

Mitigating students' carryover pressure on academic achievement with digital curriculum reforms and counselling strategies

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Abstract

The study investigated the effect of carryover pressure courses on the academic performance and mental well-being of students in their final year in public universities in Delta State, Nigeria. It also assessed the efficacy of curriculum digitization and counselling services as institution-based interventions. A mixed-method research approach was used. The sample size was 5,324 respondents selected from four public universities and seven faculties. Quantitative data were analyzed using descriptive statistics, Pearson correlation, t-test, regression analysis, ANOVA and Chi-square statistics while the qualitative data were subjected to thematic analysis. There was a statistically significant negative correlation between carryover pressure courses and academic performance of students ($r = -0.512$, $p < 0.05$). Also, there was increased psychological problems like stress, anxiety and self-doubt about academics. The regression analysis reported that counseling significantly improved students' coping on academic performance ($\beta = 0.416$, $R^2 = 0.372$, $p < 0.05$) while the ANOVA test proved that curriculum digitization significantly decreased academic load related to carryover pressures among faculties ($F = 6.89$, $p < 0.05$). The results from chi-square test showed a significant change in attitude towards digital learning platforms and counseling service among students ($\chi^2=42.17$, $p<0.05$). Nevertheless, the result from one-sample t-test showed the deficiency of faculty experts in curriculum digitalization and counseling service in the university. The study suggests curriculum digital reforms and counseling services to prevent the detrimental academic and psychological pressures of carryover. The study offers empirical implications for Nigerian universities curriculum and counseling system reforms.

1. Introduction

Academic performance is still an essential criterion of students' educational achievements, employability and preparedness for lifelong learning. In higher institutions of learning, students' success in completing academic programs within the timeframe is considered a criterion of institutional effectiveness and personal academic success (York et al., 2015; Tinto, 2017). Yet, numerous universities across the globe still face problems linked with course failures, delayed graduation, academic disengagement and deterioration of students' psychological well-being. Of all the mentioned challenges, pressure courses are courses which were not completed successfully before and require re-taking until a student's graduation are becoming a serious challenge due to additional more burden to students' academic work, increase their length of studying and have negative effects on academic and psychological performance (Thomas, 2020; Kahu & Nelson, 2018). These challenges are common all over the world but are particularly evident in developing countries including Nigeria where due to numerous institutional constraints like overcrowded classrooms, lack of academic assistance systems and inflexibility of curricula structure, the challenges of students' academic performance are increased (Obiageli & Chukwuma, 2020; Okafor & Nwankwo, 2021).

The fast-paced development of digital technologies has revolutionized the way curriculum, teaching and students' support services are designed in various higher institutions of learning around the world. Digital curriculum innovations have become crucial in enhancing learning flexibility, engaging students and helping learners who experience various learning difficulties. The incorporation of Learning Management Systems (LMS) which include Moodle, Google Classroom, Canvas and Blackboard have assisted universities to deliver personalized learning, asynchronous teaching, continual assessments and accessible learning opportunities regardless of the geographical location of both teachers and learners (Bond et al., 2020; Martin et al., 2022). Research reveals that digital learning platforms enhance learner autonomy, academic participation and retention because they allow students to review learning materials at their convenience while receiving continuous instructional assistance (Hodges et al., 2020; Henderson et al., 2017). In the Nigerian for instance, higher education environment, attempts to introduce digital innovations within curriculum implementation have also produced promising results in terms of the increased engagement of students and remedial learning, albeit with uneven success among different universities (Olatunde, 2022).

Apart from supporting instruction delivery, digital technologies have played an important role in extending the reach of academic counselling and psychological support services. Students who are facing academic challenges often mention their feelings of stress, anxiety, fear of delay in graduation, lack of self-confidence and social isolation which negatively impact their academic resilience and overall wellbeing (Beiter et al., 2015; Lipson et al., 2022). As a result, digital counselling services like virtual counseling sessions, mobile counseling apps, peer-to-peer counseling through the web and digital mental health services have been employed more and more in order to provide psychological support (Richards et al., 2020; Lattie et al., 2022). Such methods promote the effectiveness of traditional face-to-face counseling by making it more accessible, flexible and anonymous so that students can receive professional help without being stigmatized (Xiao et al., 2017). Similarly, there is a trend towards using digital counselling services at Nigerian universities in order to assist struggling students.

Furthermore, the increasing focus on digitalization is also influencing universities to design curriculum frameworks that will allow for flexibility and inclusivity. The modern curriculum framework reforms have increasingly taken up blended learning, modularization of curriculum, competency-based evaluation, feedback mechanism and flexible credit recovery systems to ensure that the students can juggle their current studies with the retake of certain courses (OECD, 2021; Bozkurt et al., 2020). These ensure that there is flexibility in terms of the students' learning speed without compromising on the standards and improving the rate of retention of the students. The flexible curriculum frameworks are known to improve academic resilience, motivation and improve graduation rates as it helps to remove unnecessary academic obstacles that would make the learner repeat courses but do not increase their duration in school (Martin et al., 2022; Hodges et al., 2020). However, the application of flexible curriculum reforms in Nigeria remains inconsistent among universities owing to infrastructural challenges, lack of digital facilities and policy limitations to incorporate technology in curriculum delivery.

The psychological effects associated with the courses undergoing carryovers have been researched increasingly due to the fact that the consequences of academic failures are not limited to grades but affect emotions and mental well-being as well. To be specific, the students enrolled in repeat classes often suffer from high academic stress, anxiety, low self-esteem, depression, burnout and low motivation for studies which negatively affect learning performance (Beiter et al., 2015; Stallman, 2010; Lipson et al., 2022). Moreover, students who must undergo multiple carryover courses are often exposed to social stigma and self-consciousness, preventing them from participating in class and engaging in educational activities (Thomas, 2020). It is worth noting that similar issues have been observed among the students at Nigerian universities whose performance was outstanding, causing the delays in obtaining degrees and increased academic stress (Eze & Okonkwo, 2022).

