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Constructive and Timely Feedback as Drivers of Student Learning in Ghanaian Universities

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Abstract
Background: *Feedback is considered to be among the best tools to improve the student's learning in higher education. Very few studies have been conducted on the use of feedback by the university students in Ghana. The purpose of this research was to identify the ways that feedback was provided in Ghanaian universities, the extent to which feedback helped to improve learning and students' perceptions about the general feedback culture.*
Method: *A quantitative, cross-sectional survey approach was employed, collecting responses from 320 students across various universities in Ghana. Data were gathered using an online questionnaire and analyzed employing descriptive statistics, chi-square tests, the Kruskal–Wallis test, ordinal logistic regression, mixed-effects ordinal regression, and binary logistic regression.*
Findings: *The results reveal that written feedback (63%) is the primary mode of communication, while face-to-face feedback (58%) is preferred by students. The research findings identified discipline-specific feedback preferences, with students from Science and Technology disciplines using peer feedback at the highest rate (30%); whereas students from Humanities disciplines rely heavily on verbal feedback (58%). Also, the quality of different types of feedback differed with written feedback being positively correlated to having both constructive and balanced comments ($\chi^2 = 18.92$, $p = .041$). The ordinal logistic regression model was significant, $\chi^2 (8) = 42.10$, $p < .001$, indicating that the nature, frequency, and turnaround time of feedback are critical predictors of perceived usefulness. Constructive feedback significantly enhanced the probability of students perceiving feedback as beneficial ($\beta = 1.92$, OR = 6.82, $p < .001$), while frequent feedback similarly augmented perceived usefulness ($\beta = 1.05$, OR = 2.86, $p = .011$). In contrast, delayed feedback diminished perceived efficacy ($\beta = –0.85$, OR = 0.43, $p = .032$). Specifically, students who received constructive feedback were nearly six times more likely to view their institution's feedback culture as strong (OR = 5.89, $p < .001$), and if students received feedback within one week of submitting assignments, this increased the odds that the students would view their institutions' feedback culture as strong (OR = 3.21, $p < .001$). Furthermore, there were observed differences in what students valued as important aspects of feedback by academic level. Specifically, post-graduate students placed greater importance on constructive criticism (72% vs. 58%), and clarity (68% vs. 52%) compared to undergraduate students.*
Conclusion: *The research underscores significant deficiencies in the quality and consistency of feedback at Ghanaian universities. Enhancing feedback literacy among lecturers, reducing response times, and mitigating structural obstacles such as class size could improve the feedback culture and facilitate student learning.*
Key words: *Feedback practices, Higher education, Student perceptions, Feedback culture, Ghana universities*

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I. Background to the Study

Feedback is considered essential for successful teaching and learning in higher education, acting as a vital tool for promoting student growth and academic achievement. Hattie and Timperley (2007) emphasize the transformational potential of well-structured feedback, claiming that it may substantially enhance learning outcomes by identifying gaps in comprehension and guiding subsequent attempts. The effectiveness of feedback is not universal; it depends on the manner in which instructors provide it and how students interpret and respond to it. The intricate interaction becomes further complicated in many educational contexts such as Ghana, where institutional, cultural, and resource-related elements influence teaching approaches (Anning, 2024).

Recent research worldwide have highlighted the changing significance of feedback in higher education. Winstone and Carless (2019) contend that good feedback is not only a unilateral communication from educator to student, but rather a dialogic process necessitating active student involvement. Moreover, a well-organized feedback has shown the capacity to augment student engagement, elevate performance, and promote self-regulated learning (Evans, 2013; Nicol, 2021). This is clearly observed by Chan & Luo (2022) who concluded that students like feedback that is explicit, detailed, and implementable, allowing them to see their strengths and areas needing improvement.

Evidence from sub-Saharan Africa indicates that feedback techniques often fail to reach their potential owing to systemic limitations (Conn, 2017). The incorporation of Learning Management Systems (LMS) at the

tertiary level has revolutionized feedback delivery systems. Notwithstanding these insights, obstacles remain in the successful execution of feedback processes inside Ghanaian institutions. Large class numbers, insufficient resources, and disparate levels of teacher preparation might hinder the delivery of prompt and personalized feedback (Adarkwah et al., 2024). Confronting these difficulties requires institutional dedication to professional development, investment in educational technology, and the cultivation of a feedback culture that prioritizes continuous improvement and student-centred learning.

The importance of feedback in education is progressively acknowledged in Ghana. In the examined research, a continuous trend is evident: instructors acknowledge the need of feedback, although a persistent disparity exists between theoretical comprehension and actual implementation. For example, Bordoh (2021) demonstrated that teacher training participants recognized and could articulate success criteria and were able to attempt to provide feedback that was aligned with instructional objectives; however, they lacked the deeper understanding necessary to utilize formative assessment effectively. These findings mirror those of Enu and Ngcobo (2022); which were based upon their work with Mathematics Teacher Educators, who had a high degree of theoretical understanding of the concept of feedback yet could not translate that theoretical understanding into classroom practice. Both of the above studies demonstrate an implementation deficit, indicating that feedback literacy, rather than simply being aware of the concept of feedback, is a critical area of weakness in teacher preparation.

