

## Learning Approaches as Predictors of Academic Performance of Undergraduate Students in Ahmadu Bello University, Zaria

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### **Abstract:**

**Background:** The research was conducted to investigate learning approaches as predictors of academic performance of undergraduate students in Ahmad Bello University, Zaria. The aim was to assess the learning approach of undergraduate students in Ahmadu Bello University, Zaria. The objectives are to determine the predominant learning approach, identify factors that influence the students learning approach and explore the relationship between approaches to studying and academic achievement of undergraduate students of Ahmadu Bello University, Zaria.

**Materials and methods:** A non-experimental descriptive survey method was employed and analysis was done using SPSS version 21. The sample technique was probability (simple random) type of sample technique base on faculty. The sample size was calculated to 395 using Yamane formula. 395 questionnaires were administered out of which 375 were retrieved.

**Results:** The study shows that 81.1% of the students were aware of learning approach and the predominant learning approach mostly used by Ahmadu Bello University, Zaria undergraduate students is surface approach ( $M=14.88, SD=2.64$ ). The study identified personal factors, family factors, school factors and peer factors and social factor as factors that influence the students learning approach. It also shows that there is a significant relationship between learning approach and academic achievement ( $R=0.205, p=0.005$ ).

**Conclusion:** The predominant learning approach adopted by Ahmadu Bello University, Zaria undergraduate students is surface approach. However, deep approach significantly predict high academic achievement. Personal factors, family factors, school factors, peer factors and social factors were also identified as factors that influence the students learning approach. Finally, it can be clearly stated that there is significant relationship between learning approach and academic achievement with deep approach having the highest preference for academic achievement.

**Recommendation:** It is recommended that some number of students should be assign to an academic coach for advice on learning approach, there should be regular enlightenment program to discuss factors that could improve students' approach to learning. As well as to motivate the returning undergraduate students towards a deeper approach to studying which would be beneficial to them in achieving the expected long term goals

**Key words:** Academic Performance, Undergraduate, Learning approach

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### I. Background

One of the topical issues that have attracted widespread attention in educational research is the teaching and learning processes. Of particular interest is a range of student's academic learning issues, including concerns about the efficacy of learning approaches and the levels of reflective thinking demonstrated by students in their academic learning. Within the body of academic literature that have addressed these issues, there seem to be a general agreement that educators need to be proactive in helping students to adopt deep approach to learning and also develop critical thinking skills in the learning process to learn (Abdurashied, 2012).

Biggs (2001) refers to learning approaches as how students go about learning, their learning intentions (motives) and their methods (strategies). Educational researchers have argued that to systematically improve the quality of learning is necessary in other to understand student approaches to learning. The approach students' use in their study has a significant impact on both the quality of the learning and their academic success. It would clearly be of value to identify students whose approach to learning was predictive of unsatisfactory performance. Approaches to learning are source of understanding teaching and learning. They are particularly useful for teachers who want to understand their students' learning and create learning environments which encourage students to achieve desired learning outcomes (Zeegers, 2001).

Marton & Saljo (1984) stated that learning approach plays a central role as a process between the input (e.g. teaching context, student factors) and the output (e.g. quality of cognitive learning outcomes). Researchers have identified two contrasting and theoretically opposed learning approaches: deep and surface (Enwistle &

Mc Cune, 2004; Biggs, 1984). Students who deploy a deep approach to learning tend to conceive learning as transforming information, to be intrinsically motivated and to use strategies focusing on the meaning of the material to be learned. Students who deploy a surface approach tend, on the contrary, to conceive learning as reproducing knowledge, to be extrinsically motivated and to use strategies focusing on the reproduction of those materials. Following this theoretical perspective, additional learning approach strategic approach have also been suggested by Entwistle & Ramsden (1983) in their research work carried out at the University of Lancaster. The strategic approach is based on achieving motivation and involves strategies (such as systematic use of previous paper in revision, good organization, effective note taking, awareness of marking scheme and criteria) that lead to high marks.

