



Synthesis of Students' Academic Perseverance on Competency-Based Learning in Secondary Schools: Evidence from Mukono and Kayunga Districts in Uganda

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Abstract: *This study investigated the influence of academic perseverance on the implementation and effectiveness of Competency-Based Learning (CBL) in secondary schools, with a specific focus on Uganda's Mukono and Kayunga districts. The research is grounded in Resilience Theory, conceptualizing perseverance as a critical dimension of academic resilience that encompasses grit, tenacity, and self-efficacy. With the recent adoption of CBL under Uganda's educational reforms, the study responds to a significant gap in literature and practice—namely, the underexplored role of learners' internal psychological dispositions in determining the success of pedagogical transformations. Employing a cross-sectional mixed-methods design, the study collected data from 389 students, alongside head teachers, class teachers, and district education officials, to evaluate the interplay between perseverance and CBL engagement. Quantitative findings reveal a statistically significant positive correlation ($r = 0.4863$, $p < 0.01$) and regression coefficient ($\beta = 0.516$), indicating that perseverance accounts for 24% of the variance in CBL outcomes. Qualitative insights further illuminate how traits such as self-regulation, problem-solving, and a survivor mentality enhance learners' capacity to engage with mastery-based curricula. While students expressed favorable attitudes towards CBL, challenges such as inadequate teacher preparation and limited instructional time persist. The findings underscore the importance of cultivating perseverance to foster student autonomy, resilience, and sustained academic engagement in CBL frameworks. Policy recommendations advocate for targeted teacher training and curricular innovations that integrate perseverance-building interventions to support Uganda's evolving education system.*

Keywords: *Competency-Based Learning, Students' Academic Perseverance, Synthesis, Evidence from Mukono and Kayunga Districts in Uganda.*

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1. Introduction

Globally, education systems are shifting from traditional, teacher-centered models to learner-centered approaches that emphasize mastery, adaptability, and real-world application of knowledge. This change reflects the growing demand for 21st-century competencies such as critical thinking, creativity, collaboration, emotional intelligence, and problem-solving—skills vital for navigating modern

societies and dynamic labor markets. Consequently, educational reforms increasingly prioritize outcome-based learning that promotes not just academic achievement but also the holistic development of learners.

In line with this trend, Uganda has adopted Competency-Based Learning (CBL) as a strategic reform to enhance educational relevance and quality. CBL aims to develop learners who can apply their knowledge and skills in real-

life contexts. Its key features include learner-centered pedagogy, integration of life skills into subject content, performance-based assessments, and an emphasis on learning outcomes over time-bound instruction. The National Curriculum Development Centre (NCDC) has led efforts to revise the national curriculum and implement CBL across secondary schools.

Despite strong policy support, CBL implementation in Uganda faces significant challenges. These include limited teacher preparedness, insufficient learning resources, large class sizes, and inconsistent assessment practices. In areas like Mukono and Kayunga districts, these challenges are further intensified by structural inequities and socio-economic barriers. While institutional readiness is critical, student-level psychological factors also influence the success of CBL—especially traits like motivation, self-regulation, and academic resilience.

Among these traits, academic perseverance stands out as crucial in CBL environments. Defined as a student’s ability to sustain effort, remain focused, and overcome challenges in pursuit of long-term academic goals, perseverance is particularly important in learner-driven, performance-based systems like CBL. This study examines how academic perseverance influences the implementation and effectiveness of CBL in selected Ugandan secondary schools, focusing on Mukono and Kayunga districts. Guided by Resilience Theory, the study explores perseverance as a dimension of psychological resilience that supports learners in mastering key competencies. By linking conceptual insights with the Ugandan educational context, the research aims to inform educators and policymakers on how to strengthen learner-centered reforms by cultivating perseverance and academic resilience.

2. Literature Review

2.1 Theoretical Framework: Resilience Theory

This study is anchored in Resilience Theory, which posits that individuals have the capacity to adapt positively despite adversity, trauma, or stress. Widely applied in psychology, education, and social work, the theory views resilience as a dynamic process shaped by personal attributes and environmental interactions (Greene,

Galambos, & Lee, 2018; Luthans, 2020). Key components include emotional regulation, self-awareness, intrinsic motivation, and access to supportive relationships. In education, these attributes help learners maintain focus, manage stress, and sustain academic performance under challenging conditions.