Academic counseling is known to be one of the most productive strategies for helping struggling students within an institution. better counseling programs help students create personalized learning plans, improve time management skills, coping mechanisms and self-efficacy which increases their chances of academic success (Carey et al., 2017; Regehr et al., 2013). Notwithstanding, counseling is known to play an important role in decreasing the level of stress, building up resilience and promoting desirable academic behavior of university students (Watkins et al., 2020). Despite the fact that counseling programs have become one of the key elements of the process of student assistance, their application in the context of most public universities in Nigeria has been hindered by the lack of specialists, awareness and investment on the part of institutions (Ogunleye & Adebisi, 2020).

Although, there have been many applications of information communication technologies in higher institutions of learning, some public universities still face institutional challenges that impede effective implementation of digital curriculum reforms and counselling approaches. Insufficient ICT infrastructure, overcrowded lecture theatres, inconsistent academic counsellors, lack of funding, low digital literacy of university staff and rigid curricula often prevent universities from delivering necessary services to students with carryover courses (Henderson et al., 2017; OECD, 2021). Institutional constraints of such kind are observed in Delta State where many final-year students fail to combine repeated courses into their academic routine which leads to delayed graduation and poor academic performance (Oladimeji & Balogun, 2021). Thus, there is a pressing need for the development of combined institutional approach that includes digital curriculum reforms and academic counselling of students to increase their academic resilience and psychological well-being and contribute to their successful graduation. This is the context in which the present research aims at exploring the role of digital curriculum reforms and counselling strategies in mitigating the impact of carryover courses on the academic achievement of final-year students in public universities in Delta State, Nigeria.

2. Literature Review

2.1. Reform of Digital Curricula

Reforms in digital curricula have been identified as some of the most important innovations in higher institution of learning since they have brought changes in the way curriculum planning, instructional delivery, assessment and support services are delivered. Reform of digital curricula is concerned with the application of digital technologies in the curriculum process in order to improve learning flexibility, accessibility, collaboration and learning outcomes (Bond et al., 2020; Martin et al., 2022). In contrast to the utilization of traditional face-to-face instructional delivery methods, the universities are increasingly turning to technology-based learning environments which provide learners with several ways through which they can access learning materials, take assessments and interact with lecturers irrespective of time and geographic locations. This kind of flexibility is particularly useful for learners who have encountered academic challenges like repeating failed or carryover subjects.

In around the world, digitization of curricula reforms has emerged as essential elements of higher education reform due to their proven ability to increase student engagement, retention and academic achievement. Current curricula reforms adopt learner-centred approaches involving the use of blended learning, flipped classroom methods, adaptive learning technologies, learning analytics and competency-based assessment systems to cater for various student needs (Bozkurt et al., 2020; OECD, 2021). Digitization of curricula reforms make it possible for institutions of higher learning to offer personalized learning experience via continuous assessment, instant feedback and flexible scheduling, thus eliminating some of the factors associated with poor academic results and late graduations. Martin et al. (2022) asserted that educational institutions that adopt curriculum digitization reforms always report increased academic engagement, motivation and learning outcomes among their numerous students because of the interactions facilitated by digitization of curricula technology.

Curriculum digitization reform is increasingly gaining institutional focus in the Nigerian higher institutions of learning system as universities look for sustainable ways of overcoming academic challenges. Despite challenges related to limited infrastructure and insufficient funds, some universities in Nigeria have adopted blended learning programs, online remedial courses, virtual classes and electronic assessment platform to provide academic assistance to their students (Ogunleye & Adebisi, 2020). Though these innovations have facilitated learning continuity and increased educational opportunities for students, many public universities continue to face challenges related to rigid curriculums, inadequate technological facilities and poor adoption of digital learning policies. As a result, students with carryover courses find it very challenging to cope with the repetition of courses and academic responsibilities at the same time. Umeh and Eke (2021) noted that institutional rigidity leads to longer time to complete degrees and student dropout. Thus, reforms that include flexible curricula credits and transfers, online academic assistance, modular pathways and digital assessments will be needed to ensure academic success and inclusivity of higher education.

2.2. Curriculum Flexibility and Learner Autonomy through ICT

Information and Communication Technology has emerged as a crucial component for curriculum flexibility in modern higher education. ICT-assisted curriculum design encourages learner autonomy since it allows students to control their own pace, schedule and sequence of learning without becoming detached from instructional resources and university services (Hodges et al., 2020; Henderson et al., 2017). With the help of Learning Management Systems such as Moodle, Blackboard, Canvas and Google Classroom, universities ensure the availability of lectures, assignments, discussion boards, demonstrations and assessment opportunities to students at all times.

The research reports that the ICT-supported flexible learning environment positively affects the students' independence, self-regulatory behaviors and problem-solving skills. According to Henderson et al. (2017), students who take part in the digitally supported learning environments are more academically engaged due to the fact that they have an opportunity to review the instructional material, get instant feedback and collaborate with other students independently from time. Likewise, the research carried out by Bond et al. (2020) reveals that the learning satisfaction and academic success of the students is considerably improved within the flexible digital learning environment by virtue of their personalization of the learning experience based on individual learning needs.

For the students with carryover courses, ICT-supported curriculum digitization flexibility provides considerable academic benefits. The modular courses, asynchronous lectures, online tutoring and digital credit recovery programs allow the students to take the repeated courses together with the ongoing academic work without facing the risk of academic overload.

However, despite the benefits that have been highlighted, the adoption of ICT-based curriculum digitization flexibility faces certain difficulties within many Nigerian universities. Some of the obstacles include poor internet connection, lack of ICT facilities, poor electricity supply, inadequate financial support from the institutions and limited computer skills among the lecturers. As such, the utilization of technology for higher grade learning outcomes becomes difficult. It is necessary to note that these obstacles hinder students' successes on carryover courses from taking advantage of curriculum digitization innovations.

