# Impact of Cognitive Dissonance and Its Impact on Learning Effectiveness among University Students

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## Abstract

*This study explored the impact of cognitive dissonance on learning effectiveness among university students in Dar es Salaam. Specifically, the study assessed on whether a relationship exists between cognitive dissonance and of students effective learning. Additionally, it proposed strategies that educators and institutions can adopt to minimize the negative influence of cognitive dissonance on students' academic performance.The study employed a mixed-methods research approach, featuring an embedded design within a descriptive cross-sectional framework, combining quantitative data from 83 stratified undergraduate students with qualitative insights from three purposively selected student deans.Learning effectiveness was assessed through students' self-reported academic engagement, confidence in understanding course material, and emotional resilience in the face of academic challenges. Three emotional indicators were used to capture responses to cognitive dissonance: guilt or self-doubt following academic failure, psychological stress resulting from mismatched study habits, and emotional reactions to repeated poor performance such as discouragement or the urge to give up. Findings revealed that these emotional responses impair learning effectiveness by reducing motivation, confidence, and sustained academic engagement.*

*Students emphasized the need for active learning techniques, structured teaching, emotional support, and early intervention to improve academic resilience. The study recommends that universities integrate emotional resilience programs and early intervention mechanisms, adopt active learning methodologies, enhance instructional clarity, and expand psychosocial support services. These measures can foster a more*

*inclusive and effective learning environment for students navigating academic dissonance.*

*Keywords:* academic support, cognitive dissonance, higher education, learning effectiveness, university students

## 1.0 Introduction

Cognitive dissonance is increasingly recognized as a critical psychological factor influencing learning effectiveness in higher education (Köpeczi-Bócz, 2025; NeuroLaunch, 2025; Inside Higher Ed, 2025). University students often experience mental discomfort when confronted with ideas that challenge their existing beliefs, values, or academic expectations phenomenon that can hinder academic engagement (Harmon-Jones et al., 2015; Treacy & Leavy, 2023). Theinternal conflict, known as cognitive dissonance, affects students' motivation, concentration, and reflective thinking, all of which are key components for learning effectiveness (Geertshuis& Liu, 2024; Adcock, 2022). Understanding how cognitive dissonance shapes academic outcomes is essential for developing responsive teaching strategies and fostering inclusive learning environment.

Several studies have explored the relationship between cognitive dissonance and learning effectiveness (Köpeczi-Bócz, 2025; Abdul-Gafaar et al., 2024; Harmon-Jones et al., 2015; Treacy & Leavy, 2023; Geertshuis& Liu, 2024; Adcock, 2022; Balaman, 2020; Luintel& Timsina, 2024; Mjema, 2013; Mushimiyimana et al., 2022). Köpeczi-Bócz (2025) emphasized that structured exposure to dissonance can foster conceptual change, while Abdul-Gafaar et al. (2024) found that it influences students' acceptance of new

technologies. Harmon-Jones et al. (2015) proposed an action-based model highlighting dissonance as a motivational catalyst for behavioural change. Similarly, Treacy and Leavy (2023) showed how student perspectives can improve teaching practices through dissonance. Moreover, Geertshuis and Liu (2024) noted that unresolved dissonance diminishes motivation, while Adcock (2022) stressed the importance of structured reflection in transformative learning. Balaman (2020) and Luintel and Timsina (2024) both found that unresolved dissonance negatively impacts academic focus and emotional stability, leading to reduced learning effectiveness.

In Tanzania, research underscores similar issues, identifying cognitive dissonance as a key factor affecting university students' learning outcomes (Mjema, 2013; Mushimiyimana et al., 2022). Mjema (2013) connected cognitive dissonance theory to student unrest, revealing how institutional pressures contribute to disengagement. Mushimiyimana et al. (2022) found that unresolved tensions hinder the adoption of educational technologies essential for modern learning. These studies collectively highlight that unresolved dissonance leads to decreased motivation and resistance to innovation. However, effective pedagogical strategies can help students navigate dissonance productively, enhancing engagement and academic performance in higher education.

