

Enhancing the Assessment and the Feedback in Higher Education

Kasun Gomis

School of Engineering, University of Central Lancashire, Preston, UK.

Mandeep Saini

Salford Business School, University of Salford, Manchester, UK.

Mohammed Arif

Architecture, Technology and Engineering, University of Brighton, Brighton, UK.

Chaminda Pathirage

*School of Architecture and Built Environment, University of Wolverhampton,
Wolverhampton, UK.*

Abstract

Purpose: Lack of appropriate student support and drawbacks in academic progression signify the importance of enhancing assessment and feedback in higher education (HE). Although assessment and feedback are significant in HE, minimal empirical research holistically explores the best practices. This study aims to address the niche and develop a decisive guideline for enhancing assessment setting and feedback provision within HE curricula.

Methodology: A systematic approach was taken to obtain data for the study: a literature review underpinning the thematic content analysis of study documents, followed by semi-structured interviews. Document analysis contained: 1.) Mid-Module Reviews (MMRs)/ student feedback 2.) Rubrics used in assessment 3.) Formative/summative feedback provided for the graded work. Documental analysis informed the key attributes of the semi-structured interview. Interpretive Structural Modelling (ISM) analysis identified the influence and reliance of each driver.

Findings: The study revealed 15 drivers, four fundamental, six significant and five important, in enhancing assessment and feedback. The level partitioning from the ISM analysis established that all assessment and feedback needs to be underpinned by the university policy and fed into the assessment regime and marking scheme. The study identified that NSS results were significantly improved due to implementing said drivers compared to the national and sector benchmarks.

Practical implications: The developed drivers enable the best practices in assessment setting and feedback provision. The level partition diagram can be employed as a decisive guideline or a provisional framework in assessment and feedback provision for quality assurance in HE.

Originality/Value: This study is one of, if not the only, to develop a guideline signposting drivers and their influence and reliance to enhance assessment and feedback in a holistic HE setting. The developed drivers and the level partition diagram bring novelty and add to the current body of knowledge.

Keywords: *National Student Survey (NSS), Assessment and Feedback, Teaching Quality Improvement, Built Environment Education, Interpretive Structural Modelling (ISM), United Kingdom (UK).*

1.0 Introduction

Assessment and feedback within educational settings are essential for enhanced learning. The literature identifies further improvement in the HE context of assessment setting and feedback provision. Raaper (2016) and López-Pastor and Sicilia-Camacho (2015) establish that providing feedback and a robust assessment setting is crucial for improving student performance and academic progression. The National Student Survey (NSS) provides further insight into the students' perspectives on the success of assessment and feedback received from Higher Education (HE) institutes. NSS data from 2020 to 2022 presents a substantial need to improve assessment and feedback in HE. The sector-wise NSS score for assessment and feedback was 72.6%, 68.6%, and 68.5% in 2020, 2021, and 2022 respectively. As the data indicates a decline in student satisfaction, a significant improvement is needed as student satisfaction was low compared to other themes. Student surveys, especially NSS, are predominant in evaluating the current context of quality and pedagogic alignment in academic institutions (Gomis et al., 2022b). Studies seldom use such surveys to identify critical challenges and reinforce quality assurance in higher education (Teeroovengadum et al., 2019). Similar studies (MacKay et al., 2019) have recognised challenges, although there is limited evidence of providing streamlined guidance on enhancing assessment and feedback. This study aims to develop a set of drivers that could be used as guidance in facilitating assessment and feedback for the successful academic progression of HE students. To develop such drivers, the questions under the 2022 NSS Section 3 – assessment and feedback will be the basis for the research framework. Although other surveys are available, such as NSSE, etc., the NSS was specifically chosen as the underpinning framework for this study. This is due to its section 3 being directly related to obtaining satisfaction with assessment and feedback in HE. Questions Q8 - The criteria used in marking have been evident in advance, Q9 - Marking and assessment have been fair, Q10 - Feedback on my work has been timely, and Q11 - I have received helpful comments on my work, which will be reflected within this study.

2.0 Literature Review

1.1 Clear instruction given on marking criteria

Student support available before and during assessments is also fundamental to student performance. Winstone and Boud (2020) identified that most Higher Education Institutes (HEIs) prefer to assess students by challenging them on specific assessment tasks. Cockett and Jackson (2018) further identified using clear, detailed structure in explaining assessment, marking process, and marking criteria improves student achievements rather than challenging students to open-ended cases. It is also acknowledged that most HEIs offer assessment support through summative but not formative feedback. Winstone and Carless (2020) further emphasise that feedback needs to be provided and facilitated strategically within the module/assessment design. Information on the assessment and feedback subsequently influences the quality of student performance and progression (Day et al., 2018). Detailed instructions need to be presented to students from HEIs to ensure successful assessment opportunities and how they will influence progression.

Previous studies established a correlation between feedback and marking criteria, which are essential for successful student performance. Killingback et al. (2020) portrayed the need for assessment instructions and student feedback quality, quantity, and content consistency for both summative and formative contexts. It further signified the importance of a rubric in generating an in-depth understanding of the assessment and providing feedback. Studies emphasised the significance of interpersonal relationships in addition to supportive nonverbal cues (Chalmers et al., 2017) in feedback provision, although it is time-consuming.

Literature suggests tutors must improve their commitment to supporting students' academic success. Formative feedback on assessment needs further awareness, and inefficient rubrics and marking schemes lead to poor student achievements (Chan & Ho, 2019; Hohmann & Grillo, 2014). This reflects the underpinning issue of student success rates: the lack of understanding of assessments. A clear guideline is needed to address assessment guidance, and identifiable literature proposed that this is best achieved using rubrics. An appropriate rubric encourages students to self-assess and self-improve their academic work. However, one essential aspect that the previous research has not

identified is contextualising student feedback is crucial for their level of comprehension. The importance of contextualised feedback must be acknowledged by academics and integrated into curricula.

