Curriculum of secondary school.

3.5.1. Validation of instrument

In this study, face validity was established. The designed Universities instrument was given to experts in test and measurement and science education in the of Calabar and University of Cross River who effected corrections by dropping the questions that were too difficult or too simple. The approved instrument was used in gathering data.

3.6. Reliability of the instrument

Reliability of an instrument establishes the consistency of responses to the instrument across time. The test-retest reliability was adopted. 40 basic science students from one of the schools in the neighbouring local government area were given the questionnaire to respond to. This approach was adopted because all the schools in Biase were used, also the public schools in all the local government areas in Cross River state have the same characteristics. After two weeks, the same questionnaire was given to the same students. The responses were correlated using Pearson Product Moment Correlation (PPMC). The coefficient obtained was 0.67 for cordial relationship between children and parents, 0.74 for meeting basic needs of children by parents and 0.69 for monitoring learners' progress.

3.7. Procedure for data collection

The researcher personally visited the sampled schools and consulted with the school heads and form masters for permission to use the basic science students for the study. The instrument was distributed to the sample basic science students with the help of their form masters. 230 questionnaires were administered, 220 were properly filled and returned.

3.8. Data preparation

Data obtained in the study through the research instruments were coded and assigned numerical values to allow for analysis. For positively worded items; Strongly Agree (SA) was assigned 4, Agree (A) 3, Disagree (D) 2, and Strongly Disagree (SD) 1. The reverse scoring was used for negatively worded items. For the second instrument, all correct responses were awarded 1 mark each while incorrect responses were scored 0.

4. Results

The results were presented in tables based on the hypotheses

4.1. Hypothesis one

There is no significant difference between the academic performance of basic science students who have cordial relationship with their parents and their counterparts who do not have cordial relationship with their parents.

To test this hypothesis, t-test statistical analysis was used to test data collected in respect to this hypothesis.

Table 1 Independent t-test statistical analysis of the mean scores of Basic Science students who have cordial relationship with their parents and their academic performance and their counterparts who do not have cordial relationship with their parents

Respondents	N	$\bar{X}$	SD	t-value	Sig.
Cordial	100	64.32	16.727	2.17264*	0.000
Non cordial	100	55.23	13.864		

*Impact is Significant P < 0.05; df = 198; N = 200.

The result presented in Table 1 shows that when the mean for the students who have cordial relationship with their parents (64.32) was compared with the mean of those who do not have cordial relationship with their parents (55.23). The comparison yielded a calculated t-value of 2.172 and Sig. p-value of .000. The calculated t-value (2.172) reveals an impact that is statistically significance at 198 degree of freedom. Furthermore, since the sig. p - value of .000 is less than .05; the null hypothesis is rejected and the alternative is upheld. It is concluded that there is a significant relationship between the academic performance of students who have cordial relationship with their parents and those who do not have cordial relationship with their parents.

4.2. Hypothesis 2

There is no significant difference in the academic performance of basic science students whose basic needs are satisfied by their parents and those whose needs are not satisfied by their parents.

Table 2 Independent t-test analysis of Basic Science students whose basic needs are satisfied by their parents and those whose needs are not satisfied by their parents

Respondents	N	Mean	SD	t-value	Sig
Satisfied	100	64.26	16.82	2.935	0.004
Not satisfied	100	58.08	13.22		

Significant (p.>) at .05; df=198, N=200

The result presented in Table 2 shows that when the mean for the basic science students whose basic needs are satisfied (64.26) was compared with the mean of those whose basic needs are not satisfied (58.08). The comparison yielded a calculated t-value of 2.935 and Sig. p-value of .004. The calculated t-value (2.935) reveals a difference that is statistically significance at 198 degree of freedom. Thus, since sig. p-value of 004 is less than 0.05; the null hypothesis is rejected and the alternate one upheld and concluded that there is significant difference between the basic science students whose basic needs are satisfied by their parents and those whose needs are not satisfied by their parents.

4.3. Hypothesis 3

There is no significant difference in the academic performance of basic science students whose academic progress are monitored by their parents and those whose academic progresses are not monitored.