Despite the growing recognition of cognitive dissonance as a barrier to learning, Tanzanian universities lack targeted empirical studies that examine its direct impact on students' academic engagement and performance. Students in Tanzanian higher

education institutions face unique academic, cultural, and institutional pressures that may intensify cognitive dissonance and compromise their ability to learn effectively. This study was therefore motivated by the need to understand how unresolved cognitive dissonance contributes to academic disengagement, emotional discomfort, and reduced learning outcomes within the Tanzanian context. The problem addressed in this study is the lack of institutional strategies that recognize and respond to emotional discomfort as a barrier to learning effectiveness. Without such evidence, educators may overlook critical psychological factors that undermine learning outcomes. This gap in localized research presents an urgent need to investigate how cognitive dissonance manifests within Tanzanian higher education and to identify strategies that can mitigate its effects.

This study was therefore conducted to address the gap by examining how cognitive dissonance affects learning effectiveness among university students in Dar es Salaam. Specifically, it seeks to answer two guiding questions: firstly, how does cognitive dissonance affect learning effectiveness? Andsecondly, what strategies can educators and institutions use to reduce the impact of cognitive dissonance on learning effectiveness? By focusing on the Tanzanian context, the study aims to generate actionable insights that support inclusive, responsive, and culturally relevant teaching practices.

## 2.0 Materials and Methods

This section outlines the materials and methods used in the study on cognitive dissonance and its impact on learning effectiveness among university students

### 2.1 Research Approach and Design

This study employed a mixed-methods research approach to examine the influence of cognitive dissonance on university students' learning effectiveness. The rationale for this design stems from the complex and multifaceted nature of cognitive dissonance, which involves both measurable behavioural patterns and deeply subjective psychological experiences (Festinger, 1957). By integrating numerical data with students' lived experiences and institutional perspectives, the study sought to capture both the prevalence of dissonance-related learning challenges and the specific emotional and cognitive responses shaping academic engagement (Creswell & Creswell, 2018; Merriam & Tisdell, 2015).

An embedded design within a descriptive cross-sectional framework was adopted, combining quantitative data from 83 stratified undergraduate students with qualitative insights from three purposively selected student deans. This structure enabled a comprehensive analysis: survey results provided a broad overview of learning effectiveness, while the qualitative perspectives offered contextual depth into the factors influencing student experiences and outcomes.

### 2.2 Participants

#### 2.2.1 Target Population

The target population for this study comprised undergraduate students enrolled in selected universities in Dar es Salaam. This group was chosen because they represent diverse academic disciplines, gender categories, and levels of study, making them

suitable for examining how cognitive dissonance affects learning effectiveness in higher education.

### 2.2.2 Sample

From the target population, a total of 83 undergraduate students were selected to participate in the quantitative phase of the study. These students completed the structured questionnaire. In addition, three deans of students were included in the qualitative phase through interviews. Their participation provided institutional perspectives on student learning challenges and the role of cognitive dissonance in academic engagement.

### 2.2.3 Sampling Technique

A stratified sampling technique was used to select the student participants. This ensured balanced representation across gender, faculties, and academic years. For the qualitative component, purposive sampling was employed to select the three deans of students. They were chosen based on their institutional roles and direct insights into student learning challenges, which allowed the study to capture both individual student experiences and broader institutional perspectives.

### 2.3Data Collection Methods

Quantitative data were collected using a structured questionnaire designed to measure students' experiences of cognitive dissonance and perceived learning effectiveness. The questionnaire included Likert-scale items developed by the researcher. Qualitative data

were collected through semi-structured interviews with student deans, aimed at capturing institutional perspectives on how cognitive dissonance influences student engagement and learning. Interview guides were developed to ensure consistency while allowing flexibility for deeper exploration (Merriam & Tisdell, 2015).

### 2.4 Data Analysis and Ethical Considerations

Quantitative data were analysed using descriptive statistics and correlational analysis to examine patterns and relationships between students' experiences of cognitive dissonance and perceived learning effectiveness. These analyses provided insights into the strength and direction of associations among key variables. Qualitative data were analysed thematically to identify recurring concepts and institutional perspectives related to cognitive dissonance and student engagement.

Ethical clearance was obtained from the Dar es Salaam Tumaini University (DarTU) Ethical Research Committee. All participants were provided with informed consent outlining the purpose of the study, their rights, and data protection measures. Confidentiality and anonymity were rigorously upheld, and participation was entirely voluntary.

