

IMPACT OF BIRTH-ORDER AND EMOTIONAL INTELLIGENCE ON THE ACADEMIC PERFORMANCE OF SECONDARY SCHOOL STUDENTS IN IBADAN, OYO STATE

A.M JIMOH, Ph.D

Department of Guidance and Counselling,
Faculty of Education,
University of Ibadan
jimoyak@yahoo.com

and

LokoyiOse-LovetO, Ph.D

Federal College of Education (Tech)
Asaba, Delta State
saintloveth@gmail.com

Abstract

This study investigated the effect of birth order and emotional intelligence on the academic performance of secondary school students in Ibadan, Oyo State. This study adopted a descriptive survey design. Using simple random sampling, a sample of 200 students was randomly selected from all registered secondary school students within Ibadan North Local Government Area, Oyo State. Two research questions were raised and answered in this study. The Wong and Law Emotional Intelligence Scale (0.93) and birth order scale (0.74) were administered on the participants. Data collected were analysed, using Pearson Product Moment Correlation (PPMC) and multiple regression analysis. The results indicated that the correlation coefficients between all the variables were significant with the exception of birth order and academic performance. Age, gender and emotional intelligence were significant predictors of academic performance of the participants. Furthermore, 32.2% of the total variance in the academic performance of the participants is accounted for by the combination of the independent variables. Based on the findings, it was recommended that secondary school students should be encouraged to become more enlightened with working principles of age, gender, birth-order and emotional intelligence.

Key words: birth-order, emotional intelligence, academic performance, secondary school students.

Introduction

In contemporary Nigeria, greater emphasis is being placed on industrial and technological development. As a result, students are being encouraged to take up education with prospects of excellent

academic achievement. This quintessential achievement oriented domain education, particularly for college students, includes high performance on tests, passing courses and completing degrees (Habibollah, Margery, Shupe & Yager, 2009). Academic

achievement, which is the central focus that distinguishes the quality and standard of education, has enjoyed numerous theoretical and empirical concerns from scholars. Adeyemo (2001) stated that this is because the major goal of the school is to work towards attainment of academic excellence by the students. The author further asserted that although there may be other peripheral objectives, emphasis is always placed on the achievement of sound scholarship. Achievement, being a yardstick for evaluating educational standard and development, is the major factor in exhaustive and continual studies it has enjoyed from researchers globally.

Academic achievement is undoubtedly a research area after the heart of educational psychologists. Over the years, researches have revealed that academic achievement has numerous determinant factors ranging from socio-economic status (Ajayi & Muraina, 2011) students' employment status (Wantabe, 2005), self-concept (Margery, Shupe & Yager, 2005), students' interest (Udegbe, 2009) teaching methods (Eniayeju, 2010), school entry modalities (Cameson & Wilson, 2011; Olayemi, 2009), gender continuous assessment (Owolabi & Etuk- Iren, 2009). Due to better performance at all levels of education, researchers have continued to improve upon their studies with investigations of several multidimensional variants that could be related to academic achievement.

However, attempts to investigate what determines academic outcomes of learners have come with more questions than answers. Aremu (2000) stressed that the repeated experience of failure is not only frustrating to the students and the parents; its effect is equally grave on the society. Prior literature has shown that students'

achievement in school is determined by variables such as; family, school, society, and motivational factors (Aremu & Sokan 2003; Aremu & Oluwole 2001; Aremu, 2000). In the same vein, Parker, Creque, Harris, Majeski, Wool, and Hogan (2003) noted that much of the previous studies have focused on the impact of demographic and socio-psychological variables on academic achievement. Also, another emerging dimension to the determinants of academic achievement is government factor (Aremu & Sokan, 2003; Aremu, 2004). However, despite the investigations surrounding all these factors, academic achievement of students continues to fall below standard. The rate of failure in 1984/85 was recorded as the worst results in the 46-years history of West Africa Examination Council (WAEC) examinations as only 29.9% of those who sat for the West African School Certificate Examinations (WASCE) passed five subjects and above (Adeyoju 1995). Also, in the May/June 2009 released result, out of 1,373,009 candidates that sat for the examinations, only 356, 981 candidates, representing 25.99 percent, obtained credit passes and above in English Language and Mathematics, and in at least three other subjects (WAEC, 2009).