Educators, trainers, and researchers have long been interested in exploring variables contributing effectively for quality of performance of learners. These variables are inside and outside school that affect students' quality of academic achievement. These factors may be termed as student factors, family factors, school factors and peer factors (Cronsoe, Johnson & Elder, 2004). Mann (1985) identified that the formal investigation about the role of these demographic factors rooted back in 17<sup>th</sup> century. Generally these factors include age, gender, geographical belongingness, ethnicity, marital status, socioeconomic status (SES), parents' education level, parental profession, language, income and religious affiliations.

An important aspect of learning approaches is its relationships with metacognition as conceptualized by Baird in 1990: 'the knowledge, awareness and control of one's own learning'. When students learn they play an active role in determining what they will learn (intention), how they will learn it (strategy), and in allocating mental resources; indeed learning approaches and metacognition are linked constructs (Case & Gunstone, 2002). The recognition and use of these two approaches to learning by students is backed up by many years of global research and studies into student learning at both undergraduate and school level. Studies in Australia and Hong Kong, in the 1990s, sought to unravel the mysteries of the learning approaches used by Asian and western students (Kember, 2004). It was commonly thought that Asian students mainly engaged in surface approaches to learning while Western students engaged routinely in deep approaches to learning, even though Asian students were seen as high achievers. This was often observed when Asian students entered Western schools and universities and struggled to engage meaningfully in class.

In this era of globalization and technological revolution, education is considered as a first step for every human activity. It plays a vital role in the development of human capital and is linked with an individual's well-being and opportunities for better living. It ensures the acquisition of knowledge and skills that enable individuals to increase their productivity and improve their quality of life. This increase in productivity also leads towards new sources of earning which enhances the economic growth of a country (Battle & Lewis, 2002). Many studies have demonstrated that students who have weaknesses in learning and study strategies are less likely to be successful in college (Prymachuk, Easton & Littlewood, 2009; Hounsell, 2005; Entwistle & Peterson, 2004). Variations in faculty expertise, teaching approach, commitment to academic rigor and grading compound are complex problem (Wells, 2007). In addition, other studies have shown that the learning environment can have a considerable impact on how the student chooses to learn which further impacts on the learning outcome (Rosander, 2009). While many are successful in their studies, there still remains the students-at-risk and those who fail. It has been shown that the approach to learning has a significant effect on the subsequent outcome of the specific learning process. Deep approaches have been associated with a higher quality of learning outcome whilst surface approaches have been associated with unsatisfactory learning outcome (Struyven, Dochy, Janssens, Schelfhout & Gielen, 2006).

Education has become the order of the day in our contemporary Nigeria that people move from various part of the country to another in pursuit for learning. However, the competency requirements for the graduates by the employers are on the increase as they are not willing to employ people with poor grade. For this reason, a research is needed to determine the predominant learning approach, identify factors that influence the students learning approach and explore the relationship between approaches to studying and academic achievement of undergraduate students of Ahmadu Bello University Zaria.

## **II. Materials and Methods**

Ahmadu Bello University, (ABU) Zaria is the largest University in Nigeria (and sub Saharan Africa) and second largest in Africa, second only to Cairo University of Egypt. It is situated in Zaria, Kaduna state. The university is named after a then Saradauna of Sokoto in person of Alhaji, Sir, Ahmadu Bello, the first premier of Northern Nigeria. Founded on October 4, 1962 as the University of Northern Nigeria by the then Northern Region government and taken over as a federal institution by 1975. The University operates two main campuses, Samaru campus and Kongo campus. The Samaru campus houses the administrative offices, science, arts and languages, education and research facilities while the Kongo campus hosts the faculties of law and administration.