1.2 Fair Procedure in Marking and Assessment Setting

Summative assessments are predominantly used in evaluating learning outcomes and students' academic understanding (Medland, 2014). The module learning outcomes and the curriculum framework must align in developing a robust assessment. Assessments are used as the best instrument for increasing student engagement, bridging the training gap, and contextualising the learning environment and competency of the student (Al-Kurdi et al., 2018). However, emphasising "fair procedure" in assessment is critical, as it is the cornerstone of knowledge development and equitable evaluation.

Studies identify that HEIs seldom use rubrics to promote fair procedure within student assessments. Rubrics foster transparency in assessment by clearly conveying marking criteria and performance expectations. As such, rubrics are a framework to promote balance and consistency within the assessment procedure (National Research Council, 2001; Stiggins, 2008). Rubrics are also widely used as they are coherent and transparent in signposting critical areas of the marking scheme and how it is being graded. In context, rubrics promote fair practice in marking and assessment settings. Similarly, Marcuccio & Silva (2019a) establish vital characteristics that will improve fair making and practice, such as understanding the assessment requirement, support for progression and integrated feedback models such as VLE Rubrics.

Most of the findings relate to the rubric being an instrument of support to the learning curriculum within a framework. However, the learner's motivation in dealing with the assessment is prominent. Pui et al. (2020) and Zhang et al. (2018) further identify that using rubrics alone would satisfy signposting the fair procedure incorporated with assessments. Further emphasis should be provided to academics and tutors to reflect on how HE assessment is developed and further indicate the guidelines for developing such assessments.

1.3 Provision of feedback for improvement

Student support is critical to academic achievement (Gomis et al., 2022a). The feedback process is a complicated and continuous endeavour with limited frameworks and holistic policies for its delivery. The provision of effective feedback has the potential to influence, develop and improve students' academic achievements. Previous studies conclude that time was a factor in making feedback effective and meaningful to the students. Stevens et al. (2013) identified that feedback was to be provided to encourage constructive changes within the assessment or subsequent work. According to Hattie (2007), the three concepts for giving feedback are the correction and reinforcement process, analysis and self-evaluation.

A central aspect of considering these pedagogical decisions depends on student engagement, where the tutor often justifies the student's capacity (Winstone & Carless, 2020). The most common aspects reflected are the students' ability to interpret the feedback, their correct understanding, and their willingness to implement the feedback given. Many forms of feedback are available, such as peer-review, self-assessment, etc., but all these forms can be categorised as summative or formative evaluation (Chong, 2020; Alderman et al., 2012). The common perspective is that formative feedback allows constructive criticism at an interim pace, focusing on student assessments, whereas summative allows feeding forward, focusing on student progression following their assessment (Winstone & Boud, 2020; Huisman et al., 2018; McCarthy, 2017).

Much evidence is present in identifying the effectiveness of using rubrics for feedback. In providing assessment feedback, most tutors focus on improvements rather than performance (Watling & Ginsburg, 2019). The study identifies that feedback should not be restricted to the assessment requirement. Shute (2008) discusses that formative feedback needs to transfer information intended to

modify students' thinking and behavioural attributes. Nevertheless, key emphasis must be provided on the student's overall performance rather than mere assessment support.

Winstone and Carless (2020) and Watling and Ginsburg (2019) suggest that verified feedback requires a major investment of time. Gomis et al. (2022a) identified feedback as vital to active teaching and learning, although most feedback strategies are outdated. López-Pastor & Sicilia-Camacho (2015) differentiate formative feedback, providing interim, task-specific assessment guidance, and summative offering a holistic perspective on students' overall skill development and performance. While formative focuses narrowly on assessments, summative adopts a broader lens in evaluating and furthering skills. Thus, it concludes how both feedback is essential in developing cognitive learning from students' perspectives.

1.4 Providing helpful comments on academic work.

Feedback facilitates in-depth understanding provided as a form of comments and information concerning learning outcomes (Fong et al., 2017; McCarthy, 2017). Feedback is crucial for students to identify their mistakes and improve. It should provide constructive criticism and suggestions for further development of knowledge. The modern concept of feedback engages students with their learning process, and they actively seek feedback to enhance their academic performance (Henderson et al., 2019). In conclusion, all identifiable literature highlights the importance of constructive feedback for academic achievement.

The NSS data identifies how assessment and feedback support was provided nationally. The overall satisfaction level denotes a benchmark across HEIs on a minimum threshold that needs to be underpinned by supporting assessment and feedback settings within the HE curricula. The systematic framework would support evaluating the quality of their assessment procedures and feedback mechanisms. Thus, the NSS is considered an indispensable tool for internal quality assurance to ensure that issues are addressed, and standards are maintained to enhance the student learning experience.

3.0 Methodology

A systematic approach is taken to collect data from different personnel within the HE curriculum to develop drivers. A mixed-method approach is taken where 1.) a documental analysis of Mid-Module-Reviews (MMRs), 2.) a documental analysis of VLE feedback, and 3.) semi-structured interviews with academics were used in data collection. Quantitative data was collected from the MMRs, while qualitative data was collected from the VLE feedback and semi-structured interviews. The data from both the documental analysis (i.e. MMRs and VLE feedback) was used to identify critical issues and overall perspectives from students. Data from the interviews addressed the critical issues identified from the documental analysis and strategies for further improvement. Data from MMRs were analysed by the frequency of occurrence and the importance of feedback, while data from the qualitative instruments were analysed using thematic analysis to develop drivers. These drivers were further analysed using interpretive structural modelling (ISM) to determine their influence and relationship with each other. An overview of how these data collection instruments were developed, utilised, and analysed is illustrated in Figure 1 and explained in the chapters below.