2.3. Global Perceptions of Digital Curricular Innovations

On an international level, digital curricular innovations have become an important strategy for improving the quality of education and the results in terms of student retention and completion for the majority of universities. The use of digital learning environments in North American, European, Asian and Australian higher education institutions is now commonplace and they help to assist students who are falling behind, failing some courses or whose studies are interrupted (OECD, 2021). Instead of treating the failing courses as an indicator of poor academic performance, universities have introduced curricula flexible digitization strategies, which encourage academic recovery through individualized learning pathways and constant learner support.

United States (US) universities have introduced numerous online credit recovery systems, adaptive learning and competency-based education programs which let students retake failed courses without delaying their graduation timeframe. Such solutions have also become popular among United Kingdoms (UK) and Australian universities and have been implemented within blended learning environments that include virtual laboratories, online tutorials, digital assessment platforms and learning analytics in order to identify academically at-risk students and intervene in a timely manner (Martin et al., 2022; Bond et al., 2020).

Digitization of curricula innovations globally since the COVID-19 pandemic era has seen more universities curricula delivery flexible learning approaches with increased acknowledgment of technology as a significant part of curriculum implementation (Bozkurt et al., 2020; Hodges et al., 2020). The experience gained from these international approaches shows that successful digital transformation entails not only the deployment of digital technology but also substantial investment in technological infrastructure, leadership, academics' capacity building, learner support services and curriculum redesign.

In Nigeria, institutions of higher learning have begun to embrace aspects of these international practices by investing in Learning Management Systems, mobile learning applications, virtual classrooms and digital academic support services. Olatunde (2022) contended that increasing the institution's ICT infrastructure and the use of curriculum digitization technologies in the delivery would go a long way in improving academic support to learners facing carryover problems. But such efforts require contextualization taking into consideration issues of institutional capacity, technological readiness, funding and learners' digitization capabilities. It therefore means that digitization of curriculum innovation entails more than just technological advancement but an institution-wide approach towards the improvement of learning opportunities, academic resilience and timely graduation of academic-challenged students.

2.4. Counselling Role in Solving Learning and Emotional Difficulties

Academic counselling is considered as one of the necessary elements of student services in universities since it deals with academic and psychosocial issues affecting the process of learning and teaching of students. For instance, students who have faced academic problems, particularly those dealing with repeat or carry-over courses, face greater stress, anxiety, lack of confidence and uncertainties related to their graduation from university. Academic counselling allows students to learn how to cope with difficulties, develop time management and study habits to make proper informed decisions and build up academic self-efficacy which helps to increase resilience and stay involved in education (Regehr et al., 2013; Carey et al., 2017). Moreover, studies indicate that counselling plays vital role in psychological health improvement of students since it helps them reduce emotional distress and change behaviour positively (Watkins et al., 2020; Lipson et al., 2022).

The international literature on the subject reports that counseling services have a positive effect on students' adaptation and retention rates. In recent years, university counseling centers have begun to use holistic models of counseling programs that combine academic counseling, mental health counseling, career planning and stress management programs for the purpose of dealing with students who experience problems with academic success (Eisenberg et al., 2013; Xiao et al., 2017). Counseling programs that include elements of cognitive restructuring, goal setting and self-regulated learning have been found to increase the students' level of confidence in coping with challenging academic tasks and decrease the rate of their academic withdrawal (Regehr et al., 2013).

In the Nigerian university education system, counseling is an essential and underutilized institution. While most universities have counselling psychology departments, the performance of such services is obstructed by lack of adequate staff members, poor funding, ignorance of the students and misunderstanding of counseling services (Oladimeji & Balogun, 2021). Most students, therefore, wait until their academic problems have become

too difficult before seeking professional help. In a study carried out by Nwosu and Ekwueme (2019), academic counseling helped to increase the level of resiliency, good study habits and academic motivation through individual academic planning and stress management. According to Eze and Okonkwo (2022), students that were actively involved in counseling programs reported increased academic self-efficacy and enhanced academic performance compared to the ones that did not take advantage of counseling services. In a similar way, Umeh and Eke (2021) recommended the decentralization of the counseling service to faculty and departmental levels to make counseling more accessible and effective in Nigerian universities.

2.5. Link between Counselling and Academic Success in the Empirical Literature

Empirical studies have always indicated a positive correlation between counselling programs and the academic success of students in different academic settings. Research from Europe, North America and Asia reveals that students who make good use of academic counseling services tend to perform better in terms of having high grade point average, strong engagement, high motivation levels and less likelihood of dropping out compared to those who do not make much use of counseling (Carey et al., 2017; Watkins et al., 2020). Counseling programs that give academic guidance along with psychological counseling have been found particularly helpful for academically failing students.

Counselling, stress management and resilience training have also revealed to be effective interventions for improving students' academic performance. According to Regehr et al. (2013), these psychological interventions have led to a significant reduction in stress and anxiety levels along with the improvement in students' engagement, self-control and academic performance. In addition, according to Lipson et al. (2022), universities which have invested in psychological and mental health support and services have noted enhanced students' persistence, graduation and academic success rates.

Findings from Nigeria revealed a similar pattern of results with some local specific challenges. Obiageli and Chukwuma (2020) found that students taking multiple carryover courses had problems with graduation and academic performance due to psychological stress and high volume of academic work. Okafor and Nwankwo (2021) found out that students with academic arrears faced high level of stress and low level of engagement in their course works. Also, Adebayo and Oladipo (2019) found that students who regularly attended psychological counselling sessions attained significantly better GPA, academic self-confidence and psychological well-being than their peers without these services.

2.6. ICT as a Motivating Factor for Students' Academic Success and Support Networks

ICT has experienced a remarkable development in recent years, thus contributing greatly to higher institutions of learning with new ways of helping those students who face challenges in their studies. Technologies enable a flexible, inclusive and learner-centred learning process where students have the opportunity to access course content, submit assignments, interact with lecturers and engage in collaborative learning irrespective of time and location (Bond et al., 2020; Martin et al., 2022). Learning Management Systems like Moodle, Google Classroom, Blackboard and Canvas have become essential means of ensuring academic continuity especially for those students who study retaken courses and at the same time study ongoing courses.