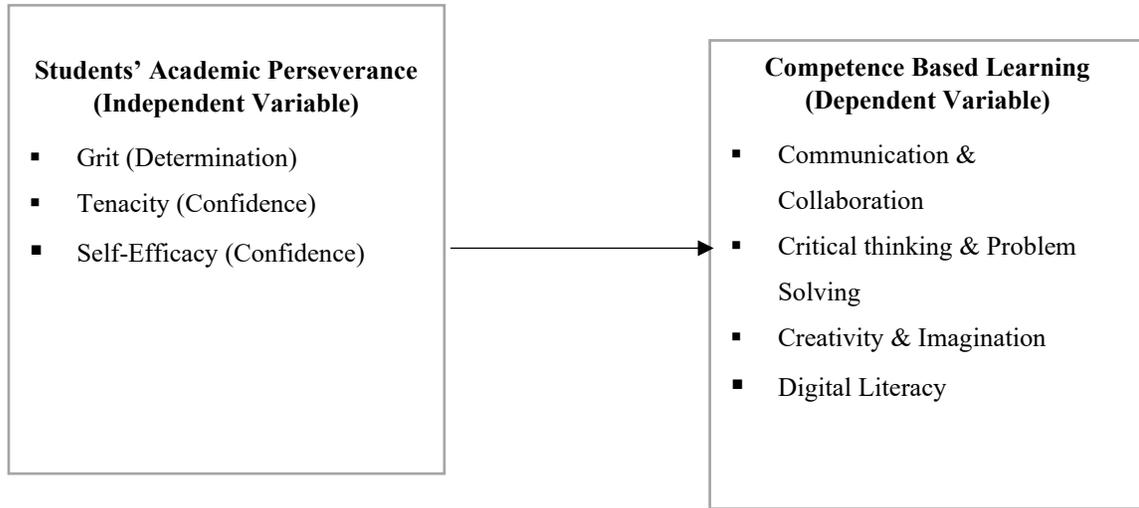
Academic perseverance is understood within this framework as a behavioral expression of resilience—marked by sustained effort, determination, and commitment to educational goals despite setbacks. In CBL settings, where learning is student-directed, assessment is performance-based, and progress depends on demonstrated competence, perseverance is essential. Resilience Theory helps explain how learners regulate emotions, stay motivated, and overcome frustration in the face of delayed success (Masten, 2014; Southwick et al., 2014).

The theory also highlights protective factors—such as teacher support, peer collaboration, a positive school climate, and community resources—that reinforce perseverance. These are particularly relevant in CBL, where learners must navigate autonomy, collaboration, and self-paced progression (Zimmerman & Schunk, 2019; Evans et al., 2021). Additionally, relational competencies like empathy and communication, emphasized in resilience literature, align with the collaborative demands of CBL classrooms.

However, Resilience Theory is not without critique. Some scholars argue it overemphasizes individual adaptability while overlooking systemic issues such as poverty, underfunded schools, and institutional inequities. This can shift undue responsibility onto students (Kirschner, Sweller, & Clark, 2020). Moreover, the lack of a standardized definition complicates empirical application across contexts. Critics also caution against depicting resilience as a simple process of “bouncing back,” noting that adaptation often involves regression and transformation (Fosnot & Perry, 2015; Clark, 2021).

Another limitation is the theory’s basis in Western individualistic paradigms, which may not align with communal cultures. In Uganda, perseverance is often shaped by family support, cultural values, and collective aspirations. Therefore, a culturally responsive interpretation of Resilience Theory is essential to capture the broader influences on students’ academic behavior and success (Duncan & Chinn, 2007).

Conceptual Framework



Source: Rudd et al. (2021), Broazon and Chuang (2023) and modified by the researcher (2024)

2.2 Empirical Literature Review

2.2.1 The Relationship between Grit and Competency-Based Learning

Grit, defined as passionate, sustained commitment to long-term goals despite challenges, is vital for learner success in Competency-Based Learning (CBL). Duckworth et al. (2007) argue grit predicts academic achievement better than talent or intelligence, important in mastery-based systems requiring proficiency before progression. CBL demands repeated effort, resilience to failure, and intrinsic motivation—all tied to grit.

Studies confirm grit's positive impact on CBL outcomes. Tang et al. (2019) and Muenks et al. (2017) found high-grit students adopt mastery goals, stay focused, and persist through challenges, matching CBL's iterative learning. Eskreis-Winkler et al. (2016) noted gritty learners are likelier to reach competency thresholds in self-directed settings.

Grit also links to reduced burnout and improved well-being in demanding environments. Alhadabi and Karpinski (2020) observed gritty students perform better and experience less stress in high-autonomy CBL settings. Chang (2014) found gritty learners excel in asynchronous, self-paced contexts.

African research supports grit's importance. Owusu-Acheampong and Acquaye (2021) reported Ghanaian

students with high grit scores showed strong engagement and time management in modular learning. Mukasa and Akello (2022) found gritty Ugandan learners adapted well to reflective tasks in CBC pilot schools.

However, some scholars caution that grit overlaps with conscientiousness (Credé et al., 2017) and may have limited predictive power beyond prior achievement (Rimfeld et al., 2016). Farrington et al. (2012) warn against ignoring structural barriers. Despite this, grit remains essential for resilience in CBL, especially when combined with learner autonomy, scaffolding, and culturally responsive teaching (Hodges, 2020; Horn & Staker, 2015).

2.2.2 The Influence of Tenacity on Competency-Based Learning

Tenacity, defined as persistent determination in the face of challenges, is a key behavioral attribute that supports student engagement in Competency-Based Learning (CBL). Unlike grit, which emphasizes long-term passion, tenacity focuses on short-term perseverance—resisting distraction and persisting through difficult academic tasks (Shechtman et al., 2013). CBL demands that learners repeatedly engage with content, apply skills across diverse contexts, and respond to feedback, making tenacity highly relevant.