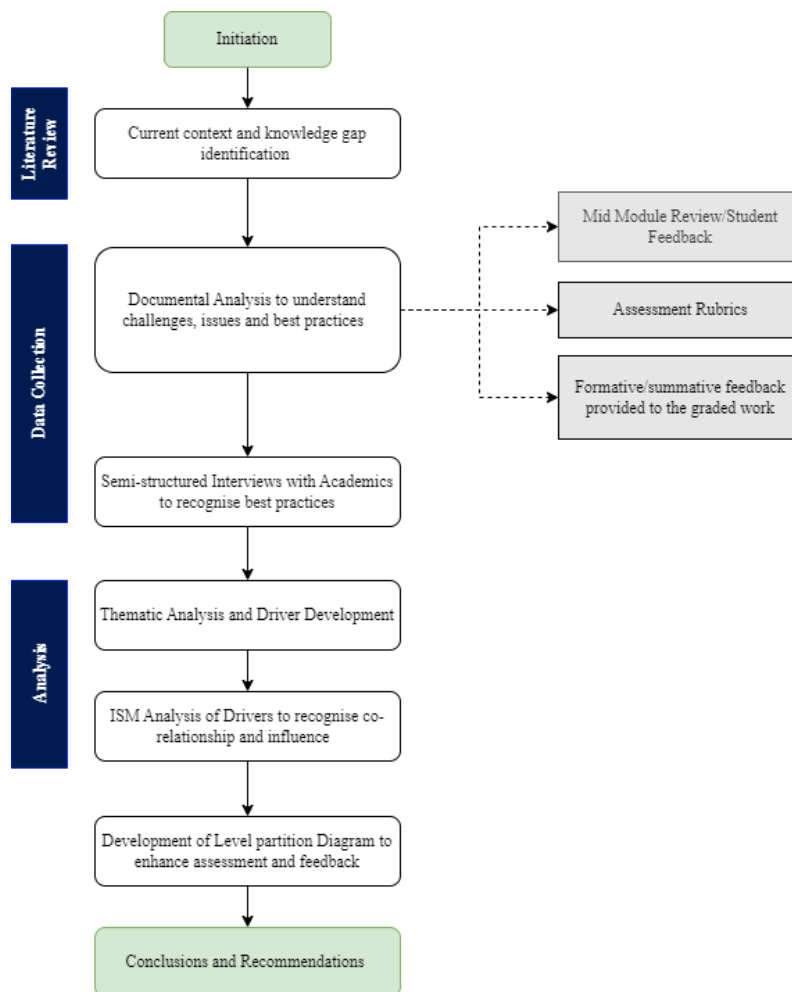


Figure 1 – Methodology of the study.

3.1 Participants and Materials

Students were given Mid-Module-Reviews (MMRs) focusing on these four questions reflecting the NSS section 3. A sample of 340 students across the built environment (BE) discipline was taken for the MMR documental analysis to understand the students' perspectives on assessment and feedback experience. From a 340 population with a confidence level of 95% and an error margin of 5%, the minimal sample size for the study needed to be more than 181. 230 students participated, making the sample size for the study well above the required size. To obtain a standardised data set, students were selected to represent each BE discipline, such as architecture, civil engineering, quantity surveying, building surveying, construction management and property and real estate.

Further documental analysis was carried out within a virtual learning environment (VLE), focussing on marking descriptors and Rubrics from selected modules. BE-specific modules were selected and evaluated to establish if the criteria used in marking were presented clearly. The selection of the modules was made due to the module availability and types of assessment settings, ensuring a minimum of 2 modules per discipline and level of study. 36 modules were selected for the study as per a minimum of 2 modules for six disciplines ranging from level 4 to 6. In addition, four generic modules were selected randomly across all levels to evaluate the assessment and feedback comprehensively. This brings the overall module count for the study to 40 modules. Within the 40 modules, 240 feedback documents were identified, averaging 60 feedback sheets per module. Overall evaluation was carried out on how development and support were provided on assessments, establishing the fairness of marking, timing on feedback, and how it has helped student progression. Data obtained from both research instruments were analysed thematically to identify potential critical issues and the best

practices. These themes were the underpinning aspects for the questionnaires sent to academics to develop drivers for the best practice in assessment and feedback in HE.

Twenty academics were selected for semi-structured interviews with a confidence level of 95% and an error margin of 5%. 3 academics were selected from each discipline with a minimum of 3 years of experience in HE. The selection criteria included an academic level, such as a programme lead, a senior lecturer, and a lecturer within the three selected academics. Furthermore, principal lecturers and a head of the school were selected to validate the data and facilitate the ISM analysis. Data from the semi-structured interviews addressed the issues raised by the documental analysis and established strategies for further improvement.

Data from the documental analysis and the semi-structured interviews were analysed under thematic analysis and grouped appropriately with the NSS themes identified.

3.2 Research Procedure

Firstly, a literature review is conducted to identify the current context of assessment and feedback in HE curricula. The reviewed literature underpins the current practice in the assessment setting, challenges, and perceived best practices within the HE context and are reflected during the documental analysis. The documental analysis contained three parts: 1.) Mid-Module Reviews/ student feedback 2.) Rubrics were used in the assessment. 3.) Formative/summative feedback was provided to the graded work. The documental analysis was further assessed with the themes under section 3 of the NSS. The identified challenges, issues and best practices were thematically assessed and fed into developing the semi-structured interview questionnaire aimed at academics. The academics' comments on best practices in the assessment setting and feedback were recorded. These were again thematically analysed to develop the drivers.