Learning environments supported by ICT are very essential for academic recovery in that they stimulate students to go through previously failed course material via lecture recordings, online tutoring, assessment, discussion boards and personalized learning materials. According to Henderson et al., (2017), ICT-supported learning environments promote more engagement on the side of learners due to their constant availability of learning material and instructional feedback. Likewise, Bozkurt et al. (2020) suggest that digitization and flexible learning environments enhance academic resilience in students by removing any timetable clashes and allowing learners to learn at different paces. All these novelties are helpful for carryover students in that they assist in removing academic disruptions connected to institutional timetables.

The use of ICT in Nigerian higher education has increasingly changed the way instruction is delivered and the flexible learning models. It is important to note that ICT-based academic support systems have a significant impact on academic recovery, remedial learning and student motivation as emphasized by Olatunde (2022). In addition to formal classroom education, digital tools and social media are used to analyse the dynamics of the current society (Agoha et al., 2026, 2024) while also being utilised in innovative theatrical paradigms like Theatre for Development to educate students on pressing national issues (Ilukwe & Ume, 2026). In addition, the field of digital culture has come into contact with the visual and symbolic forms of communication such as traditional performance art, expressions of culture and identity, and critical perspectives on social rights and the representation of child welfare in contemporary media (Utoh-Ezeajugh & Ume, 2025; Ume & Akas, 2021; Okeke & Akunne, 2023). However, ongoing and systematic issues such as infrastructure inefficiencies, financial restrictions, unreliable internet access and digital literacy among teachers and learners remain to affect the

effectiveness of academic and developmental programmed using ICTs. Addressing these core challenges is critical for achieving better digital learning environments, institutional processes, and sustainable educational impacts in Nigeria's universities.

2.7. Strategies for Digital Counselling for Maintaining Emotional and Psychological Stability

Digital counselling has been developed as one of the curriculum reforms in the field of counselling services which can be employed by the universities to help their students access their psychological needs in a timely manner using digital technology. Online counseling platforms, mobile counseling apps, virtual counseling, telepsychology services and digital mental health platforms have been greatly popular among university students dealing with such challenges as stress, anxiety, depression and academic burnout (Richards et al., 2020; Lattie et al., 2022). In contrast to face-to-face counseling, digital counseling offers more convenience and anonymity.

According to research, digital therapy initiatives can help reduce the impact of psychological distress and enhance emotional regulation, coping mechanisms and academic performance of university students. Richards et al. (2020) argue that the employment of technology-improved counselling helped increase the availability of mental health services for students due to technology eliminated several of the barriers connected to traditional counselling. Likewise, Lattie et al. (2022) claim that digital mental health interventions promote the improvement of psychological well-being, emotional resiliency and academic endurance of higher education students.

In the Nigerian context, digital counselling represents a relatively new aspect of institutional practice. According to Olowokere and Afolayan (2019), the utilization of technology-supported counselling helps students gain more access to professional counselling since such approach remove geographical, temporal and confidentiality obstacles and allows universities to offer students with additional counselling services despite insufficient human resources. At the same time, further development of digital infrastructure in universities makes the use of online counselling in conjunction with digital curriculum reforms a potentially effective institutional approach towards reducing the negative impact of carryover pressure courses on academic performance and psychological well-being. The integration of online academic and psychological assistance can help students develop resilience, maintain psychological stability and successfully complete their programs.

2.8. Conceptual Framework

The study is based on an integrative multi-dimensional conceptual framework which involves Curriculum Digital Reforms and Counseling Strategies acting as intervening measures between Carryover Pressure Courses (CPC) and Academic Performance of Students (APS) and their Psychological Well-being. The framework is based on Vygotsky's Sociocultural Theory and Lazarus and Folkman's Transactional Model of Stress and Coping that together account for how social, psychological and teaching reforms help reduce stress and enhance performance. Transactional Model of Lazarus & Folkman (1984) of Stress and Coping accounts for the process through which individuals appraise and cope with stress. Counseling strategies like digital academic counseling, stress management and career planning act as coping strategies to enable the students to reassess their situation positively and cope despite the challenge of carryover courses. Figure 1 shown a from transactional model of stress and coping.

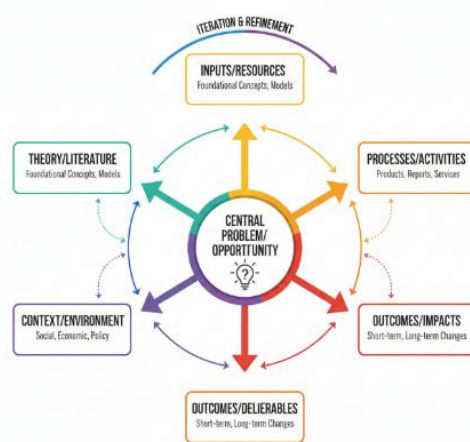


Figure 1. From Transactional Model of Stress and Coping by Lazarus & Folkman (1984), via Gemini AI

However, the sociocultural theory of Vygotsky advocates the view that digital platforms and collaborative learning serve as cultural platforms for scaffolding and learning. As per the sociocultural theory of Vygotsky (1978), social interaction and mediation of learning via cultural platforms is expedient. In this context, the digital curriculum platforms such as Google Classroom, Moodle, Learning Management System serve as cultural platforms that enhance learning even outside the conventional environment. Application of scaffolding and peer interaction, the students who have carryover pressure can get personalized academic help. Figure 2 shown a theoretical framework from sociocultural theory of Vygotsky (1978).