Ampofo's (2020) study reinforces the potential of effective feedback to enhance educational outcomes by demonstrating measurable gains in student achievement when feedback is used to guide learning changes. Like the previous studies, Ampofo's study is also grounded in pre-tertiary education. As such, collectively, this body of research highlights an even greater limitation of prior research that most of what has been studied regarding feedback practices has been completed in either among trainee teachers or in specialized subjects, and thus provides very little insight into the diversity of cross-disciplinary feedback cultures. While the behaviours of lecturers in providing feedback have been well-documented, both the perceptions, engagement, and utilization of feedback by students have received much less attention. In addition, longitudinal understanding of how the need for feedback evolves as students' progress through different levels of learning is virtually non-existent.

Studies at the tertiary level extend the discussion, but find similar constraints in the use of feedback. However, Butakor (2016) indicated that instructional activities, characteristics of tasks, the validation of reasoning, and methods of delivery are all key elements in providing effective feedback. Additionally, Anderson and Ayaawan (2023) indicated that university instructors often restrict the function of feedback to correcting language, limiting its ability to support higher order thinking. Taken together, these studies indicate that feedback is primarily viewed as a procedure rather than as a means to promote cognitive growth.

The use of digital learning environments presents another layer to the study. Attiogbe (2020) stated that feedback provided via Learning Management Systems (LMS) tends to be corrective and prescriptive, and lacks interaction and personalization. The same conclusions were drawn by Boateng, Tutu, and Boateng (2021); which noted that while digital platforms allow for the dissemination of feedback, the depth of engagement remains suboptimal. Other tertiary-level studies add to the picture of feedback in tertiary education. For example, Jujugenia et al. (2021) found that written feedback primarily focused on content and structure, and offered very little support for self-assessment and critical thinking. Similarly, Eshun (2025) found that cultural and relational issues, including mistrust and bias in student evaluations, can impede feedback exchanges. Conversely, Attiogbe et al. (2025) determined that time, style, quality and quantity affect learning, and that whether the focus of the feedback is on the individual or group is irrelevant, and raises interesting questions as to whether personalized feedback should take precedence over group-focused feedback in large classes.

Taken together, these studies reveal a consistent pattern: although the significance of feedback is broadly recognized, its execution is hindered by conceptual deficiencies, restricted interactivity, and contextual limitations. Pre-tertiary education underscores the theoretical-practical dichotomy, while tertiary education accentuates limited interpretations of feedback and the underutilization of digital capabilities. Additionally, few studies centre the perceptions of students and/or examine feedback as part of a larger learning culture; thereby, creating a significant knowledge gap that the current research aims to fill. Specifically, the study seeks to: (1) examine how the nature, frequency, and timeliness of feedback predict student perceptions of feedback usefulness and (2) investigate the influence of feedback quality on the perceived feedback culture in Ghanaian universities.

II. Literature Review

2.1 *Theoretical Perspectives*

Feedback is characterized as a process wherein learners interpret information from several sources and use it to improve their work or learning methodologies. This definition transcends the idea that feedback primarily involves instructors communicating students' strengths, flaws, and improvement strategies, emphasizing the pivotal role of students in interpreting and using feedback to enhance future work (Boud and Molloy, 2013; Carless, 2015).

Feedback in higher education is fundamentally grounded on many theoretical frameworks that clarify its significance in learning and growth. At the core of this discussion is Hattie and Timperley's (2007) feedback model, which asserts that successful feedback responds to three fundamental questions: "Where am I going?" (feed-up), "How am I going?" (feed-back), and where to next?" (feed-forward). A notable model is the Feedback Intervention Theory (FIT) introduced by Kluger and DeNisi (1996). FIT posits that feedback impacts learning by focusing attention on certain performance elements, thereby influencing motivation and behaviour. Another notable paradigm is Sadler's (1989) Formative Assessment Theory, which emphasizes the need for students to comprehend the required standards, evaluate their present performance against these standards, and undertake steps to bridge the gap. Sadler contends that successful feedback must provide information that enables students to enhance their work, so promoting self-regulated learning. Nicol and Macfarlane-Dick's (2006) model delineates seven principles of effective feedback practice: clarifying exemplary performance, facilitating self-assessment, delivering high-quality information, fostering dialogue, enhancing motivation, offering opportunities to bridge gaps, and utilizing feedback to inform instruction. This model highlights the complex structure of feedback and its function in fostering autonomous learning.

Feedback in higher education appears in several forms, each characterized by unique distribution mechanisms. Feedback is often classified as formative or summative. Formative feedback, provided during the learning process, seeks to facilitate improvement, while summative feedback, often associated with grades, assesses finalized work (Winstone & Carless, 2019; Morris, Perry & Wardle, 2021). Although summative feedback aids students in comprehending their overall performance, it is often criticized for being retroactive rather than developmental, since it fails to provide possibilities for immediate improvement.

Delivery methods further vary these categories: written assessments on tasks, verbal feedback in class, or digital evaluations through learning management systems. Verbal feedback is often situated within the framework of discourse. From this viewpoint, feedback is seen as a 'maneuver' inside a dialogic teaching and learning framework (Hennessy et al., 2016; Perry et al., 2020). Feedback may include a basic assessment of accuracy, the identification of aspects of a response that need improvement, reference to previous contributions, and solicitation of thoughts or suggestions. Written feedback may consist of corrections, annotations, remarks, inquiries, objectives, and strategies intended to foster written discourse (Suci et al., 2021). Written feedback primarily aims to provide corrected insights and additional information to enhance student comprehension rather than to guide instructional practices (Zheng & Yu, 2018).

Moreover, electronic feedback, provided via digital platforms like learning management systems or email, has been increasingly significant in recent years. It offers the benefits of efficiency and accessibility, enabling educators to use multimedia components like audio or video recordings to improve intelligibility (Henderson et al., 2019). A crucial disparity in feedback procedures pertains to its emphasis. Directive feedback clearly specifies the necessary changes for students and the methods to implement them, often adopting a corrective stance (Hammond & Moore, 2018).