The developed drivers have been categorised independently within the separate NSS section 3 themes. To successfully enhance assessment and feedback, the relationship of each driver needs to be understood. ISM recognised each driver's co-relationship and influence to enhance assessment and feedback. ISM is predominantly used as a systematic and prevalent inter-relationship analysis technique for strategic decision-making (Gomis et al., 2022b). It was considered a popular analysis model for recognising such correlation and influence, improving interdisciplinary and interpersonal aspects within the BE discipline (Gomis et al., 2022a; Marak & Pillai, 2021). A systematic approach was taken in developing the level partitioning using ISM, where a reachability matrix was developed to carry out a structural self-interaction matrix (SSIM). This aided in identifying the influence and reliance of each driver in enhancing assessment and feedback. Also, the SSIM provided the binary coordinates that could be fed into the Matrice d'Impacts Croises-Multiplication Appliquée a Classement (or MICMAC) graph categorises the drivers into clusters depending on their influence and reliance. Developed drivers were categorised as linkage, independent, dependent, and autonomous, depending on their influence and reliance level. In addition to the above, the reachability matrix was developed to identify Antecedents and Intersection levels for each driver to develop the level partitioning diagram.

4.0 Data Analysis

4.1 Clear instruction given on marking criteria

The data presented here provide evidence for advancing assessments and feedback to the students in BE to explore ideas or concepts in depth. The study found additional aspects in developing assessments in reflection of findings from the literature review. Document analysis through the modules selected revealed that all the assessments were introduced within the first session of the module, and clear guidance was provided in explaining the assessment rubrics. One recurring finding from literature which reflected from interviewing academic staff is that *“students seldom improve on the feedback provided”*. Some students who participated in the survey highlighted *“how well tutors assist in addressing their academic development”*. However, the study further suggests that *“tutors need to understand the student's perspective on feedback”*. The significance of incorporating feedback as an

instrument was acknowledged as paramount. Another student suggestion is to “*address the importance of feedback and how feedback will be given at the lecture sessions*”. The academic staff agreed that these sessions “*should reflect both formative and summative feedback; discussing what aspects of these feedback needs to feedforward in academic development*”. Students and Tutors highlighted that only then will the students have a mindset to use the implications from the rubric to develop academic skills and promote academic achievement.

4.2 Fair Procedure in Marking and Assessment Setting.

The findings from this study also establish that a fair procedure in marking and assessment settings needs to adhere to advance student satisfaction. The academic staff and students agreed that “*including rubrics in assessments is very useful in creating ‘fair procedure in assessment marking’*”. Discrepancies in using these data in marking and presenting the marked assessments were highlighted. Contrary to such expectations, the study identifies critical discrepancies between using rubrics and achieving fair procedure. The data obtained from the study reveals that “*inconsistency has been observed between the comments and the grades*”. The academic staff emphasised that by default, “*there should be no deviation on accuracy with the use of rubrics reflecting the assessment requirement and the marking scheme (in curricula)*”. This malpractice was highlighted in the documental analysis that some academic staff agreed not to use the rubric in providing feedback. Students highlighted that “*feedback would be better understood if it was reflected more on the ‘familiar’ rubric generated*”. Hence, rubrics could have been better developed to provide feedback and achieve fair procedure. The study identifies the success of using rubrics within the curricula in achieving fair play. However, the data presented identifies a significant room for improvement in utilising rubrics to promote fair procedure when giving feedback.

4.3 Provision of feedback for improvement.

The study identifies the need for timely feedback as critical in enhancing the academic setting and providing feedback. Data from all the interviews identifies that academic improvement could only be achieved with proper guidance. The academic staff insists that “*feedback should be provided timely*” and further highlights “*formative and summative feedback being issued concisely focussing on key elements specific to each task*”. Most students indicated “*inconsistency in obtaining feedback*”. It was highlighted that some of the modules provided formative feedback, whereas others did not. Data obtained through documental analysis further proved this statement. Also, it was noticed that the modules that encountered formative feedback performed better than those that did not. Students further highlighted that “*some of the feedback was provided very near to the assessment submission, preventing major changes suggested by the tutor*”. These issues were raised with the academic staff, and it was agreed that the time management of some modules might vary in delivery due to diverse factors. The academic staff agreed that a robust framework and a session plan must be presented at the start of the lecture sessions, highlighting where the formative feedback is provided. Academic staff also highlighted the effort students need to make to obtain feedback and address issues with student engagement. Tutors recommended “*developing a session framework incorporating several formative feedback sessions*” and using “*VLE platforms to increase student engagement*”. As the data suggest, critical focus is needed on the consistency of the feedback provided and coherence obtained through feedback.

4.4 Providing helpful comments on academic work.

The data presented identifies the influence of helpful comments on improving students' academic work. One critical theme that recurred throughout academic staff interviews is “*a possible lack of enthusiasm in students to receive feedback*”. The academic staff and students agreed that this is due to the “*perception and the lack of understanding of how feedback could be used in developing and improving academic work*”. The student highlighted the additional use of supportive sessions in identifying and incorporating feedback in academic development. Furthermore, students stressed the “*use of innovation in providing feedback rather than paper-based feedback*”. The use of virtual

learning platforms and digitised student appointment platforms was proposed by academic staff as an innovative method of obtaining feedback.

Furthermore, students highlighted that explaining the comments made from formative feedback can be an immense help. The study concluded that involving students in such parameters would improve the quality of the feedback. The results yielded interesting facts through the data from the documentation analysis containing preliminary evidence that *“using the university marking descriptors for assessing inspires a quality assessment standard”*. The data also provide convincing evidence that there needs to be more *“student involvement in the feedback process”*. The group discussion and student feedback emphasise the inconsistency and appropriate level of feedback provided. Another noteworthy finding of this analysis is that many students need help understanding how to use feedback to improve their work.

