Admission Policy In Universities: In Search Of Empirical Evidence

Jonathan A. ODUKOYA, Dare O. OMONIJO, Elizabeth I. OLOWOOKERE, Mercy JOHN and Aderemi A. ATAYERO

Abstract: This study set out to verify the hypothesis that 'mature undergraduate students, in terms of chronological age, would significantly perform better than immature undergraduate students academically'. Data on 679 undergraduate students were utilised in the study, out of which 375 were females and 304 were males. Their age ranged from 14 to 22 years with standard deviation of 1.2 while mean age was 17.05 years. The Grade Point Averages [GPA] for 100 level and 200 level first and second semesters, called alpha and omega semesters in this study, were utilised. The parametric statistics employed for analysis was the analysis of variance [ANOVA] which compared the GPA of the least, average and most mature students categorised with age range of 14-16, 17-18, 19-22 years respectively. The result showed that the least mature students, in terms of chronological age, consistently featured significantly higher academic performance than the average and most mature students (Mean Diff. = 0.153, p = 0.033 for 100 level alpha; Mean Diff. = 0.192, p = 0.0 for 200 level alpha). This finding tends to put to question the rationale for the adoption of the policy of not admitting applicants below age 16 into public universities on the ground of immaturity.

Index Terms : University entry age, academic performance, gifted and talented, admission policy, testing

1. INTRODUCTION

Numerous academic presentations have illustrated the expediency of quality education globally [1, 2]. These studies have shown that quality education is key to leadership development in any society. However, we should not lose the sight of the fact that admission is a crucial aspect of education, as it guarantees the recruitment of students to educational institutions from the elementary level to the highest citadel of learning is not possible. Thus, every educational institution sets policies to ensure successful recruitment of students every academic year. However, an admission policy that uses chronological age as university admission criterion without solid empirical validation is apt to have a boomerang effectFor instance, such policy is likely to screen out gifted and talented candidates who are naturally endowed to catalyse national development and become pragmatic national leaders in their respective fields. It has been empirically established that acceleration is an effective facilitating method for nurturing the gifted and talented. According to [1], educational stepping up is considered the foundations of classic talented learning practices. When students change from traditional curriculum at an unusual rate acceleration is said to have occurred. Dual-credit courses, early admission to tertiary institutions, grade-skipping, programme-based acceleration and edit courses are considered several forms of speeding up. Several authors view acceleration to be a suitable educational intercession for talented students, due to the fact that it permits matching syllabus with willingness and enthusiasm.

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When gifted students are accelerated these ways, they often fall into grade cohorts of students above their age. They end up getting ready for admission into tertiary institutions way below the statutory admission age. Any effort to stop them at this stage is bound to be counter-productive for the student and for the nation. How? Gifted students are naturally bored with traditional curriculum and regimented movement of students across classes. Their cognitive development tends to endow them with unusual ability to process information faster and at deeper levels. This explains their feeling of boredom and attendant tantrums when forced to follow the traditional education system. It has been observed that accelerated talented students usually overtake their peers who are not as talented as they are in the long term academic pursuit. Such may acquire degrees, publish work, and receive patents in the STEM areas [3 & 4]. Furthermore, some authors have argued that, acceleration tend to encourage students' who are highly talented to achieve academic achievement, such that they better than their colleagues in other areas, which include grade in college scores on standardized tests the status of the universities they attend and their later career paths [1 & 4]. Attempts to use admission policy of age maturation, therefore, is likely to lead to the destruction of the gains of acceleration. It will not only frustrate the gifted students but is apt to breed social miscreants that would more likely be national liabilities than assets. This study was designed to provide empirical evidence to justify [or otherwise] the current policy of not admitting students below sixteen {16} years of age, irrespective of their cognitive endowment or giftedness.

