



Enhancement of Learning through Development of Feedback Approaches by Utilising Learner Assessments

Quality in Higher Education: Sectoral Findings & Enhancement Showcase

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Dr Muhammad Iqbal, CCT College Dublin

Outline

- Introduction to Authentic Assessment
- Six essential Features of Authentic Assessments
- Feedback Approaches for Authentic Assessment
- Feedback Methodology using and Integrated Approach
- Four methods of assessments at CCT
- Flow chart for Adaptable Feedback Methodology
- Survey conducted to obtain Learners Feedback
- Summary

Authentic Assessments

History & Introduction

- Several authors coined this term as “Authentic” for their assessment strategy.
- The first major reference to authentic assessments was made by **Archbald and Newman in 1988**, in a book critical of standardized testing that aimed to promote evaluation based on significant **real-world challenges or tasks**.
- Newman highlighted how assessments should ask questions and pose issues that are "real world" in nature.
- There are some additional requirements for authentic intellectual effort that are unrelated to the realism of the assessment tasks.

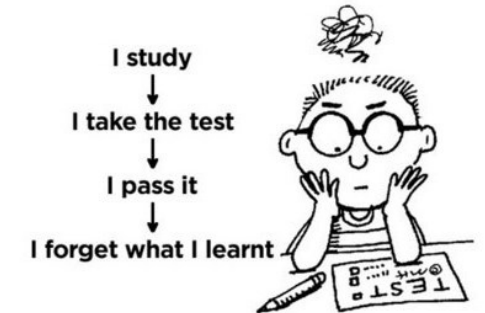


Image Source:
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- Muhammad Iqbal, Presentation, Engaging Students with Authentic Assessment, CCT Teachmeet (2022), CCT College Dublin.

Authentic Assessments

Introduction



- Authentic assessment is a form of assessment which involves students conducting ‘real world’ tasks in meaningful contexts (Swaffield, 2011).
- Authentic assessment divides real-world scenarios into discrete tasks to evaluate students' performance, knowledge, and collaborative participation while working in distinct fields.
- The development of engaging and diverse assessments aligns with the key principles of an inclusive assessment approach (universal design; CAST, 2011), which supports the growing diversity of students in the Irish higher education sector.
- The concept of **authenticity** is common in educational research and recently, it is widely used in the classrooms at the colleges and universities.



Source image: <https://cctcollege.sirv.com/people/people-20.jpg?scale.option=fill&w=600&h=0>



Image Source <https://www.dreamstime.com/illustration/group-students-working-project.html>

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Authentic Assessments

Six Essential Features

- For an assessment to be regarded legitimate or authentic, Wiggins (1998) states that it must meet following **six requirements**.

1, 2

- The evaluation is **realistic**; it exhibits how the information or abilities would be applied in the "real world."
- The assessment necessitates **judgement** and **creativity**; it is based on solving **unstructured issues** with several correct answers, requiring the learner to make educated decisions.

3, 4

- The student is required to "do" the subject. This means that they go through the **procedures** that are typical of the discipline being studied.
- The **evaluation** is carried out in settings that are as close as **feasible to the contexts** in which the linked skills are performed.

5, 6

- The student is required to **demonstrate** a wide range of skills connected to the **challenging problem**, including some that need judgement.
- It provides adequate opportunities for **rehearsing, practicing, consulting resources, and receiving and refining feedback** on performances and deliverables.

Feedback Approaches

Authentic Assessment

- Proper feedback always guides the learners on how they can improve in the future assessments by avoiding repetition of errors.
- Constructive comments or remarks were the major type of feedback available through traditional means, which made it difficult to evaluate multimedia work and prevented a thorough understanding of a student's performance.
- Conception, planning, and implementation of personalised feedback strategy are regularly practiced at CCT.



Image Source 1: <https://edu.rsc.org/feature/improving-feedback/3010444.article>

Drive	Poor [1]	Needs Improvement [2]	Acceptable [3]	Good [4]	Excellent [5]
Decisiveness Comfortable to make business decisions.	Unable to make good, balanced decisions or to make a "top of list".	Struggles to make good, balanced decisions or to make a "top of list".	Able to make good, balanced decisions or to make a "top of list" in most situations.	Usually makes good, balanced decisions or to make a "top of list" when appropriate.	Completely trusts his abilities to make good, balanced decisions or to make a "top of list" when appropriate.
Adaptability Able to adapt to change.	Does not understand the need for change and is unable to adapt to new situations.	Struggles to understand the need for change and has difficulty to adapt to new situations.	Understands the need for change and is able to adapt to certain new situations.	Understands the need for change and is usually able to adapt to new situations.	Completely understands the need for change and is able to adapt to new situations.
Accountability for results Able to manage time and meet deadlines. Able to effectively communicate to achieve goals.	Unable to set and start deadlines for any tasks. Lacks planning and reliance to complete projects. Inability to communicate with others for collaboration or expansion of decisions and choices made.	Allocates time for specific tasks but lacks the ability to prioritize. Requires regular guidance and check-ins. Depending on others to complete tasks and/or make decisions. Works on tasks and projects but lacks initiative to discover answers to questions when confronted with roadblocks.	Follows a process for achieving results. Understands how to schedule and prioritize tasks, avoid procrastination and stay focused. Works on tasks and projects until they are complete. Consults and develops relationships with people that could be helpful to achieve results and requests that help when necessary. Asks questions or seeks out information when faced with roadblocks.	Ability to break broader goals into smaller parts and focus on one step at a time. Implements tight pre-defined processes without making. Can move self forward when gets off track. Awareness to say "no" when demands distract from core focus. Avoids excess small talk with coworkers to focus on tasks at hand.	Always seeks more efficient ways of doing things. Ability to adapt plans to changing circumstances. Creates their own process and timeline for achieving results. Facilitates efficient meetings. Is able to express goals and decisions and chooses mode to achieve them in their own words.