4.5 Categorisation of Drivers to enhance assessment and feedback

Table 1 below presents the drivers developed by the data analysed through MICMAC. The driver categorisation comprises linkage, independent, dependent, and autonomous clusters. The categorisation was carried out, identifying each driver's influence and reliance. Drivers with both strong influence and reliance were categorised as linkage clusters (categorised as fundamental, E.g. D5), while drivers with both weak influence and reliance were categorised as autonomous clusters (categorised as insignificant). The drivers with a strong influence but a weak reliance were categorised as independent (categorised as significant, E.g. D1), and the drivers with a weak influence but a strong reliance were categorised as dependent (categorised as important, E.g. D9). Reflecting on each category, drivers are assessed and categorised significantly to enhance assessment and feedback. One critical finding in this study is that no drivers were categorised under the autonomous cluster, denoting all the drivers' significant role in enhancing assessment and feedback in HE curricula. The drivers listed here are further analysed to develop the level partitioning diagram.

Table 1 - Driver categorisation to enhance assessment and feedback.

Questions from NSS	Strategies identified through the study	Driver	Cluster Categorisation
Section 3: Assessments and Feedback			
1. The criteria used in marking have been clear in advance.	Use of theoretical frameworks or rubrics in explaining assessment requirements.	D1	Significant
	Using theoretical frameworks or rubrics to explain the assessment framework of how marks are awarded.	D2	Significant
	Providing context on what rubrics and feedback are and how they should be used in the curriculum framework for student performance and progression.	D3	Significant
	Using rubrics as an instrument in presenting feedback to students.	D4	Significant
2. Marking and assessment has been fair.	In-class detailed discussions on how the rubrics would be used in marking and assessment promoting 'fair play'.	D5	Fundamental
	Incorporating rubrics as a basis of feedback provided.	D6	Significant
	Use of other advice as secondary or within a separate section for further clarity in providing feedback.	D7	Significant

3. Feedback on my work has been timely.	Providing a clear session plan highlighting the feedback sessions planned.	D8	Fundamental
	Using several formative feedback sessions in appropriate timing, focusing on timely feedback provision.	D9	Important
	Use of consistency in providing feedback in relation to rubrics and assessment framework.	D10	Fundamental
	Using VLE in increasing student engagement and using innovative techniques in presenting feedback.	D11	Fundamental
4. I have received helpful comments on my work.	Use university descriptors and rubrics to produce quality and high feedback standards.	D12	Important
	Assimilate marking schemes and assessment requirements to produce more coherent guidance when providing feedback.	D13	Important
	Tutors should emphasise the importance of feedback and utilisation in improving academic performance by support sessions.	D14	Important
	Use of innovation such as VLE and focussing on student orientation in providing both formative and summative feedback.	D15	Important

5.0 Discussion

The literature analysis led to the need for advancing assessment settings to develop student academic performance. The findings from the literature point out several studies highlighting the current issues in assessment settings (Al-Kurdi et al., 2018; Cockett & Jackson, 2018). Some of the critical findings highlighted the tutors' misconceptions, lack of student support in the assessment setting and inadequacy in the discussion on assessment requirements. The conventional understanding of knowledge is outdated in current practice (Winstone and Carless, 2020). The assessments used in academia have more depth and range than previous measures. It is stressed that students tend to underperform in assessments not just due to a lack of knowledge but rather a lack of understanding of the assessment requirement (Cockett & Jackson, 2018; Day et al., 2018). The literature identifies the value added using a theoretical framework to explain the assessment requirement (Killingback et al., 2020). The findings from the study confirmed certain aspects stressed through the literature review. The document analysis further reinforced the use of rubrics in the assessment structure; however, tutors should have emphasised reflecting such rubrics in the feedback provided. The data gathered from the study stresses the current need for using rubrics as an instrument for improving student performance in curricula. It is identified that rubrics and adequately formatted feedback are eminent in advancing assessment settings and feedback reflecting academic development.

The literature identifies the importance of using rubrics in setting assessments and the function of the rubric in student academic development (Medland, 2014; Cockett & Jackson, 2018). However, previous studies lack correlation to the use of rubrics in developing assessments in a fair, transparent, and consistent manner reflecting academic development. The literature reviewed (Stevens et al., 2013; Marcuccio & Silva, 2019b) highlights the necessity of rubrics used to support the understanding of the theoretical framework. Emphasising the use of fair procedure in marking and assessment settings. The data obtained during the study indicated a need for changes in teaching strategies intended to promote fair procedure in marking and assessment protocol. The study revealed substantial inconsistency between feedback and the grades assigned by the rubric. The study further identifies critical

discrepancies between using rubrics and achieving fair procedures in curricula. Most students insisted that academic performance would be fruitful if the marking and assessment setting were based on the rubric created and discussed in the classroom. Emphasising the need for rubrics was stressed in achieving fair assessment and marking procedures.

Timely provision of feedback is considered a critical aspect of student support and academic development. Previous studies (Gomis et al., 2022a) identified that timely feedback could manifest substantial support. Winstone and Carless (2020) and López-Pastor and Sicilia-Camacho (2015) identify using formative feedback over summative feedback to enhance student performance. Feedback could be ultimately used in two ways: developing an academic skill set and integrating coherent academic skills to promote student progression. The data obtained from the study rebounded the themes identified in the literature context. Most of the documental analysis and interviews by students led to believe the lack of formative feedback used in modules. The data obtained highlights the need for more emphasis on timely provision and consistency in feedback. The tutors highlighted the lack of student engagement in obtaining and utilising feedback. In conclusion, formative feedback is vital for student performance and progression; enhancing such function should be considered prominent in curricula.

Feedback provision is a skill in its form and denotes a strong influence over students' academic achievement. Formative and summative feedback identified aspects of continuous improvement within students' academic experience (Henderson et al., 2019). The literature identifies a significant improvement in providing feedback, as the data evidenced out-of-date strategies in the current practice. Even though the context of assessments might be different in each curriculum, the need for the strict use of feedback policy is evident in academia. It further provides the benefit of using university descriptors as rubrics in producing quality and high feedback standards. This feedback approach will further assimilate the marking scheme and assessment requirement to produce more coherent guidance. The documental analysis and interviews highlighted that incorporating the feedback received in advancing student performance was not induced by students. The further need to accentuate feedback and utilisation in improving academic performance through support sessions was recognised.