## 3.0 Results

This section presents descriptive findings from 83 university students enrolled in three Dar es SalaamUniversities. Participants represented several academic disciplines and levels. Gender distribution was approximately balanced, with 52% identifying as female and 48% as male. Ages ranged from 18 to 26 years, with a median age of 21. The

findings are organized into two thematic categories as per objectives including: examining how cognitive dissonance affects learning effectiveness among university students in Dar es Salaam and identifying strategies that educators and institutions can implement to mitigate its negative impact in higher education. Descriptive analysis has been presented using frequencies and percentages to highlight trends in student experiences and preferences in relation to objectives.

### 3.1 Relationship between Cognitive Dissonance and Learning Effectiveness

The purpose of this objective was to explore how students' emotional responses to academic inconsistency reflect cognitive dissonance and influence learning effectiveness.

#### 3.1.1 Quantitative Results

Three emotional indicators were assessed: guilt or self-doubt after academic failure, psychological stress due to mismatched study habits and performance, and discouragement following repeated poor academic performance. The results are presented in Table 1.

**Table 1**

*Cognitive Dissonance versus Academic Inconsistency (N = 83)*

| Emotional Indicator | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Guilt or Self-Doubt After Academic Failure | 2 (2.41%) | 4 (4.82%) | 10 (12.05%) | 24 (28.92%) | 43 (51.81%) |
| Psychological Stress Due to Mismatched Study | 5 | 1 | 11 | 28 | 38 |

| | | | | | |
|---|---|---|---|---|---|
| Habits | (6.02%) | (1.20%) | (13.25%) | (33.73%) | (45.78%) |
| Discouragement After Repeated Poor Performance | 0 (0.00%) | 4 (4.82%) | 14 (16.87%) | 34 (40.96%) | 31 (37.35%) |

Table 1 presents the frequency and percentage of student responses to three emotional indicators of cognitive dissonance. The majority of students either agreed or strongly agreed with each statement, reflecting widespread emotional discomfort associated with academic inconsistency. Values represent frequency counts followed by percentages in parentheses. No participants selected "Strongly Disagree" for the item on discouragement after repeated poor performance.

### 3.1.1 Qualitative Results

Interviews with student deans reinforced these results. Deans reported that unresolveddissonance often manifested as emotional disengagement, resistance to academic innovation, and reduced persistence. They identified repeated academic setbacks and unmet expectations as common triggers of discouragement. At the same time, they emphasized that supportive teaching practices and structured reflection opportunities could help students reframe dissonance as a catalyst for growth, thereby enhancing engagement and adaptability.

### 3.2 Psychological Stress Due to Mismatched Study Habits

#### 3.2.1 Quantitative Results

Among the 83 students, 66 (79.51%) agreed that mismatched study habits and academic intentions led to psychological stress. Of those, 38 students (45.78%) strongly agreed and 28 students (33.73%) agreed. Six students (7.22%) disagreed, and 11 (13.25%) responded neutrally. Table 2 summarizes these findings.

**Table 2**

*Psychological Stress Due to Mismatched Study Habits and Academic Intentions (N = 83)*

| Response | Frequency (N) | Percentage (%) |
|---|---|---|
| Strongly Disagree (1) | 5 | 6.02% |
| Disagree (2) | 1 | 1.20% |
| Neutral (3) | 11 | 13.25% |
| Agree (4) | 28 | 33.73% |
| Strongly Agree (5) | 38 | 45.78% |
| **Total** | **83** | **100%** |

Table 2 presents students' responses to psychological stress resulting from mismatched study habits and academic intentions.

### 3.2.2 Qualitative Results

Interviews with student deans revealed that mismatched study habits often created persistent stress and frustration, particularly when students' academic intentions were ambitious but unsupported by effective strategies. They emphasized that such stress frequently led to emotional disengagement and reduced persistence, mirroring the high levels of agreement reported in the survey. At the same time, deans highlighted that structured guidance, mentoring, and reflective practices could help students realign their study habits with academic goals, thereby reducing stress and improving overall learning effectiveness.

### 3.3 Discouragement After Repeated Poor Performance

Discouragement was reported by 78.31% of students following repeated academic failure. This finding is in consistent with Ajjawi et al. (2020), who observed that repeated failure increases emotional strain and disengagement. It also supports Gilar-Corbi et al. (2020) and Edwards and Ashkanasy (2018), who emphasize that, diminished self-efficacy and internalized failure negatively affect resilience and academic performance. The current study's results mirror these patterns, suggesting that emotional responses to failure are both widespread and impactful.