A cross-sectional descriptive survey design was adopted for this study. The instrument used in data collection was a self-administered (structured) questionnaire. The questionnaire was based on the content of the objectives of the study. It has three sections (i.e. A, B, C): Socio-demography, predominant learning approach adopted by undergraduate students and factors that influence students learning approach. From the data obtained from Management and Information System (MIS) unit of the university (2013), the population of undergraduate students for 2012/2013 academic session is 30,560, with Samaru campus having 25,525 students and Kongo campus with 5035 students. Sample was determined with the use of Yamane's sample size formula. The adopted sampling technique for this study was the probability type of sampling technique. Simple random sampling was used to select six (6) faculties using lottery method. The selected faculties include: Sciences = 6327, Medicine = 1409, Administration = 3648, Social Sciences = 3250, Veterinary Medicine = 516 and pharmaceutical sciences = 839, making up a target population of 15989. Hence 156, 35, 90, 80, 13, and 21 samples (undergraduate students) will be taken respectively from faculty of Sciences, Medicine, Administration, Social sciences, Veterinary medicine and Pharmaceutical sciences. However, the questionnaires were distributed base on availability. To further ensure the validity, clarity and reliability of the instrument, it was used in a pilot study on ten students who were not part of the study before being used for data collection and it was found to be clear and understandable. Ethical approval was obtained from the medical and ethics committee of Ahmadu Bello University Teaching Hospital. The students' consent was obtained orally prior to questionnaire administration and respondents' anonymity was protected by ensuring that no student identifiers existed in the data collection instrument. Data collected with aid of questionnaire was analyzed using SPSS version 21. Frequency and percentages table was used to present the socio-demography data, Friedman chi-square test was used to analyze the predominant learning approach, while mean and standard deviation was used to describe factors that influence students learning approach, regression analysis was used to explore the relationship between approach to learning and academic achievement.

### **III. Results**

Majority of the students 200(53.3%) are within the age range of 19-21 years, 112(29.9%) are within 22-24 years, 33(8.8%) are within 25-27 years and the least above 27 with 3(0.8%). The mean age of the students is 21 years. 192 representing (51.2%) are Hausas, 130(34.7%) making others, 33(8.8%) are Yorubas with the least of 20(5.3%) Igbos. 367(97.7%) of the students are single, 4(11%) are married and 4(11%) falls under others. 271(72.3%) are Muslims and 104(27.7%) are Christians. 261(69.6%) are male and 114(30.4%) are female. Majority of the respondents are 200 level with 149(39.7%), 101(26.7%) in 100 level, 86(22.9%) in 400 level, 35(9.3%) in 300 level and 4(1.1%) in 500 level. Faculty of sciences has the highest number of students with 153(40.8%), 84(22.4%) in faculty of Administration, 71(18.9%) in faculty of social sciences, 33(8.8%) in faculty of Medicine, 21(5.6%) in faculty of Pharmacy and faculty of Veterinary Medicine with the least 13(3.5%) number of students. Majority of the students 164(53.6%) have the CGPA of 2.40-3.49, 85(27.8%) within 3.50-4.49, 50(16.3%) are within 1.5-2.39 and the least below 1.00 with 1(0.3%) [Table 1]

Majority 306(81.6%) have heard of learning approach while 69(18.6%) have not heard of learning approach [Table 2]. There is a statistically significant difference in their learning approach ( $\chi^2=477.740, p=0.000$ ). Base on this output of the chi-square analysis the predominant learning approach which is ranked 2.64 is surface approach ( $M=14.88, SD=2.62$ ), while the least which is ranked 1.00 is strategic ( $M=7.51, SD=2.70$ ) [Table 3]. Personal factors: the respondents identified self-confidence ( $M=2.15, SD=0.998$ ), interest in material under study ( $M=1.95, SD=0.939$ ), degree stress ( $M=1.92, SD=0.971$ ) respectively, as factors that influence their learning approach with the exception of age and gender. School factors: the respondents identify both learning environment ( $M=1.96, SD=0.862$ ) and class size ( $M=1.98, SD=0.949$ ) as factors that influence their learning approach. Parental factors: family income ( $M=2.18, SD=0.931$ ) was identified as factors that influence their learning with exception parent level education ( $M=2.64, SD=1.015$ ) and parental occupation ( $M=2.71, SD=0.976$ ). Course related factors: nature of assessment ( $M=2.18, SD=0.993$ ), complexity of the course material ( $M=2.05, SD=1.014$ ) and course of study ( $M=2.17, SD=1.063$ ) respectively were all identified as factors that influence leaning approach. Peer factors: studying with friend(s)/colleague(s) with mean responses ( $M=2.31, SD=0.908$ ) was identified as factor that influences learning approach. Social factors: class room participation ( $M=2.36, SD=0.938$ ) and student teachers ( $M=2.46, SD=0.998$ ) were identified as factor that influence learning with the exception of extracurricular activities ( $M=2.64, SD=0.973$ ) [Table 4].