Goodman et al. (2012) found that tenacious learners were better at maintaining attention and completing tasks, even after receiving negative feedback. Claessens et al. (2015) also reported that behavioral persistence was linked to

effective progression through competency-based modules. Kuh et al. (2006) included tenacity as a dimension of student engagement, highlighting its value in learning systems where time is flexible but mastery is essential.

Martins and Costa (2018) demonstrated that tenacity predicted successful completion of online competency units, particularly where external motivation was low. In under-resourced settings like Uganda, tenacity plays an even more crucial role. Turyamureeba (2022) found that students with strong tenacity sustained learning despite limited resources and teacher support. Mugisha (2019) observed that persistent learners leveraged peer networks and community structures to meet competency goals.

However, some scholars caution against overstating tenacity's role. Tough (2012) warned that emphasizing persistence may overlook students' emotional or structural barriers. Kirschner and Hendrick (2020) argued that tenacity alone is insufficient without quality instruction and scaffolding. Xu and Jaggars (2014) also noted that persistence does not always predict outcomes unless aligned with effective guidance.

Still, when integrated with strong pedagogy, tenacity enhances learner agency, supports mastery, and sustains engagement in CBL. It enables learners to navigate iterative learning cycles, manage emotional fatigue, and maintain task commitment over time (Shin et al., 2018; Zimmerman, 2013).

2.2.3 The Effect of Self-Efficacy on Competency-Based Learning

Self-efficacy—one's belief in their ability to succeed in specific tasks (Bandura, 1997)—is a critical psychological factor in Competency-Based Learning (CBL). Since CBL emphasizes self-regulation, reflection, and the application of knowledge across varied contexts, learners' self-efficacy shapes their engagement, persistence, and success (Schunk & DiBenedetto, 2016).

Students with high self-efficacy are more likely to set goals, monitor progress, and revise strategies to achieve mastery (Zimmerman & Kitsantas, 2014). Klassen and Usher (2010) noted that such learners embrace feedback and adapt effectively—key behaviors in CBL. Usher and Pajares (2009) linked self-efficacy with deeper cognitive engagement, including critical thinking and elaboration. Vuong et al. (2010) found that self-efficacious learners better manage autonomy and uncertainty in self-paced environments. Similarly, Lent et al. (2011) observed that self-efficacy predicted persistence even after repeated failures in science-based competency models.

In African contexts, Kamau and Atieno (2021) showed that Kenyan learners with high self-efficacy were more engaged in problem-solving and group tasks. In Uganda, Okello and Ssentongo (2022) found that students who believed in their abilities were more proactive in formative assessments and task revision. Nonetheless, critics warn of overconfidence. Pajares and Graham (1999) noted that inflated self-efficacy can hinder accurate self-assessment. Dinther et al. (2011) emphasized that instructional support moderates self-efficacy's impact, while Bouffard-Bouchard (2001) warned that overconfident low performers may ignore feedback.

Still, when reinforced by scaffolding and feedback, self-efficacy empowers learners to persist, reflect, and achieve mastery within CBL frameworks (Bandura, 2006; Martin, 2002).

3. Methodology

3.1 Design

This study employed a cross-sectional descriptive design within a mixed methods approach to explore the influence of academic perseverance on Competency-Based Learning (CBL) in Ugandan secondary schools. The quantitative component used a cross-sectional survey to collect data from a diverse sample at a single point in time, allowing the simultaneous measurement of predictor variables (grit, tenacity, self-efficacy) and CBL-related outcomes (learner engagement and progression). This design was well-suited for assessing current experiences within Uganda's evolving CBL framework. The qualitative component provided deeper insight into learners' coping strategies and adaptive behaviors. A mixed methods approach enabled triangulation, enhancing the validity of findings by aligning statistical trends with real-world perspectives.

3.2 Population and Sampling

The study population included students in Senior One to Senior Four (S1–S4), teachers, head teachers, and district education officials from 12 selected secondary schools—three government-aided and three private schools from each of Mukono and Kayunga districts. These participants were actively involved in implementing or experiencing the Competency-Based Curriculum (CBC), making them ideal informants for exploring the relationship between perseverance and CBL.

The target population encompassed all S1–S4 students, teachers, and education leaders in the two districts. The accessible population included those enrolled or present in

the 12 selected schools during the data collection period. Participation was voluntary and based on availability to ensure a representative and contextually grounded sample.

3.3 Study Participation

The quantitative sample included 13,302 students—6,405 from Kayunga and 6,897 from Mukono—based on official enrollment data. Students provided insights into learner engagement; teachers and head teachers informed on curriculum practices, while district officials offered policy-level perspectives. Including diverse stakeholders ensured comprehensive analysis of how perseverance shapes outcomes in CBL environments.