The efficacy of feedback in higher education is contingent upon several elements, including precision, timeliness, clarity, and its capacity to involve students in the learning process. Research demonstrates that feedback is most efficacious when it offers explicit, practical instructions instead than ambiguous remarks (Hattie & Timperley, 2007). A meta-analysis conducted by Wisniewski et al. (2020) substantiates this, revealing that feedback aimed at enhancing task performance has effect sizes almost double those of nonspecific commendation. Targeted feedback enables pupils to comprehend precisely which elements of their work need enhancement and the methods to implement those modifications (Brookhart, 2017). Conversely, vague remarks like "requires further analysis" or "argument lacks clarity" may perplex pupils about subsequent actions. Furthermore, prompt feedback facilitates learning by enabling students to implement quick modifications, therefore reinforcing ideas while they remain relevant (Evans, 2013).

Constructiveness is a vital factor affecting the efficacy of feedback. Research indicates that feedback must achieve a balance between positive reinforcement and constructive criticism. Excessively critical feedback may dishearten students and result in disengagement, whilst too favorable feedback may lack sufficient guidance for development (Winstone & Nash, 2016). Involving students in feedback conversations, rather than only providing remarks, amplifies its effectiveness. Nicol (2010) emphasizes the significance of dialogic feedback, when students actively evaluate and engage with input instead of passively absorbing it. When students see feedback as an integral component of a continuous learning dialogue, they are more inclined to use it successfully to enhance their comprehension and abilities.

Notwithstanding the significance of feedback, higher education educators encounter several obstacles in delivering high-quality, substantive replies to student assignments. A major obstacle is time limitations. Educators often conduct extensive courses and handle substantial workloads, hindering their ability to provide personalized and comprehensive feedback to every student (Boud & Molloy, 2013). Consequently, comments may be succinct, generic, or tardy, diminishing its efficacy. Certain instructors use standardized remarks or automated feedback methods, which, while efficient, may lack the necessary depth to enhance student learning (Henderson et al.,

2019). A further problem is student involvement with feedback. Research indicates that not all students engage with the feedback provided, as some disregard comments or neglect to implement recommended enhancements (Winstone et al., 2017). This disengagement may arise from ambiguous input, a deficiency in confidence on its interpretation, or the belief that the feedback is unhelpful. Certain students concentrate only on grades, seeing feedback as an assessment rather as a mechanism for development (Carless, 2015).

Technological improvements have created new possibilities and obstacles in the provision of feedback. Digital platforms provide expedited and more engaging feedback mechanisms, including audio and video commentary, peer review systems, and AI-generated feedback tools (Henderson et al., 2019). The efficacy of these instruments is contingent upon their deliberate incorporation into pedagogical methods. Technical constraints, insufficient training, and disparate levels of digital literacy among instructors and students might impede effective adoption. Although technology might improve the accessibility of feedback, it must not supplant the nuanced, individualized exchanges that students often deem most advantageous.

2.2 *Empirical Review*

In the analysed research, feedback is identified as a multifaceted construct influenced by instructor proficiency, student involvement, and the overall educational context. All studies acknowledge the significance of feedback in learning; however they vary in their conceptualization of its aim, delivery, and effects.

Tam (2025) has shown that the variety of teacher feedback orientations can range from knowledge centred and socially mediated to relationship building and technology driven. In contrast, Rajapakse (2024) focuses on the developmental role of feedback for enhancing student learning through ongoing improvement, reinforcing strengths, and adapting instruction to meet the needs of students. Both studies have indicated that effective feedback extends beyond correction. Rawal (2023) provides an additional perspective that complements the perspectives of Tam and Rajapakse. He observed that students will engage in seeking and initiating feedback discussions and view feedback as a means to communicate with teachers to support their autonomy and understanding. In addition, the studies by Câmpean et al. (2024) and Hobson (2024) suggest that positive feedback has a significant effect on student motivation and academic performance. Both studies demonstrate the importance of intrinsic motivation, a supportive climate, and consistent long-term feedback to enhance student engagement and academic success.

The study by Moussa, Fisher and Eddahmani (2024) expands the research by examining cross-cultural comparisons. The authors' findings mirror many of the previous studies but also reveal systemic barriers such as time and pressure to conform to institutional expectations. Finally, the study by Khursheed and Alwi (2023) supports the developmental orientation of Rajapakse by indicating that formative feedback improves student self-regulation and academic performance. Similar to the motivational enhancements reported by Câmpean et al. (2024) and Hobson, the study by Khursheed and Alwi also differed from Rawal's findings in that the study emphasized the use of structured assessment procedures versus student-initiated engagement.

Together, the studies indicate that clear, continuous, and supportive feedback is essential for motivating students and improving their academic performance. In contrast to the similarity in the overall message across the studies, there was considerable variation in what specific aspect of the process was being emphasized including teacher orientations, learner interpretations, emotional reinforcement, and system constraints. Further, the studies indicate that successful feedback is dependent on the presence of both high levels of teacher feedback literacy and active student engagement in the process.