Image Source 2: <https://successcoaching.co/blog/people-success-using-rubrics-to-assess-performance>

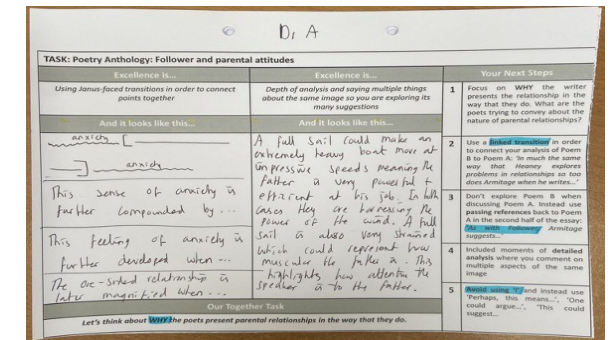


Image Source 3: <https://codexterous.home.blog/2021/07/15/defining-excellence-how-it-use-whole-class-feedback/>

Feedback Methodology

Integrated Approach

- CCT College has developed and implemented an integrated methodology for providing feedback using multiple modes at different QQI levels (NFQ: 7, 8 and 9).
- This approach is adaptable and fulfils the needs for a variety of students.
- We are doing best practice of **four modes** to provide feedback for authentic assessments.



Rubric Based Feedback

Authentic Assessment

- Rubric-based feedback provides a clear and transparent evaluation framework that makes norms and expectations for assessments easily understandable to both teachers and students.
- CCT has a moderation process in place to ensure that all essential elements are incorporated into the assessment to provide proper feedback to learners.

Grading Criteria

This grading rubric sets out the marking criteria for your assignment.

[insert grading rubric- This set of marking criteria should be developed into a detailed rubric for each module- support resources are available]

Criteria	Criteria 1 <i>[Insert marking criteria]</i>	Criteria 2 <i>[Insert marking criteria]</i>	Criteria 3 <i>[Insert marking criteria]</i>	Criteria 4 <i>[Insert marking criteria]</i>	Criteria 5 <i>[Insert marking criteria]</i>
Weighting per criteria	e.g. 10 marks	e.g. 10 marks	e.g. 20 marks	e.g. 30 marks	e.g. 30 marks
Excellent (+70%)					
Very Good (60 - 69%)					
Good (50 - 59%)					
Acceptable (40 - 49%)					
Fail (< 39%)					

Criterion	Task 1: Historical Evolution of AI Poster Presentation	Task 1: Video Presentation	Task 2a: Definitions of AI Terms	Task 2b: Analysis of Thermostat	Task 3: Representational System
Weighting per criteria	20 marks	10 marks	15 marks	15 marks	40 marks
Excellent (+70%)	Comprehensive coverage of key milestones, breakthroughs, and influential figures in AI history. Clear and engaging poster presentation with effective organization and communication.	Clear and engaging video providing comprehensive explanation of AI aspects and sections of the poster.	Accurate and comprehensive definitions of all terms, demonstrating deep understanding.	Clear and logical analysis demonstrating understanding of thermostat classification.	Comprehensive and well-defined representational system capturing all aspects accurately. Clear and logically consistent axioms and language.
Very Good (60 - 69%)	Most key aspects are covered with good depth and clarity in AI history. Well-structured and visually appealing poster presentation.	Mostly clear video with good explanation of AI aspects and sections of the poster.	Mostly accurate definitions with good understanding demonstrated.	Mostly clear and logical analysis, with some minor inaccuracies or omissions.	Mostly comprehensive representational system with minor inaccuracies. Mostly clear and logically consistent axioms and language.
Good (50 - 59%)	Some key aspects covered with adequate depth AI history. Poster presentation is somewhat organized and visually appealing.	Somewhat clear video with adequate explanation of AI aspects and sections of the poster.	Somewhat accurate definitions with minor inaccuracies.	Somewhat clear and logical analysis, but may lack coherence or depth.	Somewhat defined representational system with clarity issues. Some inconsistencies in axioms and language.
Acceptable (40 - 49%)	Limited coverage of key aspects with minor inaccuracies AI history. Poster presentation lacks organization or visual appeal.	Limited or unclear video with some explanation of AI aspects and sections of the poster.	Limited definitions with significant gaps in understanding.	Limited or unclear analysis, with significant gaps in reasoning.	Limited or unclear representational system with major gaps or inconsistencies. Axioms and language contain significant ambiguities.
Fail (< 40%)	Inadequate coverage with significant inaccuracies in AI history. Poorly organized and visually unappealing poster presentation.	Ineffective video with unclear or inadequate explanation of AI aspects and sections of the poster.	Inadequate or incorrect definitions, indicating lack of understanding.	Incoherent or incorrect analysis, indicating lack of understanding.	Inadequate or incorrect representational system, and incoherent axioms and language.

