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An Assessment of Educational Wastage Rates among Undergraduates in the University of Benin, Benin City

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Abstract: *This study assessed the rate of educational wastage among undergraduates in the University of Benin, Benin City. Three research questions guided the study, while two hypotheses were tested at the 0.05 level of significance. A descriptive research design was adopted. The target population comprised 6,531 students admitted into the university during the 2014/2015 academic session. A sample of 781 students was purposively selected from eight academic programmes. The research instrument used was a checklist, validated by three experts in the field. Data were analyzed using the Crude-Cohort Wastage Rate (C-CWR) formula, as well as t-test and ANOVA statistics. Findings revealed a substantial level of educational wastage across the university. The study recommended that university administrators should uphold strict academic discipline and student support mechanisms to mitigate wastage.*

Keywords: *Educational wastage, undergraduates, university education, wastage rate*

Introduction

The university education system comprises both academic and non-academic units. The academic structure includes various programmes subdivided into departments offering courses organized into distinct academic levels, in line with the guidelines provided by the National Universities Commission (NUC). The duration of these programmes varies by discipline, some require a minimum of four years for completion, while others extend to five or six years. Consequently, within each academic cycle, students enrolled in a specific course of study are expected to complete their programmes within the prescribed minimum period.

Agboola and Adeyemi (2013) assert that under ideal circumstances, students admitted at the onset of a programme are expected to progress through subsequent academic levels without interruption until graduation. However, empirical evidence suggests that this ideal progression is not always achieved. Many students fail to complete their programmes within the stipulated timeframe, withdraw prematurely, or repeat academic sessions. This phenomenon, commonly referred to as *educational wastage*, represents a significant deviation from the intended educational trajectory and disrupts the optimal functioning of the higher education system.

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The concept of educational wastage originates from economic theory, which evaluates systems based on their ability to convert inputs into desired outputs efficiently. In the educational context, wastage reflects the system's failure to achieve its intended objectives, such as timely graduation and effective utilization of educational resources. According to the United Nations Educational, Scientific and Cultural Organization (UNESCO, 2017), educational wastage denotes the inefficient use of educational resources and opportunities, with far-reaching socio-economic consequences, including increased unemployment, lower income levels, higher crime rates, dependency on public support, and adverse health outcomes.

Recognizing the strategic importance of university education, governments worldwide—including Nigeria—have made substantial investments in this sector to stimulate national development and reduce poverty. In line with UNESCO's policy directives, the Nigerian government prioritizes education as a foundational pillar of its development agenda. Universities receive annual allocations of financial and material resources to fulfill their mandates of teaching, research, and community service. Despite these investments, many students experience academic difficulties, such as course carryovers, probation, and premature withdrawal, which collectively contribute to educational wastage. These inefficiencies limit the return on educational investments and undermine national development goals.

At the University of Benin, Benin City, educational wastage remains a persistent issue. Data from the institution's Academic Planning Division reveal notable patterns of wastage across academic levels, programmes, and student demographics over the five academic sessions from 2009/2010 to 2013/2014. During this period, wastage rates ranged from 1.4% to 66%, depending on the programme. Disciplines such as medicine, dentistry, and agricultural sciences recorded comparatively lower wastage rates, whereas engineering, physical sciences, and education exhibited significantly higher levels of wastage.

These findings suggest that undergraduate educational wastage at the University of Benin was considerably high and varied by programme, academic level, and gender. Although this data reflects past trends, it remains unclear whether the current situation has improved or worsened. Therefore, it is essential to assess the present state of educational wastage in the institution. Students who exceed the expected duration of their programmes exert additional pressure on already constrained educational resources, such as teaching materials, laboratory equipment, and administrative services.

Statement of the Problem

A major challenge confronting tertiary education in Nigeria is the inability of a substantial number of students to graduate within the stipulated timeframe—a situation that carries considerable social, economic, and private cost implications. At the University of Benin, Benin City, institutional records indicate that at the conclusion of each academic session, some students are unable to progress to the next academic level as expected. These students either carry over courses to the next session, are placed on academic probation due to poor performance, or withdraw from the institution before completing their programmes.

Data obtained from the Academic Planning Unit of the University of Benin for the 2013/2014 academic session reveal that, out of a total undergraduate enrolment of 40,445 students across all programmes, 55% had at least one carryover course. Additionally, 3.4% of the undergraduate population was placed on probation, while 2% withdrew from the institution. A gender-based breakdown shows that of the total male and female enrolments (20,939 and 19,506 respectively), 44.8% of male students and 45.2% of female students had at least one carryover

course. Probation rates were 3.9% for males and 3.0% for females, while withdrawal rates stood at 2.7% and 1.4%, respectively.