This disturbing occurrence was corroborated by the awful performance of students in the WAEC Senior School Certificate Examination results of the May/June 2010. Of the total number of 1,351,557 candidates that sat for the examination, only 337,071 candidates, representing 24.94 percent obtained credits in English Language, Mathematics and at least three other subjects (WAEC, 2009).

The poor state of results is not limited to WAEC alone. The results of the May/June 2009, 2010 and 2011 examination conducted by NECO for the Senior

Secondary School Certificate Examination followed a similar pattern. The 2009 NECO results were adjudged the worst ever conducted by the examination body. Also, 2010 recorded performance showed that out of 1,132,357 candidates that sat for the examination, only 283,089 candidates, amounting to 25% passed with five credits in English language and Mathematics. 43 per cent of the candidates that sat for the examination passed at credit level in Biology. This means that over 60 per cent of the 1,132,357 candidates that sat for the examination would not gain admission to any Nigerian university, based on admission requirements (NECO, 2010). The 2011 NECO is reported to have massive failure among the students. A statistical breakdown of the awful trends revealed less than 25 per cent of the 1,160,561 candidates had passes at credit level in subjects, including the two core subjects of Mathematics and English Language across the country.

The order in which a person is born into their family plays a substantial role in the individual's development of personality, character, intelligence, and career choices (Stewart et al., 2001). The familial atmosphere is the first group experience a child has and the child's role in their family influences the development of the child's individual personality traits. In families, children learn what is valuable and meaningful to their parents and siblings and they compete with their siblings for various roles before they find their personal niche in the family (Stewart et al., 2001).

The family environment for a first-born child is believed to affect the child's personality traits in aspects such as extraversion, maturity, and intellect. The first-born child often experiences a prominent sense of overprotection and interference from his parents. First-born

children are usually introverted and relatively mature for their age. This may be in part due to the fact that first-born children tend to spend more time with adults, so it is natural that they would grow up faster. First-borns are exposed to more maternal and paternal participation because there are no other children to divide attention (Herrera, et. al., 2003). First-born children are highly motivated and often perfectionists, which affects academic achievement. First-borns are seen as brighter than their siblings and work very diligently for their achievements.

Relative to first and last born children, middle-children are believed to experience less interaction and receive less attention which negatively affects their self-esteem. Lacking the primacy of the first child and the attention-garnering regency of the youngest child, children in the middle role may feel "squeezed out" of importance in their family. Often, middle children have nothing about them that make them feel special and worthy of their family's attention (Stewart et al, 2001). These children tend to feel their lives are overly scrutinized and look outside the family for their own autonomy. The middle child reacts by acting out as a "rebel". Middle-children are believed to be very envious and try to escape their roles.

Last-born children are believed to be the most creative, emotional, extraverted, disobedient, irresponsible and talkative (Herrera, et. al., 2003). These children are depicted as constantly struggling to resist the higher status of the first born child, while also seeking alternative ways of distinguishing themselves in their parents' eyes. Whereas high intelligence was attributed to firstborns, last born were believed to be more creative and artsy. Past researchers have found that the more social interaction with adults or societal members

(including, of course, parents) a child receives, the better that child will be at solving problems (Fagot & Gauvain, 1997). It is evident, however, that parents interact differently with each of their children (Moore, Cohn & Campbell, 1997). This points to the possibility that birth order, parental attention, and intelligence are linked.

Interest on the effects of birth order on academic performance has been reinvigorated by several recent studies (Black, Devereux & Salvanes, 2005; Conley & Glauber, 2006; Gary-Bobo, Prieto & Picard, 2006) which present new empirical evidence of birth order effects. For example, Black, Devereux and Salvanes (2005) (BDS, hereafter) found large and robust effects of birth order on educational attainment with Scandinavian data. However, despite the convincing results, the underlying causal mechanisms generating such findings remain somewhat unknown. There are several alternative causal hypotheses in the literature trying to explain the relationship between birth order and academic performance.

Furthermore, family intellectual environment, conceptualized as the average mental age of parents and children within the family, tends to decline with each successive birth, due to the low mental ages of young children. Thus, the relationships between intelligence and birth order are both negative; the strength of these negative relationships depends partly on how closely births are spaced. Traditional explanations of birth order have focused their attention on the differential treatment of children and the effect this family structure has on their personality as substantial. However, there is also evidence that this notion is simply the reverse psychology of a self-fulfilling prophecy. It is entirely possible that people's

beliefs about birth rank differences may induce differences in parents' expectations for their own children and about other people in general. They may also induce differences in the attributions about their children's abilities and behaviours as causal evidence. As a result, people may react differently to first born children in comparison to later born children differentially which may reinforce and shape child behaviour.