Table 1: Distribution of Student Population by School

District	School	Population	Sample	Percentage (%)
Kayunga	Kayunga Light College	586	17	2.90
Kayunga	Uganda Martyrs' S.S	976	29	2.97
Kayunga	Nagabi S.S	1,007	30	2.98
Kayunga	Ndeeba S.S	1,040	31	2.98
Kayunga	Kingstone	1,138	33	2.90
Kayunga	St. Mathias Kalemba	1,658	49	2.95
	Sub-total	6,405	188	2.94
Mukono	Bishops' S.S	2,022	59	2.92
Mukono	Our Lady of Africa	1,690	49	2.90
Mukono	Namiryago S.S	1,300	38	2.92
Mukono	Seeta Secondary School	650	19	2.92
Mukono	Paul Mukasa Secondary School	780	23	2.95
Mukono	Central Standard High School	455	13	2.86
	Sub-total	6,897	201	2.91
	Total	13,302	389	2.93

Note. Source: Field Visit (2024).

Sample Size

The sample size was determined using Yamane's formula, which is suitable for determining sample sizes in behavioral studies. The formula is:

$$n = \frac{N}{1 + N(e^2)}$$

Where:

n = sample size

N = total population (13,302)

e = margin of error (0.05)

Substituting the values into the formula:

$$n = \frac{13302}{1 + 13302(0.05^2)}$$

$$n = 388.82$$

The result was rounded to **389 students**, which became the sample size. The sample size was proportionally distributed among the schools based on their population. The allocation ensured that each school was represented in the sample according to its size relative to the total population. Larger schools had a greater influence on the overall results, which was appropriate given their larger student populations.

Table 2: Sample size allocation for students

District	School	Population	Sample
Kayunga	Kayunga Light College	586	17
Kayunga	Uganda Martyrs' SS	976	29
Kayunga	Nagabi S.S	1,007	30
Kayunga	Ndeeba S.S	1,040	31
Kayunga	Kingstone	1,138	33
Kayunga	St.mathias Kalemba	1,658	49
	sub-total	6,405	188
Mukono	Bishops' S.S	2,022	59
Mukono	Our Lady of Africa	1,690	49
Mukono	Namiryago S.S	1,300	38
Mukono	Seeta Secondary school	650	19
Mukono	Paul Mukasa Secondary school	780	23
Mukono	Central Standard High School	455	13
	sub-total	6,897	201
	Total	13,302	389

Source: Primary data (2024).

Sample size determination for qualitative participants

Based on the principle of saturation, the sample size for head teachers was 4; 12 class teachers 2 district education officers; and 2 school inspectors.

3.4 Sampling Strategies and Data Collection Instruments

Multiple sampling techniques were used for representativeness. For the quantitative phase, a list of secondary schools in Mukono and Kayunga was obtained from District Education Officers. Schools and students were selected using simple random sampling, ensuring gender balance. Purposive sampling identified key informants—head teachers, education officers, and inspectors—based on their expertise in Competency-Based

Learning (CBL). Convenience sampling was applied to class teachers for accessibility.

Data were collected using structured questionnaires, semi-structured interview guides, and a focus group discussion (FGD) guide. The questionnaire, based on a Likert scale, assessed academic perseverance and CBL indicators, reviewed by experts for clarity and reliability. Interviews explored stakeholder experiences and perceptions in-depth, recorded with consent and supported by field notes

3.5 Data Quality Control

Reliability and validity were prioritized. Content validity was ensured through expert review. Triangulation of instruments and participants enhanced the credibility and consistency of the findings.

Table 3: Validation of Quantitative Data Collection Instrument

Construct	Items	CVI
Students' Academic Resilience	12	0.7316
Adaptive Help-Seeking	10	0.7183
Emotional Response	9	0.7920
Competency-Based Learning	13	0.8187
Emotional Intelligence	25	0.8449

Source: Primary data (2024).

Note. CVI = Content Validity Index.

Content validity measures how well a questionnaire represents the construct it is intended to assess. It ensures that the survey items cover all relevant aspects of the concept being studied. In this study, Content Validity Index (CVI) was used to evaluate the validity of the questionnaire items under five key constructs: Students' Academic Resilience, Adaptive Help-Seeking, Emotional Response, Competency-Based Learning, and Emotional Intelligence.

The CVI scores indicate the proportion of expert reviewers who agreed that the questionnaire items were relevant and appropriate for measuring each construct. A CVI score closer to 1.0 suggests stronger content validity. In this case, Emotional Intelligence (CVI = 0.8449) and Competency-Based Learning (CVI = 0.8187) had the highest content validity, implying strong agreement among experts that the items effectively measure these constructs. Emotional

Response (CVI = 0.7920) also showed high validity. However, Students' Academic Resilience (CVI = 0.7316) and Adaptive Help-Seeking (CVI = 0.7183) had the lowest CVI scores, indicating that some experts may have found certain items less representative of these constructs.

Overall, all constructs have acceptable content validity, as they meet the general threshold of 0.70 or higher.

3.6 Reliability

To ensure reliability, the research instruments were pre-tested using the test re-test method to ensure consistency and comprehensiveness. The overall Cronbach alpha was 0.9233 which was quite high and indicated excellent internal consistency within the scale or questionnaire.