Table 3 Independent t-test analysis of the mean scores of Basic Science students whose academic progress are monitored by their parents and those whose academic progresses are not monitored

Respondents	N	Mean	Sd	t-value	Sig
Monitored	100	64.36	16.818	2.477*	0.014
Not Monitored	100	59.09	13.036		

Significant (p.>) at .05, df=198, N=200

The result presented in the table 3 above shows that the mean for basic science students whose academic progress are monitored by their parents is 64.36 which was greater than those whose academic progresses are not monitored 59.09. The result shows a calculated t-value of 2.477 and Sig. p-value of .014. The calculated t-value of 2.477 reveals a difference that is statistically significant at 198 degree of freedom. Furthermore, since sig. p-value of .014 is less than 0.05; the null hypothesis is rejected and the alternate is upheld and concluded that there is significant difference between the academic performance of basic science students whose academic progress are monitored by their parents and those whose academic progresses are not monitored.

5. Discussion of findings

5.1. Hypothesis one

The first hypothesis states that there is no significant difference between the academic performance of basic science students who have cordial relationship with their parents and their counterparts who do not have cordial relationship with their parents. This null hypothesis was however rejected on the ground that the obtained p value of .000 was found to be less than the level of significance of .05. The implication of this result is that there is significant difference between the academic performance of basic science students who have cordial relationship with their parents and their counterparts who do not have cordial relationship with their parents.

The findings of this study are in tandem with the study by (Morrison *et al*., 2003) whose study found that a positive relationship between mother and child at the time of kindergarten was related to less likelihood of behavioural problems and greater academic achievement in middle school, even when controlling for demographic variables. The study by (Onuka and Durowoju, 2008) also agrees with the present findings as they reported that Parent-child relationship significantly determined the cognitive achievement of students in Basic Science. The findings of Harris (2006) also aligns with the findings of the present study as it was found that the complex web of social relationships with basic science students experience with peers, adults in the school, and family members exerts a much greater influence on their behaviour than researchers had previously assumed.

5.2. Hypothesis two

The second hypothesis states that medical tourism has no significant difference in the academic performance of basic science students whose basic needs are satisfied by their parents and those whose needs are not satisfied by their parents. This null hypothesis was however rejected on the grounds that the significance level of .000 was found to be less than the assumed p-value of .05. The implication of this result is that parents' provision of basic science students' needs has significant effect on the students' academic performance.

The findings of this study align with the study by (Mugumya, Bashek, Mwesigye, Atibuni, Aduqo and Ahimbisibwe , 2022) whose study on parents' involvement and students' academic performance revealed that parents' provision of students' needs significantly influence their academic performance. Similarly, the study by (Joseph and Ikechi, 2018) on academic achievement of students in basic science among secondary schools in Rivers State: Synergy of parents' educational background, socioeconomic status and school revealed that parents' socioeconomic status significantly affects students' academic performance in basic science.

5.3. Hypothesis three

There is no significant difference in the academic performance of basic science students whose academic progress are monitored by their parents and those whose academic progresses are not monitored. This null hypothesis was however rejected on the ground that the significance level of .014 was found to be less than the assumed p-value of .05. The implication of this result is that parents' monitoring of basic science students' progress has significant effect on the students' academic performance.

The study by (Rodriguez, 2002) agrees with the findings of the present study as it reported that Mexican-American students tend to have higher grades if their parents more closely monitor their extracurricular activities and their families are involved with their school. The study by (Jeynes, 2003) which reported that students whose parents are highly involved with their education tend to do better in school than peers of less involved parents. Also agrees with the findings of the present study

6. Conclusion

Following the results that emerged from the analysis of data collected for this study, the following conclusions were made:

- Basic Science students who have cordial relationship with their parents differ significantly in their academic performance from their counterparts who do not have cordial relationship with their parents.
- There is significant difference in the academic performance of Basic Science students whose basic needs are satisfied by their parents and those whose needs are not satisfied by their parents.
- There is significant difference in the academic performance of basic science students whose academic progress are monitored by their parents and those whose academic progresses are not monitored in Biase Local Government Area of Cross River State.

Recommendations

Based on the findings of this study and the conclusion made thereof, the following recommendations were made:

- Parents should strengthen their mutual relationship with their children to provide the home environment and the psychological disposition needed to enhance academic performance in school.
- For successful academic work, every learner requires basic needs such as reading and writing materials, basic health care, food, clothes and shelter. Parents should help their children meet these basic needs while in schools that their academic success will not be hindered.
- Parents should be committed to what goes on in school especially as it relates to their children. This can be achieved by checking children's books after school, interacting with their teachers and peers, insisting they do their assignments, and so on.

Compliance with ethical standards

Disclosure of Conflict of Interest

We sincerely declare that all the authors have participated in carrying out the research, evaluation and analysis of the manuscript and they have approved the final version. Also, there is no form of conflicts of interest in connection with this paper

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