For many years now, federal universities in Nigeria, and similar institutions around the world, operate on stringent policies [5]. Most of these policies limit admission age to 16. The point often advanced is that applicants in this category are not mature enough to cope with the demands of tertiary institutions. However, some universities are not in support of this policy. The question is, who is right? Another question is, what kind of maturity is raising concern? Could it be cognitive maturity, which appears to be the most relevant in tertiary academic environment? Apparently not, because many brilliant students below the age of 16 years, who were determined to stand for the truth, have been denied admission into universities, even when they score in the range of the top 3%. This suggests that the policy implementers were more concerned about chronological age, because often not

psychological test were conducted to measure maturity of any sort. It is expected that the management of tertiary institutions should be more concerned with the cognitive maturity of applicants, seeing it has greater relevance to academic prowess, the core objective of university education. If, however, the focus is on affective maturity (which has to do with emotions, feelings and social interactions), it is expected that affective or social immaturity should adversely affect the academic performance of such 'underage' applicants. It is this hypothesis this study set out to verify – that mature undergraduate students [by current standard of chronological age above 16] would significantly outperform immature undergraduate students academically.

2 METHOD

The ex-post facto design was utilised in this study, with data obtained from the institution's students' records. Six hundred and seventy-nine [679] undergraduate students' record was used in this study, Out of this sample, 375 were females while 304 were males. Their age ranged from 14 to 22 years with standard deviation of 1.2 while mean age was 17.05 years. The least, average and most matured students were categorised with age range of 14-16, 17-18, 19-22 years respectively. Undergraduates with incomplete academic records were excluded. The Grade Point Average scores for four semesters were used – 100 level alpha semester, 100 level omega semester, 200 level alpha semester, and 200 level omega semester. These descriptive statistics of the sample distribution are displayed in Table 1 and Figures 1 and 2 below.

Table 1: *Descriptive Statistics of Core Variables*

	N	Range	Min	Max	Mean	Std. Dev.	Var.	Std Err	Std. Err
Age	675	8	14	22	17.05	1.208	1.46	0.094	0.186
Alpha_100Level	679	4	1	5	4	0.731	0.534	0.094	0.187
Omega_100Level	679	4	1	5	3.95	0.737	0.543	0.094	0.187
Alpha_200Level	679	5	0	5	3.78	0.817	0.668	0.094	
Omega_200Level	678	4	1	5	3.87	0.842	0.709	0.094	