5.5 Level partition of Drivers to enhance assessment and feedback

Figure 2 presents the level partitioning developed to enhance the assessment setting and provision of feedback in HE. The diagram is developed by thoroughly discussing the developed drivers and how they should be implemented to promote and enhance assessment and feedback. Antecedents and intersection functions in the ISM reachability set are used further to justify the driver positioning in the level partitioning diagram. The figure further explains how the drivers should be implemented and at what level to signify their reliance and influence to enhance assessment and feedback. The following figure could be a potential guideline for developing a dynamic framework, promoting the best practices in the assessment setting, and providing feedback in the HE context.

Figure 2 - Level partition of Drivers to enhance assessment and feedback.

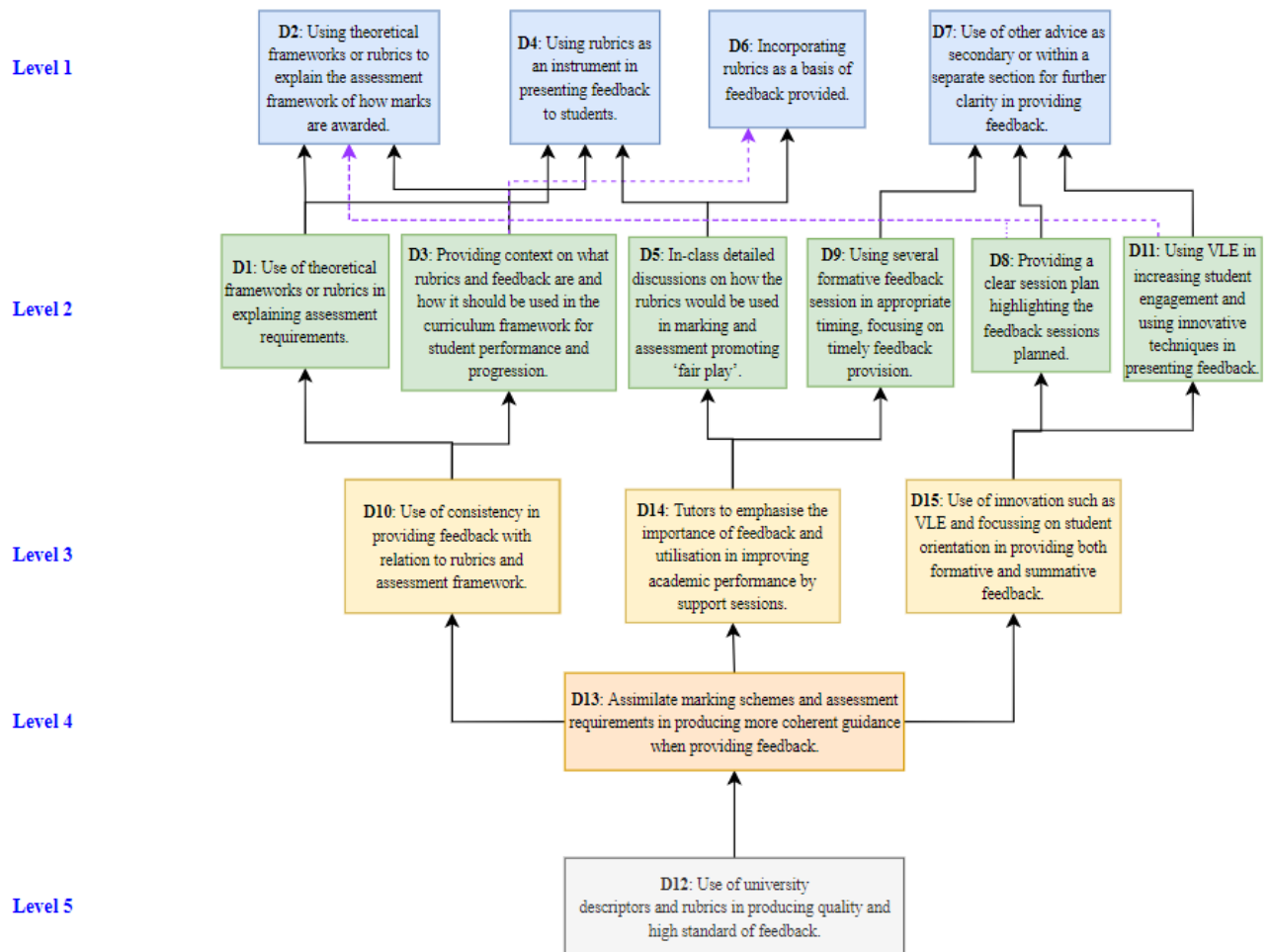


Figure 2 illustrates the Driver level of implementation and their relationship with other drivers (i.e. how next-level facilitation has occurred). The hierarchy is denoted by the levels, which are colour-coordinated to enhance visibility and readability, as highlighted on the lefthand side of the figure. The higher the level, the more significant; e.g., as the analysis, D12 is considered the foundation to enhance assessment and feedback in HE. The primary relationships are denoted with solid black arrows indicating the relationship between the facilitator and the dependent. Other sub-level relationships, which are not as strong as the primary relationships, are denoted with purple-dotted-arrows.

The study identifies that it is imperative that assessment setting and feedback provision needs to be aligned with the university policy (D12) as it is positioned as the lowest level 5. This must be facilitated in developing marking schemes and any guidance regarding assessment requirements (D13) at level 4. Doing so facilitates the quality setting and standards appropriate to the university policy. It

should also be discussed that the marking scheme does reflect not only the traditional feedback or rubrics used in assessment but also the formative/summative feedback provided and VLE implementation (D15) to enhance student performance. Aligning with the university descriptors will add a weighting to emphasise the importance of assessment and feedback to students (D14), facilitating a much more proactive approach to feedback from students' perspectives. Also, having such alignment promotes consistency in developing assessments and providing feedback (D10). All the above drivers need to be carefully implemented as they are at level 3, which the level 4/5 drivers facilitate and as they influence level 2 drivers.