Thus, the findings are highly consistent with previous studies on cognitive dissonance and academic stress. The emotional indicators guilt, stress, and discouragement were all strongly supported by students and reflect well-established psychological patterns. These results reinforce the need for institutional strategies that address emotional well-being, promote adaptive study habits, and support students in managing academic setbacks.

### 3.3 Intervention Strategies to Enhance University Students' Learning Effectiveness

This objective sought to develop practical strategies to mitigate the adverse effects of cognitive dissonance and academic underachievement on students' learning effectiveness. The ultimate goal was to foster a supportive learning environment that promotes academic success and enhances overall learning outcomes. Respondents were asked: "What strategies do you suggest to deal with students' feelings of confusion so as to enhance learning effectiveness?"

### 3.3.1 Quantitative Results

Responses were categorized into four key themes: active learning techniques, counseling and support services, clear communication and structured teaching, and financial assistance, as illustrated in Figure 1.

**Figure 1**

*Strategies to Address Students' Feelings of Confusion*

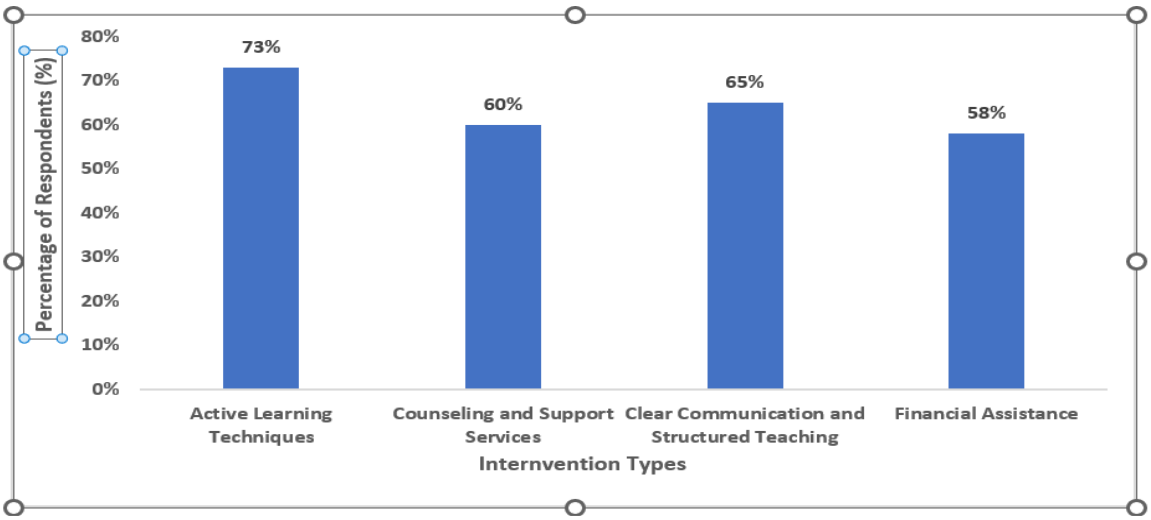



Figure 1 displays the percentage the percentage of students endorsing various strategies to address confusion.

The most frequently cited interventions were active learning techniques (73%), structured teaching (65%), counseling services (60%), and financial assistance (58%). These findings underscore students' strong preference for pedagogical clarity and active engagement over passive instructional methods. Although counseling and financial

support were slightly less emphasized, they remain critical in mitigating emotional and socioeconomic barriers to learning.

### 3.3.2 Qualitative Results

Interviews with student deans reinforced these quantitative findings. Deans emphasized that, pedagogical clarity and structured teaching were essential in reducing confusion and sustaining engagement. They observed that students often struggled when instructional methods were inconsistent or poorly communicated, leading to emotional fatigue and disengagement. Deans also highlighted the importance of counseling services and mentoring programs in addressing psychological stress, noting that emotional support not only reduced anxiety but also enhanced persistence. Furthermore, they pointed out that financial assistance was crucial for students facing socioeconomic challenges, as financial strain often compounded cognitive dissonance and hindered learning effectiveness. Overall, the qualitative insights advocate for a holistic institutional response that integrates instructional reform with robust psychosocial and financial support systems.

## 4.0 Discussion

This study shows how cognitive dissonance affects students' learning and what can be done to reduce its negative impact. By looking at both survey results and the views of student deans, the findings give a full picture of the emotional challenges students face and the kinds of support that can help.