Socially, first born children are also considerably less arguable and open to new experiences than later born children. The resulting adult personality for these children are very conservative and stiff (Paulhus et al, 1999). First born children are also considered to be shyer and more likely to withdraw from peers, perhaps because their interactions at home have been mainly with adults and peer interaction is less familiar to them. However, this familial position does tend to be more assertive than younger siblings which can be a positive attribute that will help them in many social situations, especially, as they grow older (Snow et al., 1981).

Lacking the primacy of the first child and the often narcissistic and recent youngest child, children in the middle role often feel they are "squeezed" out of their family. Relative to first and last born children, middle children are thought to experience less interaction and receive significantly less attention. These middle children may become discouraged and rejected.

Parental involvement and encouragement has a definite impact on a child's intellectual performance. Educated parents tend to encourage higher aspirations and verbal skills in their first born children in comparison with their later born children. This can be attributed to the more intense parental concern about child achievement

and conformity for earlier born children. It may also be the case that parents have less time for concentrated attention, when later born children spend more time in the company of other supervisors and older siblings. It is also plausible that later born children find they receive more attention for their distinctive actions instead of the repetition of accomplishments by earlier born children (Glass, Neulinger, & Brim, 1974). The earlier born children have the opportunity for parents to devote more attention to their educational needs (Margoribanks & Walberg, 1975). Earlier born children often take advantage of special reading time with parents, while later born children do not always have this luxury.

Three theories were introduced to explain birth order effect on academic achievement. First, some of the intrauterine theories claimed that young mother is able to provide a “rich uterine environment” for her earlier born children and hence, results in greater health and intelligence in the earlier born (Adams, 1972). Furthermore, older siblings always serve as intellectual resource to the younger siblings and this stimulates the intellectual development of the older siblings.

There were empirical findings that demonstrated birth order effect on academic achievement. Travis and Kohli (1995) found that birth order did impact the total years of education completed among the middle class population. The authors also found that the only children appeared to excel academically too, which supported the resource dilution hypothesis. In addition, Nuttal, Nuttall, Polit and Hunter (1976) reported that firstborn girls had better academic attainment than the later-born girls. However, Edwards and Thacker (1979) discovered no association between birth order and grade point average. Besides, Hauser and Sewell (1985) also

reported no significant birth order effect on academic achievement when other confounding variables were controlled.

Birth order is also believed to have an effect on the human capital of an individual. Models from psychology, Zajonc (1976), predicted a decline in intellectual environment with birth order, which can cause a negative effect of birth order on educational aspiration. The constraints are on available parental time and resources, which can cause a negative effect of birth order on educational outcomes (Becker, 1981; and Behrman, 1997). Later born children have to share the available time and resources with their siblings for a larger part of their childhood, than earlier born children. Some empirical studies have indeed found a negative effect (Behrman & Taubman, 1986; Black and Devereux and Salvanes, 2005), but others have found no systematic effect of birth order on educational attainment (Blake, 1981; Hauser and Sewell, 1985).

As emotional intelligence involves such skills as motivation and determination which can play an important role in achieving goals in various fields of life, thereby, leading to success. Studies conducted in multiple areas like education, health, work, etc. indicate that emotional intelligence is related with different aspect of success in life - Intelligence of senior managers with work attitude, work behaviour, work outcomes and job satisfaction. Khokhar and Kush (2009) found that high emotional intelligence in executives brings about better quality of work performance.

Effective learning takes place when students have an understanding of how to learn and this understanding requires such emotional skills as confidence, self-control, the ability to communicate and the ability to cooperate with others. Many studies have

found positive correlation between emotional intelligence and academic achievement. The findings of the study, conducted by Fennin (2000), showed positive correlation between emotional intelligence and achievement scores. Marquez, Martin and Brackett (2006) found relationship between emotional intelligence and academic achievement. Rozell, Pettijohn, and Parker (2002) found relationship between emotional intelligence and CGPA of undergraduate students of Mid-Western University.

Purpose of the Study

The purpose of the study was to examine the impact of birth-order and emotional intelligence on the academic performance of secondary school students in Ibadan. The study would also determine the relationship among these variables and find out the combined and relative effects of emotional intelligence and birth order on the academic performance of secondary school students.