Each of the level 3 drivers will help to influence a vital element in the assessment setting and feedback provision in the level 2 driver, as depicted in Figure 2. E.g., consistency influences the easier implementation of assessment frameworks/rubrics (D1) and how they must be used to improve student performance (D3). Emphasis on the importance of assessment and feedback will influence detailed discussions and how it is a “fair procedure” in grading (D5), and students will benefit from a clear and timely feedback provision (D9). The use of VLE influences clarity in how the assessment and feedback will be provided during their learning and promotes further student engagement, catering to their progression. From the above underpinning theories and drivers, the level 1 drivers are the drivers that are “visible” and in the front line of assessment setting and feedback provision. The level partitioning identifies that most level 2 drivers influence level 1 drivers either directly or indirectly. In a nutshell, a successful implementation should consist of using theoretical frameworks/rubrics in explaining assessment and grading (D2), using them in assessing and providing feedback (D4), having theoretical frameworks/rubrics as the basis of feedback (D6), nonetheless using secondary means such as annotations, recordings, etc. separately to provide further clarity to assessment grading and feedback (D7). All the drivers below need to be implemented to enhance assessment and feedback setting in HE. Some of these drivers may be already implemented, but with a strategic underpinning, as depicted in Figure 2 above, the best practice may be achieved and sustained.

NSS data was assessed before and after implementing the above drivers to validate the driver and the level partitioning diagram. The NSS benchmark for Assessment and feedback across the UK in 2022 was 68.5%. This is an overall decline from the previous years of NSS data. However, the sector benchmark for the BE-related courses was 64.0%, lower than the national average. The NSS score before the driver implementation was higher than the national and the sector average. The NSS score has improved to 77.7%, which is higher than the recorded percentiles of the national average, sector average and the previous year's benchmarking.

6.0 Conclusions and Recommendations

This study has shown that HEIs have yet to grasp the effectiveness of the concept of assessment setting and the feedback provided. Data obtained indicate a strong relationship between academic achievement, assessment setting and provision of effective feedback. Identifying critical challenges and issues from the HE context, 15 drivers were developed to enhance assessment setting and feedback provision. Of the 15 drivers, four drivers were considered fundamental (under the linkage category), six were considered significant that has a significant impact on the quality of assessment and feedback (under the independent category), and five were important that facilitated the other drivers to boost the impact on enhancing the quality of assessment and feedback (under the dependent category). Notably, no driver was identified as non-significant (under the autonomous category), ensuring that all the drivers have a vital role in enhancing assessment and feedback in HE. Considering critical themes during driver development, the study recognised two most crucial elements: a) the use of rubrics and b) inclination towards VLE needs to be driven by the HEIs to facilitate quality assurance in HE that has a direct impact on HE student progression.

This study could be the first to develop a decisive guideline or a provisional framework in the assessment setting and feedback provision under each question across the HE context. The level partitioning developed is the novelty of the study, and it establishes that assessment and feedback need

to be underpinned by the university policy and fed into the assessment regime and marking scheme. Although some of the drivers (e.g., level 1) could have already been incorporated into the HE context, the study asserts the use of all the drivers as illustrated in the level partitioning diagram. Therefore, the drivers developed and positioned under each level could be of utmost importance to academics, tutors, HE staff, HE policymakers, regulators and HEIs to identify how to improve assessment setting and feedback provision in HE curricula. Using the developed level partitioning as a tool for quality assurance is highly advised as it provides the best practice in assessment setting and feedback provision. This will ensure successful student progression, continuous educational improvement, and promotion of best practices within higher education academics and academic institutions. Employing the study's findings to enhance assessment and feedback across different sectors within higher education is also strongly recommended.

7.0 Acknowledgements

The data obtained for the study was based on a project guided by a steering committee within the University of Wolverhampton, chaired by Professor Mohammed Arif. Credit must be given to Mr Anthony Hatfield, Dr Shashank Gupta, Ms Olive White and Ms Jennifer Charlson for their significant input in the data collection. Furthermore, the authors appreciate the students and academic participants for their insightful comments.

8.0 References

- Alderman, L., Towers, S. and Bannah, S. (2012) "Student feedback systems in Higher Education: A focused literature review and environmental scan," *Quality in Higher Education*, 18(3), pp. 261–280. Available at: <https://doi.org/10.1080/13538322.2012.730714>.
- Al-Kurdi, O., El-Haddadeh, R. and Eldabi, T., 2018. Knowledge sharing in higher education institutions: a systematic review. *Journal of Enterprise Information Management*, 31(2), pp.226-246.
- Chalmers, C., Mowat, E. and Chapman, M., (2017). Marking and providing feedback face-to-face: Staff and student perspectives. *Active Learning in Higher Education*, 19(1), 35–45.
- Chan, Z. & Ho, S. (2019). Good and bad practices in rubrics: the perspectives of students and educators. *Assessment & Evaluation in Higher Education*, 44(4), 533–545.
- Chong, S.W. (2020). "Reconsidering student feedback literacy from an ecological perspective," *Assessment & Evaluation in Higher Education*, 46(1), pp. 92–104. Available at: <https://doi.org/10.1080/02602938.2020.1730765>.
- Cockett, A., & Jackson, C. (2018). The use of assessment rubrics to enhance feedback in higher education: An integrative literature review. *Nurse Education Today*, pp. 69, 8-13
- Day, I., van Blankenstein, F., Westenberg, P. and Admiraal, W., 2018. Explaining individual student success using continuous assessment types and student characteristics. *Higher Education Research & Development*, 37(5), pp.937-951.
- Fong, C., Williams, K., Williamson, Z., Lin, S., Kim, Y. & Schallert, D. (2017). "Inside out": Appraisals for achievement emotions from constructive, positive, and negative feedback on writing. *Motivation and Emotion*, 42(2), 236-257.
- Gomis, K., Saini, M., Pathirage, C., & Arif, M. (2022a). Enhancing quality of teaching in the built environment higher education, UK. *Quality Assurance in Education*, 30(4), 523–538. <https://doi.org/10.1108/qaе-03-2022-0072>