Table 4: Reliability of Quantitative Instruments

Construct	Items	Cronbach's Alpha
Students' Academic Resilience	12	0.7197
Adaptive Help-Seeking	10	0.7161
Emotional Response	9	0.7066
Competency-Based Learning	13	0.8084
Emotional Intelligence	25	0.8666
Overall	69	0.9233

Source: Primary data (2024).

Note. Reliability was measured using Cronbach's alpha; values above 0.70 indicate acceptable internal consistency.

3.6 The Role of Grit, Tenacity, and Self-Efficacy in Competency-Based Learning

Grit, defined as long-term perseverance toward goals, is essential in Competency-Based Learning (CBL), where mastery requires repeated effort and delayed gratification. Duckworth et al. (2007) suggest grit predicts academic success beyond intelligence. Gritty learners persist through failure and focus on mastery (Tang et al., 2019; Muenks et al., 2017), showing resilience and reduced burnout (Alhadabi & Karpinski, 2020). African studies confirm gritty students navigate project-based and modular learning more successfully (Owusu-Acheampong & Acquaye, 2021; Mukasa & Akello, 2022). However, critics caution grit may overlap with conscientiousness (Credé et al., 2017) and obscure structural barriers (Farrington et al., 2012).

Tenacity—the short-term refusal to give up—is also vital in CBL, where students must persist through cycles of feedback and revision (Shechtman et al., 2013). Tenacious learners stay focused despite setbacks (Goodman et al., 2012), especially in low-resource settings (Martins & Costa, 2018; Turyamureeba, 2022; Mugisha, 2019). Yet, overemphasis on persistence may overlook students facing

trauma or systemic obstacles (Tough, 2012), highlighting the need for supportive instruction (Xu & Jaggars, 2014).

Self-efficacy, or belief in one's ability to succeed (Bandura, 1997), enhances motivation, feedback use, and persistence—core elements of CBL (Zimmerman & Kitsantas, 2014; Klassen & Usher, 2010). In East Africa, high self-efficacy correlates with greater engagement in group and problem-solving tasks (Kamau & Atieno, 2021; Okello & Ssentongo, 2022). However, inflated self-efficacy may hinder accurate self-assessment (Pajares & Graham, 1999), requiring effective scaffolding (Dinther et al., 2011).

Together, grit, tenacity, and self-efficacy foster learner success in CBL when reinforced by quality instruction and feedback.

4. Results and Discussion

4.1 Descriptive statistics

Demographic Characteristics

Under this, the socio demographic characteristics of respondents is given by district, sex and grade as per table below.

Table 5: Respondent Characteristics

Characteristic	Frequency	Percentage (%)
Respondents by District		
Kayunga District	198	49.62
Mukono District	201	50.38
Sex		
Female	222	55.64
Male	177	44.36
Gra		
S1	22	5.51
S2	93	23.31
S3	221	55.39
S4	63	15.79

Source: Primary data (2024).

The distribution between the two districts is fairly balanced, with Mukono District having a slightly higher percentage of respondents (50.38%) compared to Kayunga District (49.62%). There is a higher representation of females (55.64%) compared to males (44.36%). This suggests that females are slightly more prevalent in the sample. The distribution of respondents by class shows that S1 has the smallest representation (5.51%), indicating it is the least frequent grade among the respondents, S2 represents a moderate proportion (23.31%), S3 is the most common grade with the highest percentage (55.39%). This suggests that a majority of respondents are in this grade and S4 has a moderate representation as well (15.79%), higher than S1 but lower than S2 and S3. Since the study involved correlating several aspects of the independent variable with the dependent variable, the researcher first presents the

findings of the independent variable (Competence –based learning), after which the correlation were made:

4.2 Descriptive statistics on Conception of competence-based learning in selected Secondary Schools of Mukono and Kayunga district

This section is about descriptive statistics on learners' conception on competence-based learning in Mukono and Kayunga districts in Uganda. Likert means and percentages showing the level of agreement and disagreement are presented in the table as reflected below

Table 6: Perceptions of the learners on Competency-based learning

Competency based learning	SD	D	NS	A	SA	Mean	Standard deviation	Sample (n)
CBL enables me to master specific knowledge and skills in order to advance to the next topic.		1.00	4.01	42.86	52.13	4.461	0.624	399
CBL enables me to work with a teacher in a small group of students	0.25	0.75	1.00	44.36	53.63	4.504	0.588	399
CBL enables me to know exactly what I am trying to learn when I work on projects in this class.	0.25	0.75	3.51	45.36	50.13	4.444	0.627	399
CBL enables me and my classmates to have an opportunities to give each other feedback.	0.75	0.75	4.76	40.35	53.38	4.449	0.692	399
CBL enables me to master what I am learning when I work on a project.	0.25	1.25	3.26	42.61	52.63	4.461	0.648	399
CBL exposes me to several strategies I can use to finish my classwork	0.75	2.51	5.01	49.87	41.85	4.296	0.742	399
CBL helps teachers to facilitate nurturing of students' academic performance.	1.00	2.01	7.02	51.38	38.60	4.246	0.753	399
CBL Promotes students to strengthen self-actualization.		1.50	8.02	49.37	41.10	4.301	0.680	399
CBL enhances students' learning.	0.75	0.50	8.52	46.37	43.86	4.321	0.714	399
CBL depends on the ability to assess students' preference to achieve academic goals.	0.25	4.01	9.27	48.12	38.35	4.203	0.787	399
CBL depends on the nature of learners to acknowledge activity of integration.	1.50	3.76	6.52	43.36	44.86	4.263	0.856	399
CBL depends on the nature of students to address self -discovery.	0.75	2.01	10.53	46.62	40.10	4.233	0.775	399
CBL depends on learning environment of learners to support group discussion	1.00	3.26	3.76	45.86	46.12	4.328	0.783	399