### 4.1 Relationship between Cognitive Dissonance and Learning Effectiveness

The survey results showed that most students felt guilt, stress, and discouragement when their academic performance did not meet expectations. More than three quarters of the students reported these feelings. This supports Festinger's (1957) theory of cognitive dissonance, which explains how conflict between expectations and outcomes creates emotional discomfort. It also agrees with earlier studies (Salmela Aro & Nurmi, 2007; Eccles & Wigfield, 2002; Schunk & DiBenedetto, 2021) that link academic failure to burnout, lower confidence, and weaker learning. Interviews with deans confirmed this pattern. They explained that unresolved dissonance often leads to disengagement, resistance to new teaching methods, and reduced persistence. Together, these findings show that cognitive dissonance is not just a theory but a real issue that affects motivation and learning in universities.

### 4.2 Intervention Strategies

Students suggested several ways to reduce confusion and improve learning. The most common were active learning techniques, structured teaching, counseling services, and financial support. These results show that students want clear teaching methods and more active involvement in class. Deans also pointed out that counseling and mentoring programs help students manage stress, while financial support reduces the burden of economic challenges. Both findings highlight the need for universities to combine teaching reforms with strong emotional and financial support systems.

### 4.3 Relation to Previous Studies

The findings match Bran and Vaidis (2022), who argue that emotional discomfort from academic inconsistency reduces motivation. Rugira et al. (2013) found similar issues among Tanzanian students, showing the local relevance of these results. Neuroscience studies (Izuma& Murayama, 2017) also show that inconsistency can overload the brain and reduce focus. Kim and Bae (2020) found that emotional support lowers anxiety and improves performance. Campbell and Mogashana (2025) emphasized structured coaching models, which fit well with students' preference for clear guidance.

### 4.4 Implications

Overall, the study suggests that universities should use strategies that address both academic and emotional needs. By helping students reflect on challenges, offering mentoring, and using supportive teaching methods, institutions can turn dissonance into resilience and stronger engagement.

## 5.0 Conclusions

From the results of this study, it can be concluded that, cognitive dissonance is not just an emotional reaction but a real barrier to effective learning among university students. The majority of participants reported feelings of guilt, stress, and discouragement when their academic efforts did not match their expected outcomes. These emotions clearly reduced their motivation, confidence, and ability to engage with their studies.

Based on these findings, it is believed that improving learning effectiveness requires more than good teaching, it also demands attention to the emotional struggles the students face. The study shows that unresolved dissonance weakens academic resilience, so universities must respond by creating supportive environments that combine clear teaching methods, active learning strategies, and counseling services.

In the Tanzanian context, this conclusion is important because students often face additional cultural and institutional pressures that intensify dissonance. Therefore, this study insists that universities should treat emotional discomfort as a central issue in learning, not a side concern. By doing so, they can help students build resilience, regain confidence, and achieve long-term academic success.

## 6.0 Recommendations

The findings of this study underscore the need for a multi-dimensional institutional response to enhance university students' learning effectiveness. Based on emotional indicators of cognitive dissonance and the intervention strategies proposed by respondents, the following recommendations are made:

### 1. Introduce emotional resilience programs and early interventions

Universities should organize short training sessions on stress management, peer-support groups, and mentorship programs where senior students guide juniors. Early warning systems, such as monitoring repeated poor performance, should trigger counseling or academic coaching before problems escalate

**2. Adopt active learning and structured teaching methods**

Lecturers should use group discussions, case studies, and problem-solving activities instead of relying only on lectures. Clear course outlines, step-by-step instructions, and regular feedback will help reduce confusion and keep students engaged.

**3. Strengthen counseling and support services**

Counseling units should run workshops on coping with academic failure, time management, and self-confidence. They should also collaborate with faculties so that psychological support is embedded directly into the learning environment rather than being treated as separate.

**4. Revise institutional policies to recognize emotional barriers**

Universities should officially acknowledge that guilt, stress, and discouragement affect learning. Policies must allocate resources for counseling staff, peer mentoring programs, and financial aid schemes to ensure students receive both academic and emotional support.

**5. Encourage students to take responsibility for their learning**

Students should practice reflective study habits, such as keeping learning journals, setting personal goals, and reviewing progress regularly. They should also make use of counseling services, mentorship opportunities, and peer study groups to build confidence and resilience.

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