2.3 *Study's Conceptual Framework*

This study's conceptual framework combines theoretical and empirical insights to analyse the relationship between feedback practices and student learning outcomes in Ghanaian higher education. Based on Hattie and Timperley's (2007) feedback model and Nicol and Macfarlane-Dick's (2006) self-regulated learning theory, the framework asserts that feedback is a complex process shaped by instructor practices, institutional environment, and student reactions. These behaviours are influenced by educators' feedback literacy, including their knowledge, attitudes, and abilities in providing feedback (Tam, 2025), and are affected by contextual variables such class size, resource availability, and cultural norms. Further, the effectiveness is influenced by student feedback literacy, which refers to their capacity to comprehend and respond to feedback (Winstone et al., 2021), and is affected by challenges faced by educators, such as huge cohorts, time limitations, and insufficient training (Abakah, Widin & Ameyaw, 2022). The paradigm posits a bidirectional relationship: successful feedback improves student results, while student reactions shape subsequent feedback practices.

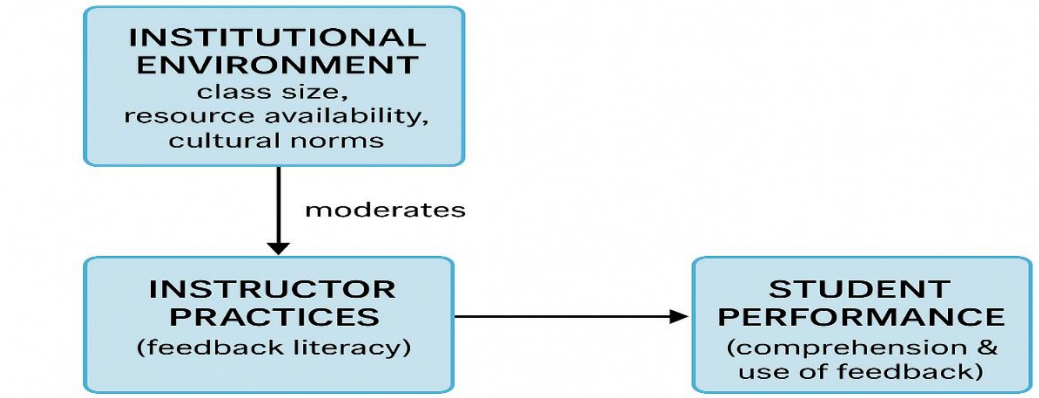

Fig 1: *Conceptual Framework*

III. Methods

This study used a quantitative, cross-sectional research methodology to investigate the feedback practices of university professors in Ghana and their effects on student learning. A cross-sectional technique is suitable since it facilitates data gathering at a single moment, offering a picture of feedback practices and student perspectives (Creswell & Creswell, 2023). The target demographic consists of university students in Ghana attending both public and private universities. This group is optimal since students get direct feedback from lecturers, offering significant insights into its characteristics and impacts. Ghana's colleges and universities education system comprises more than 70 institutions, with a student population of over 500,000 (Tanko et al., 2017; Arthur & Arthur, 2016).

A random sample method was used to improve generalizability, guaranteeing that each student gets an equal opportunity for involvement. The research included only students who are willing to participate in the online questionnaire.

Online surveys are acknowledged as effective instruments for gathering data from extensive and varied student demographics while preserving anonymity (Evans & Mathur, 2023).

The sample size was calculated using a 5% margin of error at a 95% confidence level. Cochran's (1977) formula for sample size is used for an unspecified population. This resulted in a minimum sample size of 384. The research seeks to achieve a higher sample size of around 500 respondents to guarantee robustness in statistical analysis, including subgroup comparisons. This is far above the level suggested by Tabachnick and Fidell (2019) for dependable inferential statistics, accounting for possible non-responses in online surveys. Data was gathered using an online questionnaire conducted on the Google Forms platform. The questionnaire had three sections: (1) Lecturers' Feedback Practices, (2) Effectiveness of Feedback on Learning, assessing effects on learning, engagement, and academic achievement; and (3) Students' Perceptions. Both descriptive and inferential statistics were used for data analysis.

Descriptive statistics, including frequencies, means, and standard deviations, were used to summarize data. Inferential statistical methods, such as regression analysis and t-tests, were used to analyze the correlations between feedback practices and student learning results. Employing statistical approaches guarantees that results are data-driven and broadly applicable (Field, 2023). As part of the inferential analysis, a number of statistical tests were used for each objective of the study using the following analysis. Chi-square tests of independence were used to test relationships between categorical variables (e.g., feedback benefits and level of study) and the Kruskal–Wallis test, the non-parametric test alternative to ANOVA was used to compare feedback culture across academic disciplines, capturing differences in median ranking, without assuming the data was normally distributed. Also, to investigate predictive relationships, a series of regression models were used. Ordinal logistic regression was completed to assess the feedback type, frequency of feedback and turnaround time on students' feedback of usefulness. In this model, the effectiveness of feedback was proxied by students' reported usefulness of feedback (Q10), making it a robust indicator of perceived learning impact. An ordinal logistic regression is appropriate when the outcome has an ordered outcome variable and can provide estimates of odds-on predictors in higher usefulness categories (Agresti, 2010). Further, to investigate what impact class size had on feedback turnaround time, a mixed-effects ordinal regression was employed with the university as a predilection random effect. This takes into consideration Institutional variance and increases validity of the estimates across the contexts. Mixed-effects models are especially beneficial for data exhibiting hierarchical structures, such as students nested within universities (Gelman & Hill, 2006). Finally, a binary logistic regression was used to investigate what influenced students' perceptions of robust or effective feedback culture among Ghanaian universities; because the outcome variable was binary (strong or not sufficient), a binary logistic regression was

appropriate for producing odds ratios for strong feedback culture (Hosmer et al., 2013). The model's fit was assessed by Nagelkerke R^2 and the Hosmer–Lemeshow goodness-of-fit test, which respectively quantify explanatory power and calibration accuracy (Hosmer, Lemeshow, & Sturdivant, 2013).