Educational wastage undermines the internal efficiency of the university and poses a significant management challenge. Course carryovers, academic probation, and student withdrawals place additional strain on limited institutional resources and reduce the efficacy of government investments in tertiary education. These inefficiencies are deeply concerning within any academic institution, including the University of Benin, and warrant urgent attention from stakeholders such as the Vice-Chancellor, Deans, and Heads of Departments.

A key objective of effective university administration is to enhance internal efficiency by reducing or eliminating educational wastage. Achieving this goal requires deliberate interventions informed by reliable, up-to-date data on the incidence and distribution of wastage across programmes and departments. As the principle famously articulated by Lord Marcus Garvey, cited in UNESCO (2017), states, "If you can't measure it, you can't improve it." This study is therefore motivated by the need to systematically assess the current state of educational wastage among undergraduate students at the University of Benin, Benin City.

Research Questions

The following research questions were raised to guide the study:

1. What is the educational wastage rate among undergraduates in the University of Benin, Benin City?
2. Does educational wastage vary by sex in the University of Benin, Benin City?
3. Does educational wastage vary by academic level in the University of Benin, Benin City?

Hypotheses

Research Question 1 was answered, while Research Questions 2 and 3 were formulated into hypotheses tested at a 0.05 level of significance:

1. There is no significant difference in educational wastage based on students' sex.
2. There is no significant difference in educational wastage based on students' academic level.

Methodology

The study adopted a descriptive research design, which was deemed appropriate as it enabled the researcher to objectively assess patterns of educational wastage within a defined cohort. The target population consisted of all 6,531 undergraduate students admitted into the University of Benin during the 2014/2015 academic session. From this population, a sample of 781 students (approximately 12%) was purposively selected from eight professional academic programmes—Accounting, Engineering, Medicine and Surgery, Nursing, Optometry, Pharmacy, Dentistry, and Law. The purposive sampling technique was chosen based on institutional admission records identifying these programmes as the most highly subscribed during the period under review. This ensured representation from disciplines with historically high enrolment and dropout rates, thereby allowing a focused analysis of educational wastage.

The instrument for data collection was a researcher-developed checklist designed to track students' academic progression from entry to graduation. The checklist included variables such as student ID, programme of study, academic level progression, number of repetitions, withdrawal or dropout status, and graduation outcome. The instrument was validated by three experts in Educational Planning. Given its nature, no reliability testing was conducted. Academic performance data were obtained from Senate-approved results and used to evaluate students' progression trends and occurrences of wastage. Data collected were analyzed using descriptive statistics such as frequencies and percentages, alongside the Crude-Cohort Wastage Rate (C-CWR) formula.

Wastage rate (C-CWR) $= \frac{Ei-Ef}{Ei} \times 100$

Ei = enrolment in the initial year

Ef = enrolment in the initial year

To test the hypotheses, the independent samples t-test was used for Hypothesis 1, while Analysis of Variance (ANOVA) was employed for Hypothesis 2, both tested at the 0.05 significance level.

Results

Table 1

Flow of Students in the 2014/2015 Cohort

Students' Flow	Enrolment in Initial Year	Enrolment in Final Year	Percentage Rate
	781	308	61.0

Source: Researcher's computation from students' flow data (session by session)

Table 1 shows the educational wastage rate among undergraduates in the University of Benin, Benin City, was 61%. However, this figure may slightly overstate the true wastage rate, as it does not account for delayed graduations due to academic probation, interruptions, or other valid extensions. Of the 473 students who did not reach the final year, institutional records did not specify the causes of attrition, thereby limiting the interpretive power of the crude estimate.

Table 2

Independent Sample t-Test Analysis of Educational Wastage by Sex

Sex	**N**	**Mean**	**SD**	**t**	**df**	**p-value**	**Decision**
Male	558	64	0.83	98.73	780	0.000	Significant
Female	223	57	0.92				

Table 2 shows a t value of 98.73 with a corresponding p-value of 0.000. This implies that the null hypothesis was rejected, indicating a significant difference in the educational wastage based on students' sex in favour of the male student. This suggests that male students exhibited a significantly higher wastage rate than female students.