Source: Researchers compilation

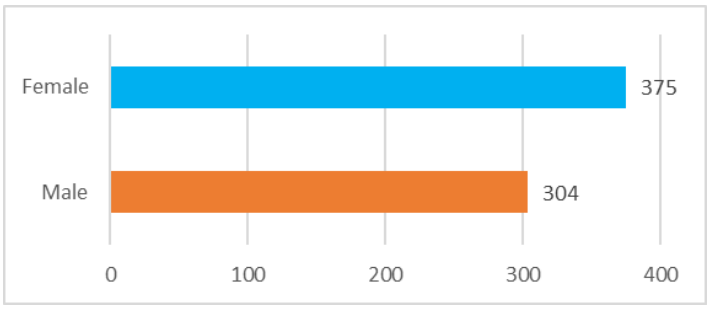

Fig. 1. *Gender distribution of the respondents*

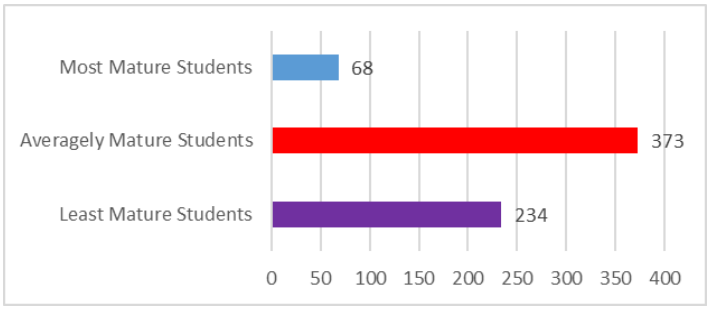

Fig 2: *Distribution by Age*

Note: Maturity Levels are given by: Least: 14-16; Average: 17-18; Most: 19-22The GPA scores were derived from the scores of students' responses to the semester examinations. Scores of 70% and above was graded as A and allotted 5 points; while 60-69% was allotted 4 points; 55-59%: 3 points; 50-54%: 2; and 45-49%: 1 point. Scores below 45% were graded F with 0 point. The Grade Point for each course was derived by multiplying the grade points with the course unit. This was repeated for all the courses taken by the student. The GPA was derived by dividing the summation of the grade points for all courses taken by the student with the total number of units for all courses taken {6-8}. The entry age was retrieved from the students' bio-data form completed at the point of admission into the university. Based on the range of age set admitted into the university {14-22}, the students ages were categorised into three levels: least mature {14-16}; averagely mature {17-18} and most mature {19-22}. Following the objective of finding out the effect of students' maturity on their academic performance, the data was subjected to analyses using descriptive statistics and analysis of variance [ANOVA]. The descriptive statistics [using mean GPAs and charts] of the maturity level and academic performance of undergraduates in a private Nigerian university are presented in Figures 3-6 and Tables 2 and 3.

3 RESULTS

Comparative Analysis of Students' Academic Performance and Chronological Age

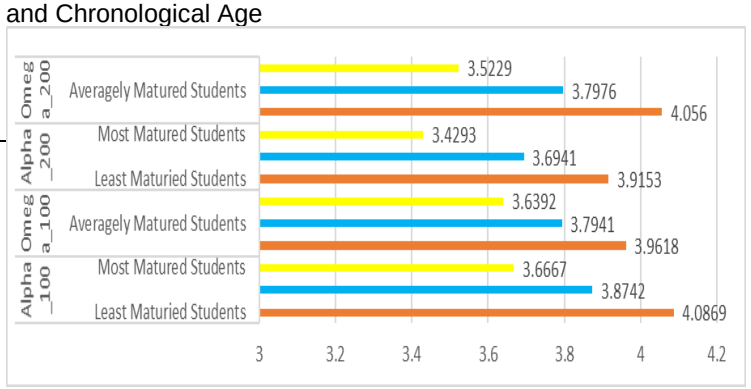

Figure 3: *Comparative Analysis of Students' Academic Performance [Mean GPA] by Maturity Level [Age]*

Comparing the GPA of Students by Maturity Level Over Four Semesters

Table 2: ANOVA Result

		Sum of Squares	df	Mean Square	F	Sig.
Alpha_100Level	Between Groups	11.782	2	5.891	11.514	0
	Within Groups	343.842	672	0.512		
	Total	355.624	674			
Omega_100Level	Between Groups	4.396	2	2.198	4.093	0.017
	Within Groups	360.891	672	0.537		
	Total	365.287	674			
Alpha_200Level	Between Groups	15.593	2	7.796	12.173	0
	Within Groups	430.391	672	0.64		
	Total	445.984	674			
Omega_200Level	Between Groups	22.539	2	11.269	16.857	0
	Within Groups	448.579	671	0.669		
	Total	471.117	673			

The ANOVA results in Table 2 show that there were significant differences in the mean GPAs of least mature, averagely and most mature students.