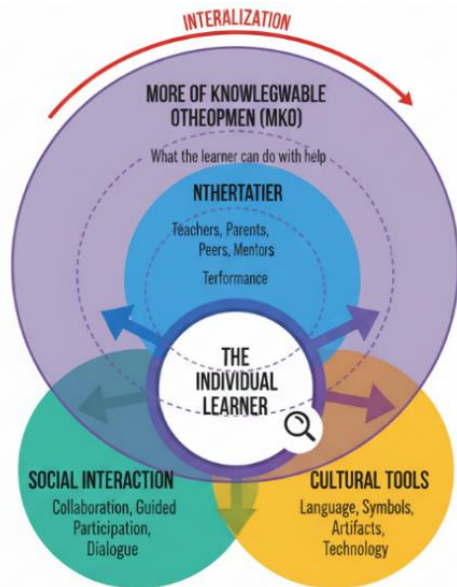


Figure 2. Theoretical Framework from Sociocultural Theory of Vygotsky (1978) via Gemini AI

3. Method

3.1. Research Design

In this study, a mixed-method research design is employed by blending the quantitative and qualitative methods to examine the impacts of the carryover courses on the academic performance and psychological well-being of the graduating students in public universities in Delta State, Nigeria. Two groups are formed in this study: the experimental group where there were students with carryover courses that were subjected to the treatment while the control group were students without carryover courses that did not undergo any treatment. Table 1 shown a illustrates the research design.

Note: O1 – pre-test of the experimental group, O2 – post-test of experimental group, O3 – pre-test of control group & O4 – post-test of the control group.

Table 1. Illustrates the research design

Groups	Research Design		
Experimental Group	O1	X	O2
Control Group	O3	Y	O4

3.2. Research Instrument

In view of the nature of the study and the goals of examining the impact of carryover courses, the impact of ICT-based counseling and curriculum adaptation was the best suitable research instrument involving the use of a structured questionnaire alongside interview guides in collecting qualitative data.

3.2.1. Quantitative Instrument

This study involved the utilization of a structured questionnaire that consisted of Section A: Demographic Information; this collected information about the students' institution, faculty, department, academic year and level of study. Section B: Core Study Variables being Measured: This section collected data on the academic impact of carryover courses, students' experience with ICT-based counseling (accessibility and usefulness of such services), perceptions regarding the flexibility of the curriculum and the digital technologies being used (Google Classroom for instance) and change in attitude and emotional responses pre and post intervention.

3.2.2. Qualitative Instruments

In order to complement the quantitative data, in-depth interviews were conducted with: 50 students (carryovers), 20 lecturers, 10 academic counselors. Focus group discussions were done among students to collect collective views, coping techniques and recommendations. These qualitative instruments offered detailed contextual information used in the thematic analysis.

3.2.3. Validity and Reliability Tests

Content validity was assured through evaluation of the questionnaire by experts in ICT, curriculum studies, instructional technologist and counseling psychology to confirm whether the questionnaire is measuring what it is supposed to measure. The pilot study involved the administration of the questionnaire to a sample of 50 subjects outside designated area of studies in order to improve the questionnaire via their feedback mechanisms. The reliability of the questionnaire was established by employing Cronbach's Alpha reliability coefficient which is used to measure internal consistency. A reliability coefficient of 0.71 was achieved which indicates that the instrument is reliable. In addition, test-retest technique was done whereby the questionnaire was administered to a sample of respondents twice in two weeks. (RUN AI PRE-TEST AND POST-TEST TO GET STATISTICAL RECORD).

3.3. Research Population and Sample

The research population comprises 9,534 final year students randomly selected from seven faculties of four public universities located in Delta State, Nigeria. The target population includes students with and without carryover pressure courses and faculty members and academic counselors. These are: (i) Delta State University (DELSU), Abraka; (ii) Dennis Osadebe University (DOU), Asaba; (iii) University of Delta (UNIDEL), Agbor and (iv) Southern Delta University (SDU), Ozoro. Stratified random sampling method was employed in order to get a sample size of 5,324 respondents. This sample included: 3,000 students with carryover pressure courses (experimental group), 1,500 students without carryover pressures (control group), 500 faculty members (institutional perspective); and 324 academic advisors (intervention implementation and feedback).

4. Results and Discussion

4.1. Results

Table 2 below presents the finding of the Pearson Product Moment Correlation test aimed at establishing the relationship between the number of carryover pressure courses and the academic performance (GPA) of final year students. It aims to establish how carryover pressure courses affect the academic performance of final year students in public universities in Delta State. The Pearson Product Moment Correlation test showed a statistically significant negative relationship between carryover courses and academic performance of final year students in public universities in Delta State ($r = -0.512$, $p = 0.000$). Negative values indicate that the higher the number of carryover courses, the lower the academic performance. Hence, the more carryover courses the student has, the lower his/her academic performance during the time leading to his/her graduation. This can be attributed to many factors like low motivation levels, increased stress due to academic workloads and focus on both current and outstanding courses. The strong relationship indicates the negative influence of unresolved curriculum content on the academic performance of students.

Table 2. Relationship between Carryover Courses and Academic Performance (Pearson Correlation)

Variables	N	R	p-value	Decision
Carryover Courses Academic Performance	2024	-0.512	0.000	Significant at $p < 0.05$

Table 3 below reports the findings from the independent samples t-test performed to examine the effect of carryover courses on psychological well-being of the students. The test was meant to determine whether the carryover courses place too much pressure on the mental and emotional well-being of the students. From the independent samples t-test result, there was a significant difference in the psychological well-being of the students who had carryover courses from those who did not ($t = 13.83$, $p = 0.000$). Students with carryover courses had higher mean score ($M = 3.98$) of psychological distress such as anxiety, feeling of academic inadequacy, stress and self-doubt than their peers who did not have carryovers ($M = 3.21$). This means that the psychological pressures of academic failures or delays are not shared equally and students with outstanding courses suffer more.