IV. Results

Demographic Profile of Participants

Table 1 present the demography of the study's population. As shown on the table, the sample comprised of 320 university students from Ghana, representing various levels of academic progress, disciplines of study and institutions.

Table 1. *Demographic Profile of Participants*

Variable	Category	n	%
1. Level of Study	Undergraduate (Year 1)	35	11.0%
	Undergraduate (Year 2)	61	19.0%
	Undergraduate (Year 3)	61	19.0%
	Undergraduate (Year 4)	89	28.0%
	Postgraduate	74	23.0%
2. Field of Study	Humanities and Social Sciences	99	31.0%
	Business and Economics	77	24.0%
	Science and Technology	64	20.0%
	Medicine and Health Sciences	35	11.0%
	Law	16	5.0%
	Engineering	13	4.0%
	Education	10	3.0%
	Other (e.g., Ports/Shipping)	6	2.0%
3. Typical Class Size	< 30 students (M = 15)	64	20.0%
	31–60 students (M = 45.5)	99	31.0%
	61–100 students (M = 80.5)	80	25.0%
	> 100 students (M = 150)	77	24.0%
	Mean Class Size		73.0
4. University Affiliation	University of Ghana	48	15.0%
	Kwame Nkrumah University (KNUST)	32	10.0%
	University of Cape Coast (UCC)	16	5.0%
	Mountcrest University College	16	5.0%
	Other (55 institutions)	208	65.0%

From the table, based on the level of academic progress, most of the students were undergraduates, and the vast majority identified as Year 4 at (28%), followed closely by Year 2 (19%) and Year 3 students also at (19%). Moreover, 23% were postgraduate students. When considering field of study, the greatest proportion of students were from the Humanities and Social Sciences, constituting 31% on the total. The next largest group was Business and Economics, comprising 24%, followed by Science and Technology, which constituted 20%. Medicine and Health Sciences, accounted for 11%, followed by Law (5%), Engineering (4%) and Education (3%). A minimal 2% reported other programs (e.g. Ports and Shipping). The distribution of participants also considered class size, which indicated that, for most students, classes sizes were classified as medium to large. Approximately 31% of participants reported that their typical class size was between 31 - 60 students, 25% reported typical class sizes of 61 - 100 students, and 24% reported they normally had 100 or more students. 20% reported that their classes had fewer than 30 students overall. Overall, the mean estimated class size for the sample of students was 73, which implies a large class predominance.

The participants were sampled from a number of institutions. Of these, sixty-five percent were associated with institutions outside the top four universities. University of Ghana students, constituted 15% of the sample, Kwame Nkrumah University of Science and Technology (KNUST), made up 10%, and University of Cape Coast (UCC) and Mountcrest University College each made up about 5%. Overall, the demographic profile shows that this was a diverse sample, based on the degree of academic progression, discipline and institution, and shows that most the students were working in large classes, while coming from a diverse educational context.

Types and Methods of Feedback Used by University Educators in Ghana

The first research question sought to examine the various methods of feedback employed by universities in Ghana. The results are presented in Table 2.

Table 2. *Feedback Practices in Ghana's Universities (n = 320)*

Feedback Dimension	Category	n	%
Feedback Frequency	Rarely	48	15%
	Sometimes	144	45%
	Always	128	40%
Types of Feedback Received†	Written feedback (comments)	202	63%
	Verbal feedback (discussions)	151	47%
	Peer feedback (classmates)	42	21%
	No feedback provided	3	1%
Nature of Feedback	Constructive and helpful	102	32%
	Balanced (strengths and weaknesses)	67	21%
	Too general and lacks detail	83	26%
	Inconsistent (varies by lecturer)	35	11%
	Mostly negative and discouraging	35	11%
Timing of Feedback	Less than a week	128	40%
	1–2 weeks	128	40%
	3–4 weeks	64	20%
Preferred Feedback Methods†	Face-to-face discussions	186	58%
	Written comments	170	53%
	Online platforms	80	26%
	Group feedback sessions	51	16%

† Multiple responses allowed; percentages may exceed 100%.

The findings as shown on Table 2 demonstrate the variety of experiences students have with feedback practices at universities in Ghana. On the issue of frequency of feedback, 45% of students indicated they receive feedback "sometimes", and 40% said they "always" receive feedback. Only 15% of students said that they "rarely" receive feedback. On the issue of feedback types, students received written feedback most often (63%), followed by individual and group verbal discussions (47%). Peer feedback was the next least common kind of feedback (21%) while only 1% of students indicated they had received no feedback at all. In relation to the way feedback was described by students, around one-third indicated the feedback was constructive and helpful (32%), while 26% of respondents said it was too general a feedback response. Further, 21% indicated they received feedback that was in balance, while 11% each said it was either inconsistent or mostly negative and discouraging. On the timing of feedback, 40% of participants said they received feedback in a week, another 40% were in the longer timeframe of one-two weeks, and 20% were waiting for up to four weeks. On the issue of preferred methods of feedback, there seems to be a leaning toward interpersonal forms of feedback.

As per the table 2, the preferred methods were face-to-face discussion (58%) and written feedback comments (53%), nine students indicated online with open space and eleven of the respondents said group

feedback (26% and 16%, respectively). The results indicate there is a relatively positive, albeit patchy, landscape of feedback practices in universities and preference for timely, situated and dialogical forms of feedback practices.