Table 3: *Scheffe Post Hoc Analyses Result*

Dependent Variable	(I) Age_Group	(J) Age_Group	Mean Difference (I-J)	Std. Error	Sig.
Alpha_100Level	Least Mature Students	Averagely Mature Students	.153*	0.06	0.037
		Most Mature Students	.465*	0.099	0
	Averagely Mature Students	Least Mature Students	-.153*	0.06	0.037
		Most Mature Students	.311*	0.094	0.004
	Most Mature Students	Least Mature Students	-.465*	0.099	0
		Averagely Mature Students	-.311*	0.094	0.004
Omega_100Level	Least Mature Students	Averagely Mature Students	0.119	0.061	0.151
		Most Mature Students	.270*	0.101	0.029
	Averagely Mature Students	Least Mature Students	-0.119	0.061	0.151
		Most Mature Students	0.151	0.097	0.298
	Most Mature Students	Least Mature Students	-.270*	0.101	0.029
		Averagely Mature Students	-0.151	0.097	0.298
Alpha_200Level	Least Mature Students	Averagely Mature Students	.192*	0.067	0.016
		Most Mature Students	.528*	0.11	0
	Averagely Mature Students	Least Mature Students	-.192*	0.067	0.016
		Most Mature Students	.336*	0.106	0.007
	Most Mature Students	Least Mature Students	-.528*	0.11	0
		Averagely Mature Students	-.336*	0.106	0.007
Omega_200Level	Least Mature Students	Averagely Mature Students	.267*	0.068	0.001
		Most Mature Students	.612*	0.113	0
	Averagely Mature Students	Least Mature Students	-.267*	0.068	0.001
		Most Mature Students	.345*	0.108	0.006
	Most Mature Students	Least Mature Students	-.612*	0.113	0
		Averagely Mature Students	-.345*	0.108	0.006

* The mean difference is significant at the 0.05 level.

Source: Researchers compilation

The ANOVA post-hoc analyses results in Table 3 show that the least mature students consistently featured significantly higher mean GPAs than the averagely and most mature students in the four semesters assessed, except in the 100 level Omega semester examination when there was no significant difference in their academic performance with the averagely mature students. The averagely mature students also consistently featured significantly higher mean GPAs that the most mature students, except in the 100 level Omega semester examination. The box plots in Figures 4, 5, 6, 7; the scatter plots in Figures 8, 9, 10, 11; and the mean plots in Figures 12, 13, 14, 15 further clarify these deductions.