Key-5= strongly agree (SA), 4= Agree (A), 3= Not sure (NS), 2= Disagree (D) and 1= strongly disagree (SD).

Source: Primary data 2024

Findings on Competency-Based Learning (CBL)

The study shows a positive perception of Competency-Based Learning (CBL) among learners in Mukono and Kayunga districts. Respondents agreed that CBL supports academic progression by ensuring mastery before moving to new content, with a mean score of 4.461 and 95.99% agreement. Learners valued personalized attention from teachers in small groups (mean = 4.504; 98.00% agreement), which helped meet individual needs.

CBL's clear learning objectives during projects (mean = 4.444; 95.49%), peer feedback (mean = 4.449; 93.73%), and mastery focus (mean = 4.461; 95.24%) confirm its structured, transparent, and collaborative approach. Learners also appreciated the variety of strategies to complete tasks (mean = 4.296; 91.72%) and teacher efforts to improve performance (mean = 4.246; 89.98%). Beyond academics, CBL was recognized for fostering personal

growth and self-actualization (mean = 4.301; 90.47%), showing its holistic benefits. Supportive group discussions were seen as important (mean = 4.328; 92.98%).

Moderate variation appeared in learner preferences (mean = 4.203; 86.47%), integration activities (mean = 4.263; 88.22%), and self-discovery opportunities (mean = 4.233; 86.72%), suggesting areas needing clearer strategies.

Qualitative data supported these results. Participants described CBL as flexible, allowing learners to progress at their own pace: "CBL is flexible... students move forward based on where they are" (FGD, 2024). The focus on practical outcomes was emphasized: "learning outcomes are proven by action" (KII, 2024). This matches other research highlighting CBL's role in building confidence and enhancing feedback.

Challenges include limited teaching time, insufficient training, and costly workshops. Comments such as “teachers lack enough time” and “training workshops are costly” (FGD, 2024) highlight the need for more investment in teacher capacity and resources.

In sum, learners view CBL positively for mastery and development, but effective implementation requires addressing systemic barriers.

4.3 Descriptive statistics on Perceptions of students’ Academic perseverance and conception of competency-based learning in selected secondary schools of Mukono and Kayunga district

This section presents findings on learners’ perceptions of perseverance in Mukono and Kayunga districts in Uganda. The data, shown in the Table below, includes Likert means and percentages indicating the level of agreement and disagreement with statements about perseverance. These statements assess learners’ responses to academic challenges, including their willingness to use feedback to improve, persist in their efforts, maintain long-term goals, and manage negative thoughts. The questions also explore whether learners would give up, change their career plans, or accept feedback, providing insight into their perseverance levels when faced with academic difficulties.

Table 7: Perceptions of learners' perseverance

Perseverance	SD	D	NS	A	SA	Mean	Standard deviation	Sample (n)
I would use the feedback to improve my work	1.00	1.50	4.01	49.37		44.11	4.341	0.719 399
I continue to strive for excellence even in the face of adversity.	0.25	1	4.01	47.6		47.12	4.404	0.642 399
I am determined to succeed despite setbacks and failures.	1.00	3.01	5.26	41.60		49.12	4.348	0.797 399
I would see the situation as temporary	1.00	7.52	14.54	43.61		33.33	4.008	0.934 399
I would stay committed to my goals even when the work gets challenging.	0.25	0.75	1.5	38.9		58.65	4.549	0.595 399
I would try to think of new solution	1		10.28	45.1		43.61	4.303	0.734 399
I would keep trying		0.50	1.25	41.60		56.64	4.544	0.551 399
I would not change my long-term goals and ambitions.	0.75	3.51	8.02	39.4		48.37	4.311	0.823 399
I wouldn't accept the tutor's feedback	7.27	14.29	23.31	34.84		20.30	3.466	1.175 399
I would see the situation as a change .	1.75	4.51	10.78	50.9		32.08	4.070	0.874 399
I would remain dedicated to my goals and keep working towards it.	0.75	0.25	1.25	37.8		59.9	4.559	0.615 399
I would look forward to showing that I can improve my grades.	0.25	0.75	0.25	35.1		63.66	4.612	0.564 399

Key-5= strongly agree (SA), 4= Agree (A), 3= Not sure (NS), 2= Disagree (D) and 1= strongly disagree (SD).