Effectiveness of Feedback in Enhancing Student Learning

The second research objective sought to evaluate the feedback effectiveness with user-reported frequency, turnaround time, and the nature feedback. An ordinal logistic regression model was used to analyse the following predictors: nature of feedback (Q7), frequency of feedback (Q5), and turnaround time of receipt of feedback (Q8). The outcome variable was usefulness of feedback (Q10), which was employed as a proxy for feedback effectiveness. This model of predictors was theoretically and empirically justified. Nature of feedback is the focus of research since constructive and balanced feedback was associated with beneficial outcomes in the student's understanding and motivation (Carless & Winstone, 2023). Frequency of feedback is similarly critical, because frequent opportunities to receive and act on feedback increases engagement in learning activities (Evans et al., 2021). Similarly, turnaround time is vital, because timely feedback affords students the opportunity to integrate any comments when completing subsequent tasks, resulting in improved student achievement (Boud & Molloy, 2013). Finally, usefulness of feedback is the one that encapsulates student evaluation of whether the feedback is helping their learning, and therefore a valid surrogate for effectiveness (Winstone & Carless, 2019). The results is summarised on Table 3 below.

Table 3 *Logistic Regression on Effectiveness of Feeback*

Variable	***Coefficients***		
	β	**(OR)**	**p-value**
Predictor Variables			
Nature: Constructive/Helpful	1.92	6.82	< .001
Nature: Balanced	1.20	3.32	.003
Frequency: Always	1.05	2.86	.011
Turnaround Time: < 1 week	0.98	2.66	.023
Turnaround Time: 3–4 weeks	–0.85	0.43	.032
Model Summary			
	Nagelkerke Pseudo R^2	.38	
	Model Fit:	$\chi^2(8) = 42.1, p < .001$	

The ordinal logistic regression model was statistically significant, $\chi^2(8) = 42.10, p < .001$. This indicates the predictors reliably differentiated between levels of perceived feedback utility. Nagelkerke Pseudo R^2 for the model was .38 which indicates 38% of the variation in feedback utility is explained by the model. Following Cohen (1988), pseudo-R^2 values of .02, .13, and .26 are marked small, medium and large, so the value of .38 demonstrates a strong capacity to explain variance in an educational research context. Pseudo R^2 values reported from similar feedback studies in higher educational contexts have been reported between .20 and .40, and are interpreted as acceptable to strong levels of explanatory power (Boud & Molloy, 2013; Carless & Winstone, 2020). The likelihood ratio chi-square test ($\chi^2(8) = 42.10$, $p < .001$) indicated that the model with predictors exhibited a considerably superior fit compared to the null model.

The model's fitness at this level satisfies known benchmarks, since a substantial chi-square test indicates that the incorporation of predictors significantly enhances explanatory power relative to a baseline model (Hosmer, Lemeshow, & Sturdivant, 2013).

Further, nature of feedback was a strong predictor. Students that received constructive feedback and helpful feedback had significantly higher odds ($\beta = 1.92$, OR = 6.82, $p < .001$) of rating feedback as "Very Useful" than students that received mostly negative feedback. Also, students who had feedback that was balanced (indicating strengths as well as weaknesses), had 3.3 times greater odds of reporting feedback as very useful ($\beta = 1.20$, OR = 3.32, $p = .003$). The results also indicate that feedback frequency impacted perceived usefulness. The students reporting 'always', feedback had nearly three times the odds of that student rating feedback as very useful, compared to students receiving feedback at all or rarely ($\beta = 1.05$, OR = 2.86, $p = .011$). Turnaround time, also made a significant contribution. Compared to the students receiving feedback in less than one week, The students receiving feedback after 3 - 4 weeks had significantly lower odds of perceiving the feedback as useful (β

= - 0.85, OR = 0.43, p = .032), which relates to a 57% decrease in usefulness. This outcome demonstrates the importance of constructive, timely, and consistent feedback to student's perceptions of usefulness.

Students' Perceptions of Feedback Practices in Ghanaian Universities

The final research question of the study explored students' overall perceptions of feedback practices within Ghanaian universities. A binary logistic regression was performed to investigate the drivers of students' perceptions regarding a robust or effective feedback culture in Ghanaian colleges. As shown on Table 4, the model exhibited substantial explanatory power, evidenced by a Nagelkerke R^2 of .42. The Hosmer–Lemeshow goodness-of-fit test further demonstrated that the model adequately fits the data, $\chi^2(8) = 6.15, p = .63$.

The findings indicated that obtaining prompt feedback (within one week) markedly enhanced the likelihood of recognizing a robust feedback culture (OR = 3.21, 95% CI [2.15, 4.80], $p < .001$). Similarly, students who obtained constructive feedback were almost six times more inclined to indicate a robust culture (OR = 5.89, 95% CI [3.92, 8.85], p < .001), while those who received balanced feedback were also significantly more likely to recognize a strong feedback environment (OR = 2.45, 95% CI [1.60, 3.75], $p = .002$). In terms of academic discipline, students in the Humanities were markedly less like to describe a robust feedback culture than their STEM counterparts (OR = 0.65, 95% CI [0.48, 0.88], $p = .012$). No significant difference was noted between Business students and STEM students (OR = 0.82, $p = .210$). The findings highlight the essential influence of feedback quality and timeliness on students' impressions of institutional feedback culture, revealing significant variations throughout academic disciplines.