The study shows that there is a significant relationship between learning approach and academic achievement ( $R=0.205, p=0.005$ ). The table also shows that learning approach account for 4.2% of variation in academic achievement. Further analysis shows that out of the three approaches to learning only deep approach significantly predict high academic achievement ( $p=0.032$ ) [Table 5].

**Table 1: Distribution of respondents by socio-demographic data (N=375)**

Variable	Frequency	Percentage
<b>Age</b>		
16-18	27	7.2
19-21	200	53.3
22-24	112	29.9
25-27	33	8.8
Above 27	3	0.8
<b>Ethnic group</b>		
Hausa	192	51.2
Yoruba	33	8.8
Igbo	20	5.3
Others	130	34.7
<b>Marital status</b>		
Single	367	97.9
Married	4	11
Others	4	11
<b>Religion</b>		
Islam	271	72.3
Christianity	104	27.7
Others	0.00	0.00
<b>Sex</b>		
Male	261	69.6
Female	114	30.4
<b>Level</b>		
100	101	26.7
200	149	39.7
300	35	9.3
400	86	22.9
500	4	1.1
600	0.00	0.00
<b>Faculty</b>		
Sciences	153	40.8
Administration	84	22.4
Social sciences	71	18.9
Medicine	33	8.8
Pharmacy	21	5.6
Vet. Medicine	13	3.5
<b>CGPA</b>		
<1.00	1	0.3
1.00-1.49	4	1.3
1.50-2.39	50	16.3
2.40-3.49	164	53.6
3.50-4.49	85	27.8
4.50-5.00	2	0.7

**Table 2 Friedman chi-square test showing mean differences in learning approaches adopted by ABU Zaria undergraduate students**

Variable	N	Mean	Mean rank	Std. Dev.	Df	$\chi^2$	P
Surface approach	306	14.88	2.64	2.62	2	477.740	.000
Deep approach	306	13.88	2.36	2.70			
Strategic approach	306	7.51	1.00	1.80			

**Table 3 Descriptive statistics showing mean and standard deviation responses of factors influencing learning approach (N=306)**

Variable	Min.	Max.	Mean	Std. Dev
<b>Personal factors</b>				
Age	1	4	2.93	0.979
Gender	1	4	3.08	1.008
Self confidence	1	4	2.15	0.998
Interest in material under study	1	4	1.95	0.939
Degree stress	1	4	1.92	0.971
<b>School factors</b>				
Learning environment	1	4	1.96	0.862
Class size i.e. number of students in the class	1	4	1.98	0.949
<b>Parental factors</b>				
Family income	1	4	2.18	0.931
Parent level of education	1	4	2.64	1.015
Parental occupation	1	4	2.71	0.976

<b>Course related factors</b>	1	4	2.07	0.993
Nature of assessment e.g. shotgun	1	4	2.05	1.014
Complexity of the course material	1	4	2.17	1.063
Course of study	1	4	2.13	0.946
Orientation about the course of study				
<b>Peer factors</b>				
Studying with friend(s)/colleague(s)	1	4	2.31	0.908
Studying with someone from your place	1	4	2.99	0.985
<b>Social factors</b>				
Extracurricular activities	1	4	2.64	0.973
Class room participation	1	4	2.36	0.938
Student teachers relationship	1	4	2.46	0.998