Table 3

Descriptive Statistics of Educational Wastage Across Academic Levels

Level	N	Mean Wastage (%)	SD
100	781	29	0.80
200	652	25	0.84
300	591	34	0.79
400	488	44	0.81
500	374	59	0.76
600	155	45	0.77

Table 4

ANOVA of Educational Wastage Across Academic Levels

Source of Variation	SS	df	MS	F	Sig.	Remark
Between Groups	36.89	5	7.38	11.46	0.000	Significant
Within Groups	1953.04	3035	0.64			
Total	1989.93	3040				

The results indicate that the *p*-value associated with the ANOVA statistic was less than 0.05. Therefore, the null hypothesis was rejected, and it was concluded that there is a significant difference in educational wastage across academic levels.

Discussion of Findings

The findings of this study revealed that the educational wastage rate among undergraduates at the University of Benin was 61%, which is considerably high. Within Nigeria's tertiary education system, there is no officially established benchmark for acceptable wastage rates. Although the National Universities Commission (NUC) does not specify such limits, wastage rates above 40% are generally regarded as critical inefficiencies that demand urgent intervention. According to World Bank and UNESCO benchmarks, tertiary institutions in developing countries should ideally maintain wastage rates below 15% (UNESCO, 2017).

The result of this study aligns with the findings of Agboola and Adeyemi (2013), who reported average wastage rates of 20–35% in Nigerian universities, with higher rates recorded in government-owned institutions. Similarly, Devi (2017) documented a 58% wastage rate in the Mexican education system, while UNESCO (2017) reported a comparatively lower 17% wastage rate across Sub-Saharan African countries. The disparity between the present study and UNESCO's report may be attributed to methodological differences; while UNESCO measured wastage primarily in terms of dropout rates, the present study employed the Crude-Cohort Wastage Rate (C-CWR), which accounts for both dropouts and repetitions.

The findings further revealed significant differences in educational wastage based on students' sex. The higher wastage rate observed among male students suggests the influence of systemic and socio-economic factors beyond academic ability. Many male undergraduates, particularly those from low-income families, experience economic pressures that compel them to seek employment or engage in informal entrepreneurial activities, leading to academic disengagement or eventual withdrawal. Conversely, female students often benefit from relatively stable financial support from families or sponsors and may also receive institutional backing through counselling and mentorship initiatives that focus on female empowerment. This observation supports the UNESCO (2017) report, which indicated that male students accounted for 53.4% of school dropouts in Sub-Saharan Africa, compared to 46.6% among females. Likewise, Rumberger (2008) observed that dropout rates were generally higher among males than females in various educational systems.

Furthermore, the study established significant variation in educational wastage across academic levels. The rate of wastage was lowest at the 100 and 200 levels but increased progressively through the 300–500 levels. This trend reflects the escalating academic workload, increased course complexity, and greater level of independence required as students advance in their studies. At higher levels, challenges such as project supervision, fieldwork, and financial constraints become more pronounced, often leading to academic attrition. Arinze (2019) corroborated this pattern, noting a gradual increase in repetition rates as students' progress to higher levels of study. In contrast, Levy et al. (2018) found that dropout rates were highest in the first year of tertiary education but tended to decline in subsequent years. Despite these variations, UNESCO (2017) emphasized that educational wastage remains a persistent and multifaceted challenge across all levels of tertiary education in developing countries such as Nigeria.

Conclusion

This study assessed the educational wastage rate among undergraduates at the University of Benin, Benin City, and established that educational wastage exists at a level that warrants urgent institutional attention. The findings revealed that the overall wastage rate stood at approximately 61%, signifying a substantial loss of human and

material resources within the university system. Based on these findings, the study concludes that the current level of wastage poses serious implications for educational planning, institutional efficiency, and national development. The results suggest that a considerable proportion of students either fail to progress as expected, withdraw before completion, or repeat academic levels—conditions that compromise the efficient utilization of available educational resources. Therefore, there is a need for a comprehensive review of university management practices to ensure the establishment of robust student support mechanisms, academic advising systems, and efficient monitoring frameworks. Such efforts will help reduce repetition, probation, and withdrawal rates, and enhance academic performance and institutional productivity.

Recommendations

The following recommendations were made based on the findings of the study:

1. University administrators should devote increased attention to identifying and addressing learning gaps among students.
2. University counselling units should design and implement targeted programmes that recognize gender disparities in educational wastage.
3. The university should organize comprehensive sensitization and awareness campaigns at the beginning and midpoint of each academic session.
4. Educational stakeholders should place greater emphasis on academic engagement and student retention rather than merely on enrolment figures.

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