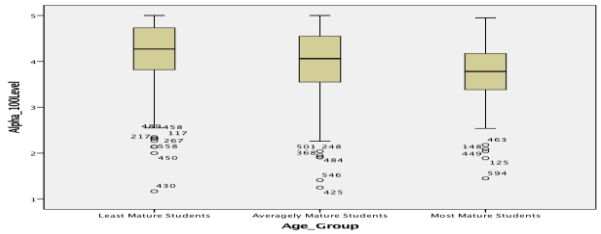

Fig. 4*: Box Plot for 100 Level Alpha*

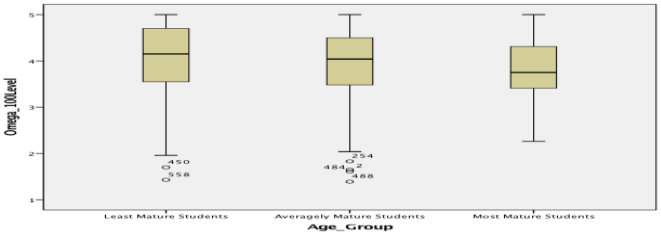

Fig. 5*: Box Plot for 100 Level Omega*

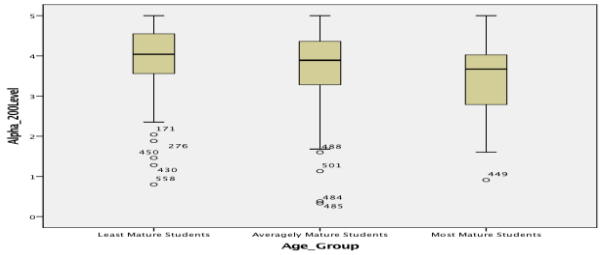

Fig. 6*: Box Plots for 200 Level Alpha*

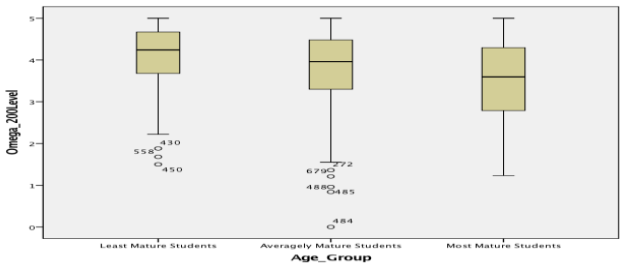

Fig. 7: *Box Plots for 200 Level Omega*

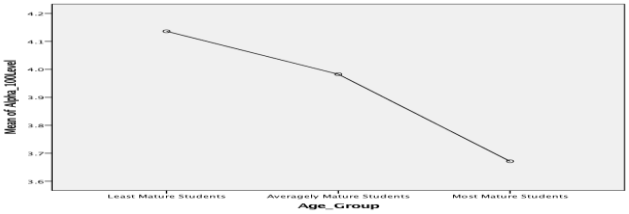

Fig. 12: *Mean Plot for 100 Level Alpha*

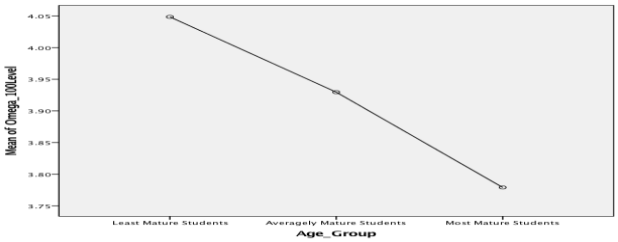

Fig. 13: *Mean Plot for 100 Level Omega*

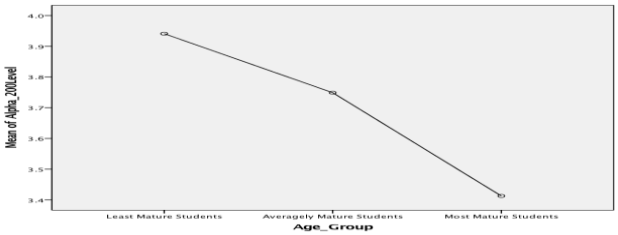

Fig. 14: *Mean Plots for 200 Level Alpha*

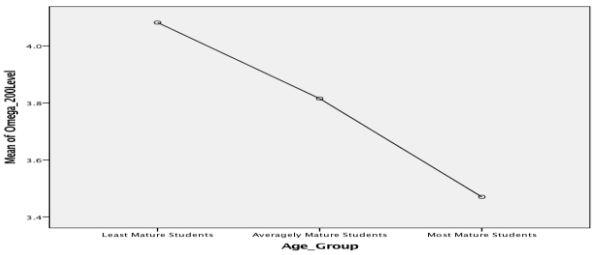

Fig. 15: *Mean Plots for 200 Level Omega*

4 DISCUSSION

The clarion submission from these findings is that there is no empirical support for the policy of not admitting applicants to universities on the basis of age immaturity as it is currently practiced in many federal universities in Nigeria and similar universities around the globe. Conversely, the findings from this study tend to justify the admission policy of the private universities utlised in this study, where younger students were admitted, as long as they are cognitively mature enough to comprehend the university curriculum content in their respective courses. The aptitude screening tests administered at the point of admission serve to ensure this. The finding in this study tend to contradict some submissions that maturity is linked with superior academic performance [9-11]. However, the finding of [12] tend to corroborate the finding in this study that younger undergraduates performed significantly better than older, presumably 'more mature', students.

5 CONCLUSION

This study set to obtain empirical evidence to justify the admission policy of not admitting applicants below the chronological age of 16, irrespective of their cognitive processing prowess. It was consistently found, in all the four semesters assessed, that the 'immature' students performed significantly better than the 'mature' students. This debunked the veracity of the age long admission of denying 'immature' students' admission into universities. While further study is recommended to further verify these findings, concerned university management and supervisory bodies [like the Nigerian National Universities Commission] are advised to review the admission policy of not admitting 'immature' students into universities. Students with proven cognitive abilities, especially those bordering on giftedness, should be highly encouraged via acceleration and provision of an enabling environment to nurture their natural intellectual endowment. This singular act is apt to catalyze national productivity and development.

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