Table 4. *Logistic Regression Predicting Strong Feedback Culture*

	Test Statistics		
	Odds Ratio	**95% CI**	**p-value**
Predictor			
Timeliness (<1 week)	3.21	[2.15, 4.80]	< .001
Constructive Feedback	5.89	[3.92, 8.85]	< .001
Balanced Feedback	2.45	[1.60, 3.75]	.002
Field: Humanities vs. STEM	0.65	[0.48, 0.88]	.012
Field: Business vs. STEM	0.82	[0.60, 1.12]	.210
Nagelkerke R^2			**.42.**
Hosmer-Lemeshow Test			**$\chi^2(8) = 6.15$, p = *0.63***

V. Discussions

This research explored the feedback practices in Ghanaian universities from the perspectives of students, using a sample of 320 students from various institutions. The results are organised into four overarching thematic categories, commencing with the types and techniques of feedback and their correspondence with recognised best practices.

The findings indicate that written feedback (63%) is the predominant manner of delivery, whereas face-to-face feedback (58%) is favoured by students. This pattern demonstrates a dual dependence on conventional writing methods while recognising the significance of interpersonal dialogic input. Field-specific discrepancies were noted: students in science and technology exhibited the highest utilisation of peer feedback (30%), whilst those in the humanities predominantly depended on verbal feedback (58%). Furthermore, the quality of feedback varied by kind; thus, written feedback was more closely linked to constructive and balanced content ($\chi^2 = 18.92$, p = .041), whereas peer feedback was often criticised for its superficiality, with 40% of respondents labelling it as "too general."

These results corroborate findings from earlier studies in the Ghanaian context, which examined the pervasive use of written feedback or written feedback in higher education assessment (Owusu-Tabiri et al., 2025), but also identified a lack of dialogue potential. Students have articulated discontent with feedback that is either tardy or excessively generic, corroborating the current finding concerning the insufficiency of peer feedback Globally, Carless and Boud (2018) indicate written feedback is certainly important, but will never be enough unless used in conjunction with dialogue and opportunities for clarification; Nicol (2010) and Dawson et al. (2019) offer examples of why dialogic and interactive feedback are engaging and foster self-regulation of learning, hence explaining the preference for face-to-face approaches reported by students in this study.

The academic distinctions noted, including a heightened need on peer feedback in science and technology and verbal feedback in the humanities, reflect patterns documented in international studies. For instance, Ajjawi

and Boud (2017) illustrate that STEM disciplines frequently utilise peer and collaborative feedback methods owing to their laboratory and group-oriented learning frameworks, while the humanities prioritise discursive and interpretative techniques conducive to oral feedback. In the African setting, Metu et al. (2024) emphasise that resource constraints in Ghanaian and Nigerian institutions have led to a dependence on verbal feedback in humanities and social science courses, particularly due to large class sizes that limit written evaluations. This study's correlation between written feedback and constructive, balanced evaluations corresponds with the effective feedback principles articulated by Hattie and Timperley (2007), who assert that specificity, balance, and an emphasis on improvement are characteristics of high-quality feedback. The observed inadequacy of peer feedback prompts enquiries regarding the scaffolding of peer assessment. This aligns with Topping's (2018) results, which warn that inadequate training and leadership might lead peer feedback to devolve into shallow or excessively pleasant remarks devoid of meaningful insights.

Further, the findings demonstrate that feedback is not only prevalent in Ghanaian higher education but also effective in enhancing student learning. The ordinal logistic regression model demonstrated statistical significance, $\chi^2(8) = 42.10$, $p < .001$, with the predictors—nature of feedback, frequency, and turnaround time—identified as relevant factors. Constructive and comprehensive feedback significantly enhanced the likelihood of students considering feedback as beneficial ($\beta = 1.92$, OR = 6.82, $p < .001$). Consistently providing feedback enhanced perceptions of utility ($\beta = 1.05$, OR = 2.86, $p = .011$), whereas prolonged response durations diminished perceived efficacy ($\beta = -0.85$, OR = 0.43, $p = .032$).

These outcomes align with the pioneering research of Hattie and Timperley (2007), who confirmed that high-quality feedback is one of the most significant influences on learning and achievement. The strong predictive capacity of nature of feedback corresponds with relevant international studies (Carless & Boud, 2018; Dawson et al., 2019), which indicate that feedback must be actionable, constructive, and balanced to support learning meaningfully. Black and Wiliam (1998), in their influential review, showed that formative assessment is one of the most valuable ways to foster improvement of student learning. Regular feedback facilitates ongoing adjustment and rectification, averting students from ingraining errors or misinterpreting concepts for prolonged durations. In Ghana and South Africa, Maphoto (2021) and Attiogbe (2020) identified analogous trends, revealing that students appreciated comprehensive feedback providing explicit guidance for enhancement, in stark contrast to their dissatisfaction when input was ambiguous or non-existent.

The influence of frequency also reflects global academic discourse. Regular, iterative feedback is regarded as crucial in formative assessment procedures, promoting student involvement and self-regulation (Nicol, 2010; Topping, 2018). Gibbs and Simpson (2004) delineated the conditions that facilitate assessment in promoting learning. A crucial requirement is that feedback is sent regularly and with sufficient information to facilitate action. In the Ghanaian context, it is often mentioned that irregularity and time delays in providing feedback acts as a barrier to effective learning (Essel et al. 2020); this makes it even more pertinent. The adverse impact of return time underscores the significance of timeliness as a vital aspect of feedback efficacy. Evidence from Mullet et al. (2014) support that delayed feedback reduces its effectiveness because students cannot use the feedback in the forthcoming performances for tasks. Fakhri et al. (2024) emphasise that feedback must be prompt to facilitate a continuous discussion between learners and teachers. The findings indicate that feedback needs not only to be constructive and detailed but it also needs to be timely and frequent for it to be effective at Ghanaian universities.