Table 3. Psychological Effects of Carryover Courses (Independent Samples t-test)

Treatment Group	N	Mean	SD	t-value	p-value	Decision
With Carryover Courses	1220	3.98	0.62	13.83	0.000	Significant at $p < 0.05$
Without Carryover Courses	804	3.21	0.67			

Table 4 below presents the results from a multiple regression analysis that was conducted in order to measure the effects of academic counseling on the ability of students to cope with academic stress from carryover courses. The multiple regression analysis indicates that academic counseling has a significant effect on students' coping with the academic pressure from the carryover courses ($\beta = 0.416$, $t = 10.72$, $p < 0.05$). With a coefficient of determination of 0.372, it means that 37.2% of variance in academic achievement among students with carryover courses can be accounted for by the effectiveness of counseling. This means that institutions need to focus on investing in their guidance and counseling departments in order to ensure effective counseling among students. As a result, the claim in hypothesis H_{03} that academic counseling does not reduce the effects of carryover courses is rejected.

Table 4. Effectiveness of Academic Counseling (Multiple Regression Analysis)

Predictor Variable	β (Beta)	t-value	p-value	Decision
Academic Counseling	0.416	10.72	0.000	Significant at $p < 0.05$

$R^2 = 0.372$, $F(1, 2022) = 115.02$, $p = 0.000$

Table 5 below gives an analysis of a one-way ANOVA carried out to test the significance of variation in the influence of digital curriculum reforms in the mitigation of carryover pressures in seven faculties in consideration. This ANOVA test assist to analyze the effectiveness of the curriculum reforms in mitigating the challenge of carryover courses in different institutions. As seen from the result of the one-way ANOVA test, there is a statistically significant difference in the influence of digitization of curriculum reforms strategies in the seven faculties of public universities in Delta State on mitigating the challenges of carryover pressures ($F = 6.89$, $p = 0.000$). From this result, it reveals that certain faculties utilize effective curricular delivery methods compared to others in the form of flexible curriculum or credit allocation. In other faculties where there is continuous assessment, there are more chances for recovery compared to those with rigid curriculum delivery.

Table 5. Curriculum Adjustment Across Faculty Courses (One-Way ANOVA)

Source of Variation	SS	Df	MS	F-value	p-value	Decision
Between Groups	45.21	6	7.54	6.89	0.000	Significant at $p < 0.05$
Within Groups	193.12	2017	0.096			
Total	238.33	2023				

Table 6 below reports the output of a Chi-square test that examines the impact of students' carryover courses on their perceptions about the attitude of graduating students towards adoption of ICT platforms like Google Classroom, counseling services and curriculum adjustments programs. It evaluates the behavior and perception changes brought about by academic failures. The Chi-square test outcome ($\chi^2 = 42.17$, $df = 3$, $p < 0.05$) suggests that there is a statistically significant association between students' carryover status and their perceptions of attitude changes towards adoption of digital counseling and digital curriculum reforms programs. It shows that students who have carryover courses are significantly more willing to adopt digital modules like Google classroom, counseling services and curriculum modifications than students who do not have carryover courses. This reveals that carryover course experiences affect the perception of students towards academic supportive measures. Hence, hypothesis 5 (H_{05}) is rejected.

Table 6. Chi-Square Test on Perceived Attitudinal Change Towards Adoption of ICT, Counselling and Curriculum Adjustment in Public Universities in Delta State

Variables	X ² (Chi-square)	df	p-value	Decision
Carryover Status x attitude Change	42.17	3	0.000	Significant at $p < 0.05$

Table 7 below presents the results of a one-sample t-test carried out to find out whether the number of faculty experts in digital counseling and curriculum reforms is adequate in relation to the benchmark adequacy value. It tests the organizational readiness for the effective implementation of intervention strategies. As can be seen from the results of one-sample t-test, the mean ratings for the availability of ICT experts ($M = 2.71$), academic counselors ($M = 2.89$) and curriculum specialists ($M = 2.76$) are significantly lower than the benchmark value of 3.00 with the p-value being less than 0.05 in all cases. This suggests the statistically significant inadequacy in the availability of qualified faculty members in critical domains needed for the implementation of the proposed intervention.

Table 7. One-Sample t-Test on Adequacy of Faculty Experts in ICT, Counselling and Curriculum Adjustment

Faculty Expertise Area	N	Mean	SD	Test Value	t-value	p-value	Decision
ICT Experts	500	2.71	0.84	3.00	-6.15	0.000	Significant at p< 0.05
Academic Counsellors	500	2.89	0.90	3.00	-3.34	0.001	
Curriculum Specialists	500	2.76	0.88	3.00	-5.10	0.000	

Table 8 below presents a thematic analysis of the qualitative themes that were generated from students' perspectives of the influence of carryover courses on their academic performance.

Table 8. Thematic Analysis of Qualitative Responses on the Influence of Carryover pressure Courses on Students' Academic Performance

Theme/ Influence	Codes	Illustrative Quotes	Interpretation
Academic Setbacks from Carryovers.	Frustration, delays, GPA drop.	"Carryover courses always affect my GPA negatively. It's like a permanent stain on my transcript." – Student.	Carryover courses often hinder graduation progress and reduce students' confidence and final performance.
Emotional/psychological Impact.	Stress, shame, Isolation.	"I feel ashamed sitting in class with juniors. It makes me withdraw socially." – Student.	Students with carryovers experience emotional strain and social withdrawal, impacting motivation.
Faculty pressure and Curriculum rigidity.	Fixed curriculum, No flexibility.	"Some departments don't allow make-up classes or summer remediation. You just have to wait another year." – Lecturer.	Lack of flexible curriculum policies intensifies carryover issues, delaying students' academic recovery.
Coping through Counseling.	Guidance, Reassurance, Motivation.	"When I visited the counselor, I left with hope. She made me realize it's not the end of the road." – Student.	Counseling provides emotional and academic relief, guiding students to develop recovery strategies.

Table 9 below helps to understand the emotional and psychological burden faced by students due to carryover courses from their feedback. This table identifies the problems like anxiety, stigma and psychological burden faced by students who have taken repeated courses.