**Table 4** Regression analysis showing relationships between approaches to studying and academic achievement

N=306	R= .205R <sup>2</sup> = .042 Adjusted R <sup>2</sup> = .032, F(3,302)=4.41p=.005, Std. Error of: .724				
	Beta	Std. Err.	B	t(373)	P
Surface approach	.021	.017	.075	1.253	0.211
Deep approach	-.035	.016	-.130	-2.155	0.032
Strategic approach	-.043	.024	-.107	-1.792	0.074

Dependent Variable: CGPA Predictors: Strategic approach, Surface approach, Deep approach

#### IV. Discussion

From Table 1 above, majority 306(81.6%) have heard of learning approach while 69(18.6%) have not heard of learning approach. Table 2 above, shows that there is significant difference in the student learning approach and also identify surface approach as the predominant leaning approach used by ABU, Zaria students. This result is in contradiction with the study conducted in Columbo which stated deep approach as the predominant learning approach used by the students (Subasinghe & Wanniachchi, 2003). The difference in the result could be as a result of difference in socio-economic status, learning environment and interest in material under study as well as the present area of study.

From table 3. above personal factors with five variables to include self-confidence (M=2.15,SD=0.998), interest in material under study (M=1.95,SD=0.939), degree stress (M=1.92,SD=0.971) were identified as factors that influence their learning approach. This result is in agreement with the findings of Cronsoe, Johnson & Elder (2004) which identified personal characteristics as one of the factors that influence learning. However, gender was not considered as factor that influences their learning approach. This is similar to the findings of Subasinghe & Wanniachchi (2003) which identified that gender is not a factor that influences learning approach. Age was not considered as factor which could be as a result of interest shown by the students in learning. School factors with the following variables learning environment (M=1.96,SD=0.862) and class size (M=1.98,SD=0.949) were considered as factors that influence their learning. Under parental factors, family income (M=2.18,SD=0.931) was identified as factors that influence their learning. Parent socio-economic status has a significant effect on students overall academic achievement (Farooq, Chaudry, Shafiq & Berhanu, 2011). It is also in agreement with research of Adams (2006) that low SES has negative effect in academic performance of the students because the basic needs of the students remain unfulfilled and hence they do not perform better academically. Parent level of education and parental occupation were not considered as factors that influence their learning. This could be as a result of reimbursement of student with good family income regardless of the parent level of education or occupation. Course related factors with the following variables nature of assessment (M=2.18,SD=0.993), complexity of the course material(M=2.05,SD=1.014) and course of study(M=2.17,SD=1.063) respectively were all identified as factors that influence learning approach. This is agreement with the findings of Jones, Reichard & Mokhtari (2003) that identified course of study as factor that influence learning approach.

Peer factors with the variable studying with friend(s)/colleague(s) (M=2.31,SD=0.908) was only identified as factor that influences learning approach, while study with someone from the same place/ culture was not identified as a factor. This can be attributed to difference in handling academic challenges. Social factors with these variables class room participation (M=2.36,SD=0.938) and student teachers (M=2.46,SD=0.998) were identified as factor that influence learning. Extracurricular activities (M=2.64,SD=0.973) was not identified by the students as factor that influence their learning which could be as result of good management of time.



From Table 4 above, it shows that there is a significant relationship between learning approach and academic achievement ( $R=0.205$ ,  $p=0.005$ ). The table also shows that deep approach significantly predicts high academic achievement ( $p=0.032$ ).

## V. Conclusion

The predominant learning approach adopted by Ahmadu Bello University, Zaria undergraduate students is surface approach, personal factors, family factors, school factors and peer factors and social factors were identified as factors that influence the students learning approach. There was significant relationship between learning approach and academic achievement with deep approach having the highest preference for academic achievement.

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