Research Questions

1. What is the pattern of relationship that exists among the variables?
2. What is the combined effect of birth order and emotional intelligence on the academic achievement of secondary school students?
3. What is the relative effect of birth order and emotional intelligence on the academic achievement of secondary school students?

Methodology

This study adopted a descriptive survey design. It attempts to describe what exists now and why certain situations exist,

as well as, the characteristics of the population by studying representative sample.

The population for the study consisted of all registered secondary school students within Ibadan North Local Government Area, Oyo State. A sample of 200 students was randomly selected from all registered secondary school students. The sample was drawn from ten randomly selected secondary schools in the designated area. Both junior and secondary school students were drawn in the study. The participants fell within the ages of 12 to 19 years.

Wong and Law (2002) developed the measure based on summary of a perspective of Emotional Intelligence in the literature, which consists of four domains. These domains formed the four subscales of the measure. Each subscale consisted of four items. The items on the measure were self-rated on a 7- point Likert-type scale and it has a reliability coefficient of 0.72 and the birth-order scale was also measured with a validated scale of 15 items, also on four point Likert scale and it has a coefficient alpha of 0.67.

Pearson Product Moment Correlation and Multiple regressions Analysis were used to answer the two research questions respectively at 0.05 level of significance.

Results

Research Questions One: What is the pattern of relationship that exists among the variables?

Table 1: Correlation Matrix between Independent Variables and Academic Performance

Variable	Birth order	Emotional Intelligence	Academic Performance
Birth order	1000		
Emotional intelligence		1.000	
Academic performance	-0.04	0.168	1.000
Mean	3.45	66.93	10.28
S,D	1.752	8.842	1.491

N = 150, **p <0.05 level of significant at 2-tailed.

Table 2: Regression Summary and ANOVA of Birth Order, and Emotional Intelligence and Students' Academic Performance.

Multiple R = 0.575 R Square = 0.331 Adjusted R Square = 0.322 Standard Error = 1.165					
Analysis of Variance					
Source of Variance	Sum of Square	Df	Mean Square	F	Sig.
Regression	100.487	13	7.730	4.553	.000
Residual	230.887	136	1.698		
Total	331.374	149			

Table 2 reports the results of research question two which reveals that the linear combination of the effect of birth order and emotional intelligence to the prediction of academic performance was significant ($F(13,136) = 4.553, p < 0.05$). All the independent variables accounted for 33.1% of the total variation in academic performance.

The independent variables also yielded a coefficient of multiple regression of 0.331 and multiple regression square adjusted (R^2) of 0.322.

Research Question 2: What are the relative contributions of birth order and emotional intelligence to the prediction of academic performance?

Table 3: Relative Contributions of the Independent Variables on academic performance

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	3.652	0.577		6.335	0.000
Birth order Experience	0.006	0.068	0.003	0.094	0.925
Emotional Intelligence	0.058	0.026	0.080	1.341	0.018

As indicated in Table 3, each of the variables contributed significantly to the dependent variable, birth order and emotional intelligence -20% ($P = -0.195$, $T = -4.324$, $p < 0.05$), -11% ($P = -0.106$, $T = -3.220$, $p < 0.05$), -8.4% ($P = -0.084$, $T = -2.648$, $p < 0.05$), -8% ($P = -0.079$, $T = -2.387$, $p < 0.05$) and -2.7% ($P = -0.027$, $T = -0.816$, $p > 0.05$) respectively.

Discussion of Findings

The results of the study revealed that birth order and student academic performance showed no significant correlation. This is supported by the findings of Stewart et al., (2001) who asserted that birth order has no significant relations in determining academic performance. The position in which a person is born into their family has no significant role in influencing academic performance, especially, as it relates to development of personality, character, intelligence, and career choices (Stewart et al., 2001). The familial atmosphere is the first group experience a child has and the child's role in their family influences the development of the child's individual personality traits. In families, children learn what is valuable and meaningful to their parents and siblings and they compete with their siblings for various roles before they find their personal niche in the family (Stewart et al., 2001).

In the same vein, Adesemowo (2005) identified the factors of the society, the home and the school as influencing academic performance. She identified the societal factors as including medical facilities, inadequacy in educational system, frequent strikes, the anti-intellectual value of culture, and change of books used in schools. The home factors include poor interpersonal relationship. The influence of the family educational climate is defined by the amount and the style of help that children receive from the family. This is determined by elements of the family context, like the dynamic of communication and affective relationships, attitudes towards values and expectations.