Table 9. Theme; Analysis of Psychological Impact of Carryover Courses

Theme/ Influence	Codes	Illustrative Quotes	Interpretation
Anxiety and Low Self-Esteem.	Fear of failure, self-doubt.	"Each time I see my name on the carryover list, I feel like I'm not good enough to graduate."	Carryovers reduce students' self-worth and increase anxiety levels.
Peer Judgment and Stigma.	Embarrassment, Shame.	"I avoid some course mates because I think they see me as unserious individual due to my carryovers."	The stigma leads to social isolation and emotional distress.
Mental Health strain.	Sleeplessness, depression.	"I couldn't sleep or focus during exams because I had too many outstanding courses to revise."	Academic overload from carryovers can cause burnout and mental fatigue.

Table 10 below reflects the qualitative information provided by the students and counselors about the advantages of academic counseling. The table reveals the involvement of counseling in academic planning and the importance of qualified professionals in this process.

Table 10. Thematic analysis on effectiveness of academic counselling

Theme/ Influence	Codes	Illustrative Quotes	Interpretation
Counseling for Academic Planning.	Time Management, Academic Strategy.	"The counselor helped me create a weekly timetable to manage both carryover and current courses."	Counseling enables better academic organization and time utilization.
Emotional Support from Counseling.	Encouragement & Empathy.	"Just having someone listen to me and not judge me gave me the strength to keep going."	Empathetic counseling creates a safe space for emotional healing and motivation.
Role of Trained Counselors.	Professionalism & Problem-solving.	"Unlike our lecturers, the counselor had training and understood how to help me academically."	Professionally trained counselors provide tailored and evidence-based counseling interventions.

Table 11 below identifies thematic issues in relation to the curricular adjustment strategies for carrying over students. It highlights thematic issues in relation to modular learning and bureaucracies among others.

Table 11. Thematic Analysis on Curriculum Adjustment as a Strategy

Theme/ Influence	Codes	Illustrative Quotes	Interpretation
Flexible Course Restructuring.	Modular Learning & Credit Sharing.	"Our department now allows students to take some carryovers online or during breaks." – Faculty head reports	Flexible curriculum structures help students recover lost credits efficiently.
Faculty-Specific Challenges.	Resistance to Change & Bureaucracy.	"In my faculty, changes takes place forever. By the time they act, the session is over." – Lecturer.	Institutional delays and resistance to curricular reforms obstruct meaningful change.
Curriculum Review for student needs.	Students' inclusion is relevant.	"Students should be part of curriculum review only if they know where the gaps really are." – Counselor says.	Involving students in curriculum reform enhances its responsiveness and effectiveness.

Table 12 provides thematic reflections on how the attitudes of the students changed due to carryovers. These include openness towards technology, acceptance of counseling and readiness to promote curriculum innovation.

Table 12. Thematic Reflections on Change in Attitudes

Theme	Codes	Illustrative Quotes	Interpretation
Openness to technology (ICT).	Google Classroom and Online Modules.	"With online modules, I can catch up on carryovers at my own pace – even during holidays."	Carryover students favor ICT tools for flexibility and self-paced learning.
Embracing Counselling Support.	Motivation, Guidance & Relief.	"Talking to a counselor helped me stay focused and less ashamed about my carryover."	Counseling is seen as a lifeline, especially for psychological relief and guidance.
Desire for Curriculum Reform.	Flexibility, Modular Learning.	"If courses were spaced or modular, carryovers wouldn't feel like a punishment."	Students want curriculum policies that allow retakes without heavy penalty.
Attitude Shift after Setback.	Awareness, Acceptance, Readiness.	"I didn't care about help until I had carryovers – now I see the need for support."	Experiencing carryovers triggers a positive shift toward accepting support systems.

Table 13 reflects stakeholders' views on institutional capability to address ICT, counseling and curriculum expertise. The table highlights the deficiency in staff, untapped potential of skilled personnel and requirement for continuous professional development.

Table 13. Thematic Analysis on Availability and Capability of Faculty Experts

Theme	Codes	Illustrative Quotes	Interpretation
Shortage of Trained ICT Personnel	Understaffing & Tech Inexperience	"Only a few of us know how to use Google Classroom effectively." – ICT Faculty reports	There is a clear gap in ICT expertise, hindering scalable e-learning deployment.
Limited Academic Counselors	Overload & Burnout	"One counselor handles over 200 students – that's unrealistic." – University Counselor 'says'	The counselor-student ratio is too high, leading to insufficient individualized support.
Curriculum Experts Underutilized	Lack of Collaboration & Red Tape	"We have people trained in curriculum but they're rarely involved in reviews." – Faculty reports	Available experts in curriculum exist but are sidelined in decision-making.
Call for Capacity Building	Workshops & Retraining	"The university should organize digital counseling seminar, workshop and conferences at least once a semester."	There's a consensus on the need for continuous professional development.

4.2. Discussion

The results from this study have given overwhelming evidence to support the idea that carryover pressure courses have a strong adverse effect on the academic performance and psychological wellbeing of final year students at public universities in Delta State. In the quantitative analysis, there was a statistically significant negative correlation between carryover pressure courses and academic performance ($r = -0.512$, $p < .001$), indicating that the more courses' students repeat, the lower their grade point average and they become less confident about their academics and at the same time suffer psychologically. Such findings agree with international studies that have revealed that uncompleted academic courses lead to cognitive overload, academic disengagement, emotional exhaustion and delay of programmed completion (Kahu & Nelson, 2018; Thomas, 2020; Lipson et al., 2022). There have also been similar findings in Nigeria where Obiageli and Chukwuma (2020) reported that students taking many carryover courses suffer from academic stress and

inefficiency in learning. The qualitative results agree with the above quantitative findings as evidenced by the following quote from a participant, "Carryover courses always affect my GPA negatively. It's like a permanent mark on my transcript."