- Gomis, K., Saini, M., Pathirage, C., & Arif, M. (2022b). Enhancing the organisation and the management of Built Environment Higher Education Courses. *Quality Assurance in Education*.
<https://doi.org/10.1108/qae-01-2022-0020>
- Hattie, J. and Timperley, H., (2007). The Power of Feedback. *Review of Educational Research*, 77(1), 81-112.
- Henderson, M., Ryan, T. & Phillips, M. (2019). The challenges of feedback in higher education. *Assessment & Evaluation in Higher Education*, 44(8), 1237-1252.
- Hohmann, J. and Grillo, M., 2014. Using Critical Thinking Rubrics to Increase Academic Performance. *Journal of College Reading and Learning*, 45(1), pp.35-51.
- Huisman, B., Saab, N., van den Broek, P., & van Driel, J. (2018). "The impact of formative peer feedback on Higher Education Students' academic writing: A meta-analysis," *Assessment & Evaluation in Higher Education*, 44(6), pp. 863–880. Available at: <https://doi.org/10.1080/02602938.2018.1545896>.
- Killingback, C., Drury, D., Mahato, P. & Williams, J. (2020). Student feedback delivery modes: A qualitative study of student and lecturer views. *Nurse Education Today*, 84, p.104237.
- López-Pastor, V. and Sicilia-Camacho, A., 2015. Formative and shared assessment in higher education. Lessons learned and challenges for the future. *Assessment & Evaluation in Higher Education*, 42(1), pp.77-97.
- MacKay, J. R., Hughes, K., Marzetti, H., Lent, N., & Rhind, S. M. (2019). "Using national student survey (NSS) qualitative data and social identity theory to explore students' experiences of assessment and feedback," *Higher Education Pedagogies*, 4(1), pp. 315–330. Available at: <https://doi.org/10.1080/23752696.2019.1601500>.
- Marak, Z. and Pillai, D., 2021. Supply Chain Finance Factors: An Interpretive Structural Modeling Approach. *Central European Management Journal*, 29(1), pp.88-111.
- Marcuccio, M., & Silva, L. (2019a). Peer feedback as assessment practice in doctoral programs: a systematic review of empirical research. *Italian Journal of Educational Research*, Special Issue – May, 85-100. Retrieved from <https://ojs.pensamultimedia.it/index.php/sird/article/view/3271>
- Marcuccio, M., Silva, L. (2019b). Assessment practices "of" learnings in doctoral research: a systematic review of empirical researches. In P. Lucisano & A.M. Notti (Eds.) *Training actions and evaluation processes*. Atti del Convegno Internazionale SIRD (pp. 645-653). Lecce: Pensa Multimedia.
- McCarthy, J. (2017). "Enhancing feedback in Higher Education: Students' attitudes towards online and in-class formative assessment feedback models," *Active Learning in Higher Education*, 18(2), pp. 127–141. Available at: <https://doi.org/10.1177/1469787417707615>.
- Medland, E., (2014). Assessment in higher education: drivers, barriers and directions for change in the UK. *Assessment & Evaluation in Higher Education*, 41(1), 81-96.
- National Research Council (2001). *Knowing what students know: The science and design of educational assessment*. Washington, DC: The National Academies Press.
- Pui, P., Yuen, B. & Goh, H. (2020). Using a criterion-referenced rubric to enhance student learning: a case study in a critical thinking and writing module. *Higher Education Research & Development*, 40(5), 1056-1069.
- Raaper, R., (2016). Tracing assessment policy discourses in neoliberalism higher education settings. *Journal of Education Policy*, 32(3), 322-339.
- Shute, V. J. (2008). Focus on formative feedback. *Review of educational research*, 78(1), 153–189
- Stevens, D., Levi, A. and Walvoord, B., 2013. *Introduction To Rubrics*. Herndon: Stylus Publishing.

- Stiggins, R. (2008). A call for the development of balanced assessment systems. Assessment Manifesto. Portland: ETS Assessment Training Institute.
- Teeroovengadum, V., Nunkoo, R., Gronroos, C., Kamalanabhan, T. J., & Seebaluck, A. K., (2019). "Higher Education Service Quality, student satisfaction and Loyalty," *Quality Assurance in Education*, 27(4), pp. 427–445. Available at: <https://doi.org/10.1108/qa-01-2019-0003>.
- Watling, C. J., & Ginsburg, S. (2019). Assessment, feedback and the alchemy of learning. *Medical Education*, 53, 76-85
- Winstone, N. & Carless, D. (2020). *Designing Effective Feedback Processes In Higher Education: A Learning-Focused Approach*. 1st ed. Oxon: Routledge.
- Winstone, N.E. and Boud, D. (2020). "The need to disentangle assessment and feedback in Higher Education," *Studies in Higher Education*, 47(3), pp. 656–667. Available at: <https://doi.org/10.1080/03075079.2020.1779687>.
- Zhang, Y., Chen, B., Ge, J., Hung, C. and Mei, L., 2018. When is the best time to use rubrics in flipped learning? A study on students' learning achievement, metacognitive awareness, and cognitive load. *Interactive Learning Environments*, 27(8), pp.1207-1221.