Likewise, Black, Devereux and Salvanes (2005) found large and robust effects of birth order on educational attainment. The family environment for a first-born child is believed to affect the child's personality traits in aspects such as extraversion, maturity and intellect. The first-born child often experiences a prominent sense of overprotection and interference from their parents. First-born children are usually introverted and relatively mature for their age. This may be in part due to the fact that first-born children tend to spend more time with adults, so it is natural that they would grow up faster. First-

borns are exposed to more maternal and paternal participation because there are no other children to divide attention (Herrera, et. al., 2003). Travis and Kohli (1995) found that birth order did impact the total years of education completed among the middle class population. The authors also found that the only children appeared to excel academically.

In addition, the result from this study which shows positive significant relationship between emotional intelligence and students' academic performance is in consonance with Khokhar and Kush (2009) where the results of the study found that high emotional intelligence in executives brings about better quality of work performance. The study of Fennin (2000) showed positive correlation between emotional intelligence and students' achievement scores. Moreover, Marquez, Martin and Brackett (2006) supported other authors on the relationship between emotional intelligence and students' achievement where the authors found relationship between emotional intelligence and academic achievement statistically significant and the present finding in this study buttressed this discovery. Likewise, Rozell, Pettijohn and Parker, (2002) found relationship between emotional intelligence and CGPA of undergraduate students of Mid-Western University.

Conclusion

From the above analysis and findings of the study, the study has revealed that academic performance, most especially of secondary school students, has been largely associated with many factors. While many assuages are being made on how to improve this concept, the consequences arising from poor academic performance falls heavily on the students, their parents, the school, the society and the government. Also, as the students' academic performance continues to

nose dive in the negative direction, joint effort should put in place to help to arrest the phenomenon. Thus, this study has revealed that birth order and emotional intelligence have a major impact on the academic performance of secondary school students in Ibadan and should be more enhanced.

Recommendations

It was recommended that birth order and emotional intelligence have a major predictive impact on academic performance among secondary school students. A good school environment, teachers and parental involvement will further enhance these variables among the secondary school students. Further research should be carried out in this area to assist students and schools to achieve better performance.

References

- Altus, W. D. (1966). Birth order and its sequelae. *Science*, 151, 44–49.
- Badyaev, A., Hamstra, T. L., Oh, K. P., & Acevedo Seaman, D. A. (2006). Sex-biased maternal effects reduce ectoparasite-induced mortality in a passerine bird. *Proceedings of the National Academy of Sciences*, 103, 14,406–14,411.
- Baskett, L. M. (1985). Sibling status: Adult expectations. *Developmental Psychology*, 21, 441–45.
- Belmont, L., & Marolla, F. A. (1973). Birth order, family size, and intelligence. *Science*, 182, 1096–1101.
- Blanchard, R. (2004). Quantitative and theoretical analyses of the relation between older brothers and homosexuality in men. *Journal of Theoretical Biology*, 230, 173–187.

- Boone, J. L. (1986). Parental investment and elite family structure in preindustrial states: A case study of late medieval-early modern Portuguese genealogies. *American Anthropologist*, 88, 859–878.
- Cervone, D., & Shoda, Y. (1999). The coherence of personality: Social-cognitive bases of consistency, variability, and organization. New York: Guilford.
- Chen, S., Boucher, H. C., and Tapias, M. P. (2006). The relational self-revealed: Integrative conceptualization and implications for interpersonal life. *Psychological Bulletin*, 132, 151–179.
- Clark, R. D., & Rice, G. A. (1982). Family constellations and eminence: The birth orders of Nobel Prize winners. *The Journal of Psychology*, 110, 281–287.
- Costa, P. T., Jr., & McCrae, R. R. (1992). *NEO PI-R professional manual*. Odessa, FL.: Psychological Assessment Resources.
- Darwin, C. R. (1859). On the origin of species by means of natural selection. London: John Murray.
- Duby, G. (1977). The chivalrous society (Cynthia Poston, Trans.). Berkeley: University of California Press.
- Loehlin, John C. (1992). Genes and environment in personality development. Newbury Park, CA: Sage Publications.
- MacAndrew, F. T., King, J. C., & Honoroff, L. R. (2002). A socio-biological analysis of namesaking patterns in 322 American families. *Journal of Applied Social Psychology*, 32, 851–864.