Additionally, the study showed that academic counseling greatly enhances the academic performance of the students ($\beta = 0.416, p < .001$). As per the results of the regression analysis, students who received counseling services, particularly those receiving digitally enabled counseling services, achieved better emotional stability, academic confidence and motivation towards completion of their studies. This inference is also supported by the qualitative findings where one of the participants stated, "When I went to see the counselor, I left hopeful because she told me that it is not the end of the road." These results agree with other researches done internationally where counselling was found to improve the coping skills, resilience, academic self-efficacy and persistence among students through addressing their emotional and learning-related problems (Regehr et al., 2013; Carey et al., 2017; Watkins et al., 2020). Similarly, digitally enabled counseling services help overcome the issues related to traditional counseling mode by offering flexible, confidential and immediate psychological assistance (Richards et al., 2020; Lattie et al., 2022). In Nigeria too, Olowokere & Afolayan (2019) found that technology-enabled counseling promotes participation of students by overcoming the obstacles related to distance, time and confidentiality.

Another important finding from the study is the substantial role of digitally aided curriculum reforms in supporting the recovery of students academically. From the ANOVA analysis, it was reported that faculties applying flexible digital learning approaches performed greatly in addressing challenges linked with carryovers ($F = 6.89, p < .001$). Digital curriculum reforms like modular learning, asynchronous courses and online remedial classes were described by participants as useful approaches for addressing issues related to overload and providing students with the chance to take repeat courses alongside their present courses. As one faculty remarked, "In our department, students can undertake some of their carryovers through online mode or break times," suggesting that flexibility in curricula can help in offering personalized modes without necessarily elongating the duration that learners spend in studies. Such findings support the international research that indicates that blended learning, flexible curriculum structures and technologically supported learning environments offer greater flexibility and learner engagement to academically struggling students (Bond et al., 2020; Martin et al., 2022; Bozkurt et al., 2020). This has been seen within Nigerian universities where Akinlosotu (2021) showed that ICT-supported curriculum reforms provide flexible approaches to learning.

Although digital curriculum interventions and counselling approaches were positively impacted by such reforms, this research discovered several institutional obstacles that inhibit the success of the implementation process. According to the one-sample t-test conducted, all the participating universities faced the lack of qualified ICT specialists, curriculum experts and professional counsellors ($p < .05$). Such quantitative results were further proven by the statements of participants of the research, for example, a counsellor stated, "One counselor takes care of more than 200 students; this is impossible" and a lecturer added, "In some departments there is no provision for make-up classes or summer classes; you just have to wait for another year". Thus, the findings revealed that the implementation of digital interventions depends not only on availability of technology but also on institution capacity and professional knowledge. Internationally, similar barriers are still present in the area of digital transformation in higher education due to lack of staff training, underfunding and technological infrastructure (OECD, 2021; Henderson et al., 2017). Olatunde (2022) in turn, highlighted that despite the introduction of digital learning initiatives in many Nigerian universities, poor infrastructure and professional capacity hinder its efficiency in terms of academic vulnerability support.

Lastly, the research established that students under carryover pressure were willing to embrace digital learning and counseling platforms ($\chi^2 = 42.17, p < .001$). Digital technologies were viewed by students as flexible, empowering and effective in mitigating the stigmatizing nature of conventional academic efforts. For instance, one participant commented, "Through online modules, I will be able to recover from carryovers in my own time even when on holidays." This result reveals increased acceptance of digital technologies as viable ways of addressing academic challenges. Similar international findings reveal that students have become willing to utilize digital technologies in learning and counseling due to their ability to give convenience, flexibility, confidentiality and consistent academic support (Bond et al., 2020; Richards et al., 2020; Lattie et al., 2022). There is also supporting evidence in Nigeria where Olowokere and Afolayan (2019) reported that digital counseling increases access to professionals and motivates learners to seek help. Summarily, adoption of digital curriculum reforms alongside technology-based counseling initiatives is a holistic institutional approach that improves academic performance, psychological wellbeing and timely graduation of students under carryover pressure.

Altogether, the results from this study support the need for implementing a digital integration system via the combination of flexible curriculums and accessible counseling programs to tackle the academic and psychological effect of the carryover pressure courses. This approach is consistent with current evidence from abroad in terms of technology-supported learning and student support, while at the same time addressing the reality of Nigerian public universities. Through developing technology-based strategies, enhancing counseling

programs and implementing flexible curriculums, universities could assist students in becoming more resilient academically, ensure graduation and foster holistic development.

5. Conclusion

This study demonstrates that carryover pressure courses are a major academic and psychological problem for final year students at public universities in Delta State. The problems of unresolved courses were found to negatively influence students' academic performance, raise stress and anxiety levels and reduce students' academic confidence. However, the results unambiguously reveal that curricula digital reforms and counselling strategies act as efficient institutional strategies aimed at reducing the negative impact of carryover pressure courses. Based on Transactional Model of Stress and Coping and Sociocultural Theory, the research upholds that counselling strategies are essential coping strategies that contribute to students increased emotional resilience and curriculum digital reforms are pedagogical scaffolding platforms that allow creating flexible, personalized and technology-enabled learning environment. The combination of these two strategies substantially moderates the negative influence of carryover pressures on academic performance. From the perspective of policy and practice, the current research points out the urgent need for developing curricula digital reforms and academic counselling framework within the scope of the higher institutions of learning policy in Delta State. Universities should no longer rely on the temporary strategies of remediation and should implement flexible curricula structures, digital learning technologies and counselling strategies into the university policies. Furthermore, solving the problem of shortage of ICT, curricula and counselling specialists is expedient for successful implementation of the policy. Finally, the current research presents strong evidence of positive influence of curriculum digital reforms and counselling strategies on academic resilience, graduates' outcomes and overall students' development in the context of Nigerian universities.

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Data Availability

The datasets generated during and/ or analysed during the current study are available from the corresponding author on reasonable request.

Declaration on AI Use

The authors declare that no artificial intelligence (AI) or AI-assisted tools were used in the preparation of this manuscript.

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