Source: Primary data (2024)

Interpretation of Findings on Perseverance

Survey results demonstrate strong levels of perseverance and commitment to academic goals among students. Respondents highly valued using feedback to improve their

work (mean = 4.341; 93.48% agreement), suggesting an openness to constructive input. They also reported strong dedication to excellence despite difficulties (mean = 4.404; 94.72% agreement), and determination to succeed in the face of setbacks (mean = 4.348; 90.72% agreement), though individual responses varied slightly (SD = 0.797).

Belief in the temporary nature of challenges was less consistent (mean = 4.008; 76.94% agreement), with higher variability (SD = 0.934), suggesting that while many view setbacks as short-term, others are less confident in overcoming them. Commitment to long-term goals was very high (mean = 4.549; 97.55% agreement; SD = 0.595), as was persistence in continuing efforts despite difficulties (mean = 4.544; 98.24% agreement; SD = 0.551), showing a collective resilience mindset.

A proactive, problem-solving orientation was also evident (mean = 4.303; 87.22% agreement), supported by learners' creativity in overcoming obstacles (SD = 0.734). Similarly, students endorsed maintaining focus on long-term aspirations (mean = 4.311; 87.77% agreement), and viewing difficulties as opportunities for growth (mean = 4.070; 83.98% agreement).

However, resistance to tutor feedback was evident, with the lowest mean score (3.466), only 55.14% agreement, and high variability (SD = 1.175). This suggests a specific challenge in accepting critique from authority figures, which could hinder growth and academic development. The highest rated item (mean = 4.612; 98.76% agreement; SD = 0.564) was the desire to showcase academic progress, reflecting strong intrinsic motivation. Overall, findings indicate a student population characterized by resilience, persistence, and a commitment to self-improvement, although greater support is needed to enhance receptiveness to external feedback.

4.4 Qualitative Findings

Focus group and interview responses highlight several key contributors to perseverance within the Competency-Based Learning (CBL) context. One major factor is **self-control**. Students who take personal responsibility for their learning—avoiding blame and recognizing their role in outcomes—demonstrate stronger academic resilience. As one participant noted, “Students...believe their actions affect the outcome of their acquisition of knowledge and competences” (KII, 2024).

Another important factor is **problem-solving ability**. Resilient learners approach challenges calmly and rationally, envisioning solutions and implementing them effectively. This skill enables them to cope with and excel in the CBL environment (KII, 2024). This aligns with research by Duckworth et al. (2007) and Almulla (2024), emphasizing perseverance as a critical non-cognitive skill for success.

Social support also plays a key role. Students benefit from strong networks of friends, family, and teachers who provide emotional and academic support. As one respondent shared, “Resilient students have a network... to keep them socially connected hence excel in their studies” (FGD, 2024). These connections enhance engagement and perseverance, as supported by Borazon & Chuang (2023).

Finally, a **survivor mentality**—focusing on solutions rather than victimhood—was seen as essential. Resilient students remain future-oriented and action-driven even during adversity, fostering better outcomes (KII, 2024; Nghia, 2023).

In conclusion, perseverance in CBL is driven by self-control, problem-solving, social support, and a survivor mindset, though tutor feedback remains a challenge for some learners.

The results of the correlation and regression analysis between perseverance and competency-based learning are provided.

Table 8: Correlations between students' academic perseverance and competency-based learning

VARIABLES	Competency-based Learning
Perseverance	
Correlation	0.4863
Sig.	0.0000

Source: Primary data 2024

The analysis reveals a significant moderate positive correlation ($r = 0.4863$, $p < 0.001$) between perseverance

and Competency-Based Learning (CBL). Students with greater academic resilience engage more effectively in

CBL, persisting through challenges inherent in mastery-based, personalized learning. This strong relationship highlights perseverance as key to successful CBL implementation. Resilient learners view difficulties as growth opportunities, aligning with CBL’s iterative nature.

The findings support prior research linking perseverance to academic success and suggest that building resilience alongside instructional improvements can enhance student engagement and achievement in CBL, promoting both immediate and long-term educational outcomes.

Table 9: Regression results for the influence of perseverance on competency-based learning

Source	SS	df	MS	Number of obs	=	399
Model	14.6678928	1	14.6678928	F(1, 397)	=	122.94
Residual	47.3659508	397	.1193097	Prob > F	=	0.0000
				R-squared	=	0.2364
				Adj R-squared	=	0.2345
Total	62.0338436	398	.155863929	Root MSE	=	.34541

Competence~g	Coefficient	Std. err.	t	P> t	[95% conf. interval]	
Perseverance	.5159741	.0465352	11.09	0.000	.4244878	.6074604
_cons	2.131847	.2005142	10.63	0.000	1.737644	2.526049

Source: Primary data 2024

The Role of Perseverance in Competency-Based Learning

Regression analysis revealed a significant positive link between perseverance and success in Competency-Based Learning (CBL), with a coefficient of 0.516 ($p < 0.01$). Students with higher perseverance are more likely to succeed in CBL, which demands repeated practice, sustained effort, and resilience. Perseverant learners stay engaged through feedback cycles until mastery is reached.