The study provides evidence that students' perceptions of feedback culture differ by academic field, with STEM fields reporting greater feedback culture (42%) than the humanities (28%), a difference supported by the Kruskal−Wallis ($H = 15.72$, $p = .003$) test. Perhaps the feedback practices in STEM fields were more structured or systematic than in humanities fields due to more systematic monitoring of learning and assessment of learning in more structured, closed laboratory learning environments. However, humanities students perceived lower feedback culture, which may have been the result of larger class sizes and more subjective assessments of learning. The findings correspond with Bardoe et al. (2023), who observed disciplinary discrepancies in Ghanaian higher education, indicating that feedback systems are more developed in the sciences and technology than in the social sciences. Similarly, Marchisio et al. (2018) argued that feedback culture is impacted by the design of assessments, as assessments in STEM provide more natural opportunities for feedback which is timely and direct.

The study further identified constructive and timely feedback as two of the factors driving a strong feedback culture. Receiving constructive feedback resulted in nearly six times the odds of students perceiving feedback culture at their institution as strong (OR = 5.89, $p < .001$), and receiving feedback within the timeframe of a week tripled the odds (OR = 3.21, $p < .001$). These findings substantiate Carless and Boud's (2018) assertion that constructive, enhancement-focused feedback is essential for fostering a sustainable feedback culture. Attiogbe et al. (2023) observed same trends among Ghanaian postgraduate students, emphasising timeliness as a highly regarded attribute of feedback

Differences were also established by level of study, with postgraduate students placing more value on constructive criticism (72% vs. 58% for undergraduates) and clarity (68% vs. 52%), which is an indicator students

in later stages of study expect greater depth and clarity. This finding aligns with Evans (2013), who contended that postgraduate students want more comprehensive, actionable, and dialogic feedback owing to the sophisticated nature of their academic endeavours. Further, a South African study by Leibowitz et al. (2017) revealed similar findings, indicating that postgraduate learners frequently perceive ambiguous feedback as insufficient due to their requirement for advanced academic growth. Lastly, the results indicate a strong relationship between feedback culture and perceived usefulness: 86% of students with a "strong" feedback culture provided "very useful" ratings of feedback compared to 12% of students with a "weak" feedback culture (OR = 7.12). This supports Nicol and Macfarlane-Dick (2006), relating strong feedback culture to increased uptake and application of feedback resulting in improved student learning outcomes.

VI. Implications of the Study

This study's conclusions have significant ramifications for higher education in Ghana. Grounded on the study's conceptual framework, which connected contextual factors, feedback practices, and student outcomes, the results indicate that policy improvements and institutional practices would greatly improve feedback quality.

The study highlights the relationship between feedback practices, students' literacy in understanding feedback, and structural issues including class size and institutional capability. The data argues that where feedback practices were timely, constructive and frequent, students perceived feedback as much more valuable to their learning, yet the constraints put forth by the combination of class size and vague feedback conflicted the feedback–learning link. The findings necessitate institutional frameworks that emphasise the establishment of sustained feedback cultures in Ghanaian colleges and Universities. Policies that promote manageable class sizes, or at the very least alternative to a manageable size, such as teaching assistants, digital feedback possibilities and workshops that support lecturing staff in offering appropriate, timely, constructive feedback, is warranted, to say the least. Moreover, the crucial importance of timeliness and clarity in influencing perceptions of a "robust feedback culture" indicates that quality assurance frameworks, such as accreditation standards, ought to explicitly incorporate criteria for feedback procedures. This corresponds with Evans (2013), that advised that feedback should be systematically integrated in the teaching and learning policy.

The study highlights the pressing necessity for capacity-building programs to improve instructor feedback literacy. Educators require organised professional development to implement feedback strategies that harmonise formative and summative objectives, while also customising feedback for varied student demographics. Postgraduate students prioritise clarity and constructive criticism more than undergraduates, necessitating various feedback practices across academic levels. Incorporating technology-mediated platforms can effectively mitigate timeliness issues, particularly in large-class environments where personalised input is challenging to provide. Moreover, the study has systemic implications to the student learning experience. Strong feedback cultures can lead not just to better student grades but also engagement, motivation, confidence and self-regulation. Lecturer-initiated systems-level resolutions and institutional support mechanisms can help universities in Ghana stay on track to more student-centred pedagogies and make feedback systemically integral to academic and lifelong learning.

VII. Limitations of The Study

The study enhances the discussion on feedback in developing contexts, providing evidence that bolstering feedback literacy and institutional capacity may promote more effective student-centred pedagogies and improve educational quality. Despite the strengths of the study, there are also limitations. First, as feedback is self-reported survey data, issues of social desirability or reporting bias may have influenced other variables, potentially biasing objectivity. As such, any clear associations reported in the findings are cross-sectional and causal inferences cannot be concluded. While associations with student surveys of feedback were demonstrated, further longitudinal studies are required which demonstrate the change process of causal pathways. Also, while the study encompassed viewpoints from several colleges, the applicability of the findings may be limited by contextual disparities among institutions in Ghana and sub-Saharan Africa.

Future directions may mitigate these constraints by utilising mixed-method approaches, incorporating classroom observations and interviews, alongside longitudinal designs to monitor the impact of feedback practices on learning outcomes over time. This would expand and deepen the literature on feedback and aggregate research further and continue to cultivate the research base for developing policies and practices IHE.

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