Perseverance accounts for about 24% of the variation in CBL effectiveness ($R^2 = 0.236$), indicating other factors like teaching strategies, emotional intelligence, and instructional support also influence success. Thus,

perseverance is important but not the only key to achievement.

Qualitative findings from Mukono and Kayunga districts aligned with this, showing perseverance helps students tackle challenges and limited resources. Yet, learners emphasized that teacher support, peer encouragement, and structured guidance are also crucial.

In summary, perseverance plays a vital role in CBL success but must be fostered alongside a supportive learning environment. Educators and policymakers should focus on both perseverance and other factors to improve outcomes. Future research should explore how perseverance interacts with additional variables to enhance competency-based learning.

Table 10: Qualitative Findings Regarding Perseverance and Competency-Based Learning

Theme	Sub-Theme	Code	Verbatim Response
Perseverance	Sense of self-control	RESPO 1	"Students who take control over themselves as having control over their own life and avoid blaming outside sources for their failures and academic problems, they believe that their actions they take will affect the outcome of their acquisition of knowledge and respective learning competences." (KII, 2024)
	Problem-solving skills	RESPO 2	"Resilient students are able to calmly and rationally look at a problem and envision a successful solution that would guide them to cope and excel in their mastery of competences and studies appropriately." (KII, 2024)
	Strong social connections	RESPO 3	"Resilient students have a network of friends, family members, co-workers, and online support groups to keep them socially connected hence excel in their studies." (FGD, 2024)
	Survivor mentality	RESPO 4	"Resilient students avoid thinking like a victim of circumstance and instead look for ways to resolve the problem. While the situation may be unavoidable, they stay focused on a positive outcome in CBL." (KII, 2024)
Competency-Based Learning	Flexible and personalized learning	RESPO 5	"CBL is flexible to the students and where they are in the learning process. That means students are given the support they need individually to move forward and master the subject and inherent skills. Instead of moving forward based on age, students move forward based on where they are and what they are capable of." (FGD, 2024)
	Focus on learning outcomes	RESPO 6	"...in CBL, the focus is placed on deep understanding that is demonstrated through application hence learning outcomes are proven by action, and focus on building the skills students need to become better learners into adulthood." (KII, 2024)
	Challenges in implementation	RESPO 7	"...lack of enough time by teachers to teach the lessons within the prescribed time under the new curriculum," "...inadequate training of teachers," and "...costly workshops and teachers training." (FGD, 2024)

This table captures key themes and sub-themes derived from the qualitative data, providing a clear overview of student experiences related to perseverance and CBL.

Note. Source: Primary data (2024).

Note. KII = Key Informant Interview; FGD = Focus Group Discussion.

Hypothesis Testing

This study investigated the relationship between perseverance and Competency-Based Learning (CBL) in secondary schools in Mukono and Kayunga districts. The null hypothesis (H_{01}) stated that there is no significant relationship between perseverance and CBL, while the alternative hypothesis (H_{11}) proposed a significant positive relationship.

Regression analysis showed a positive coefficient of 0.516 and a p-value below 0.01, indicating significance at the 1%

level. As a result, the null hypothesis was rejected in favor of the alternative. This confirms that higher perseverance significantly predicts better CBL engagement. The R-squared value of 0.236 indicates that perseverance explains 24% of the variation in CBL, pointing to its importance while acknowledging that other factors also influence CBL outcomes.

5. Conclusion and Recommendations

5.1 Conclusion

The study highlights perseverance as a vital factor in enhancing competence-based learning (CBL) in Uganda's secondary schools. Although students generally respond positively to CBL, challenges such as inadequate teacher preparation and limited resources persist. Strengthening perseverance can significantly boost academic resilience and learning outcomes, particularly in Mukono and Kayunga districts.

5.2 Recommendations

Based on the findings, the following actions are recommended:

1. Foster a Culture of Perseverance

Teachers should be trained to promote perseverance through goal setting, growth mindset strategies, and helping students manage setbacks. Integrating perseverance-focused activities—like project-based learning and problem-solving—into the curriculum encourages students to persist in the face of difficulty.

2. Institutionalize Teacher Professional Development

The Ministry of Education and Sports should initiate continuous professional development programs centered on perseverance strategies. These should include emotional regulation techniques and collaboration with psychologists to tailor context-specific interventions.

3. Embed Resilience in the Curriculum

Perseverance-building elements such as real-life challenges and extracurricular activities should be systematically included in CBL. Schools must recognize and reward sustained effort to make resilience a core competency.

4. Promote a Growth Mindset

School leaders should encourage a whole-school culture where effort is valued over innate ability. Teachers must use language and feedback that frame challenges as opportunities for learning.

5. Implement Student Support Programs

Introduce structured interventions like mentoring, peer learning, stress management, and goal-setting programs to help students build perseverance and self-regulation.

6. Address Structural Barriers

To sustain perseverance, the government must enhance learning conditions by providing adequate resources, reducing class sizes, and managing teacher workloads.

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