Annotated Feedback

Authentic Assessment

- Annotated feedback for student work delivers a personalised touch by enabling lecturers to leave tailored feedback on each student's assignment, which helps students comprehend their own areas of strength and growth.

- **Excellent (+70%)**
- Task 1: The student discussion for task1 is excellent and a clear and precise introduction to ML models, motivation and description of the problem domain in education with 6 variables and 10000 rows are provided. The justification of the project goals are explained using proper citations and authentic references.
- Task 2: The student performed the characterization of the data and pre-processing steps in detail. The demonstration is shown through nice visualisations and code images support the authenticity of the student work. Three splitting's are applied on the dataset and the results are excellent based on the chosen dataset. Cross validation is used to provide the authenticity of ML modelling results.
- Task 3: The student discussed about the purpose of hyperparameter tuning related to the performance of the models in an innovative way for this task. Different hyperparameter tuning techniques are applied to compare the results. GridSearchCV is applied for SVC model to find the optimal hyperparameters and provided justification for the use of this approach.
- Task 4: The results of these models are based on the accuracy, precision, recall and F1 score for the classification models. MAE, MSE, RMSE and R2 score are evaluated for the regression models. The interpretation of graphs is excellent, and the comparative analysis can be enhanced.
- Additional Comments: Comments are provided in Python code in the Jupyter notebook. GitHub link is provided for version control for the project including required commits. Overall, the rationales are justified in an excellent way for all tasks.

General Video Feedback

Authentic Assessment

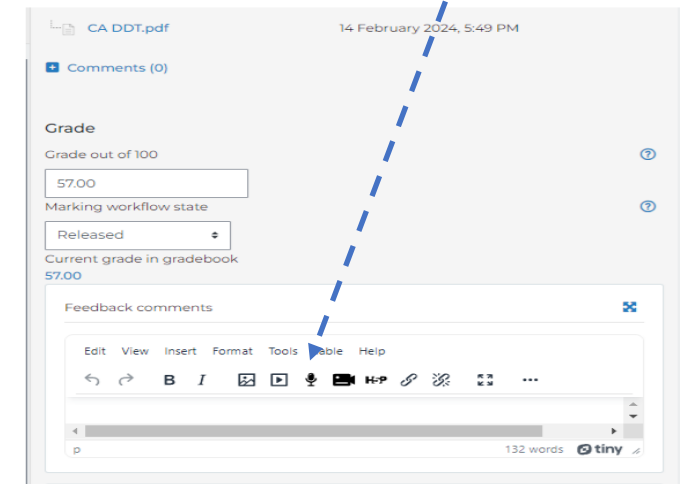
- General video-based feedback gives a dynamic and interesting element to the feedback process by accommodating a variety of frequently occurring errors and concerns observed from the assessment work of different learners, based on their study and implementation.
- To improve the learning experience of the entire cohort, general video-based feedback comments are discussed based on common errors and inaccurate handling of assessment tasks and activities.
- The video is made available on Moodle platform, and this provided the students with the chance to ask specific questions and potentially prevent these errors/ mistakes in the future.

Audio Feedback

Authentic Assessment

- CCT is committed to leveraging technology in the higher education sector to provide smart and customized comments in the form of audio (Kirwan, Raftery & Gormley, 2023) and video formats based on the evaluation of assessment feedback for a particular cohort.
- We aim to boost students' experiences receiving assessment feedback by utilising a blend of state-of-the-art software tools, in particular Moodle and other multimedia platforms, like H5P.
- Audio feedback is provided in the case of special circumstances where the learners faced a difficulty in reading or understanding rubric based or annotated feedback for the assessments including text and multimedia contents.
- We have been observed that audio feedback for assessment enhances students' performance on the subsequent assessments.

Audio and Video Recording Facility on Moodle



Feedback Technologies Usage

- CCT has been employing the use of smart technologies available on Moodle, and the results noted in relation to student participation, competency breakdown, logs, live logs, activity report, course participation, activity completion, and general satisfaction.
- Four methods of feedback employed at CCT are reliable and provide a satisfactory output based on ongoing experience at undergraduate, graduate and postgraduate levels.
- These initiatives have been proven as successful in meeting the evolving needs for contemporary education, and they can serve as a precedent for others seeking to enhance their methods of providing students with audio and video feedback during assessment evaluations in addition or as a replacement to traditional methods.

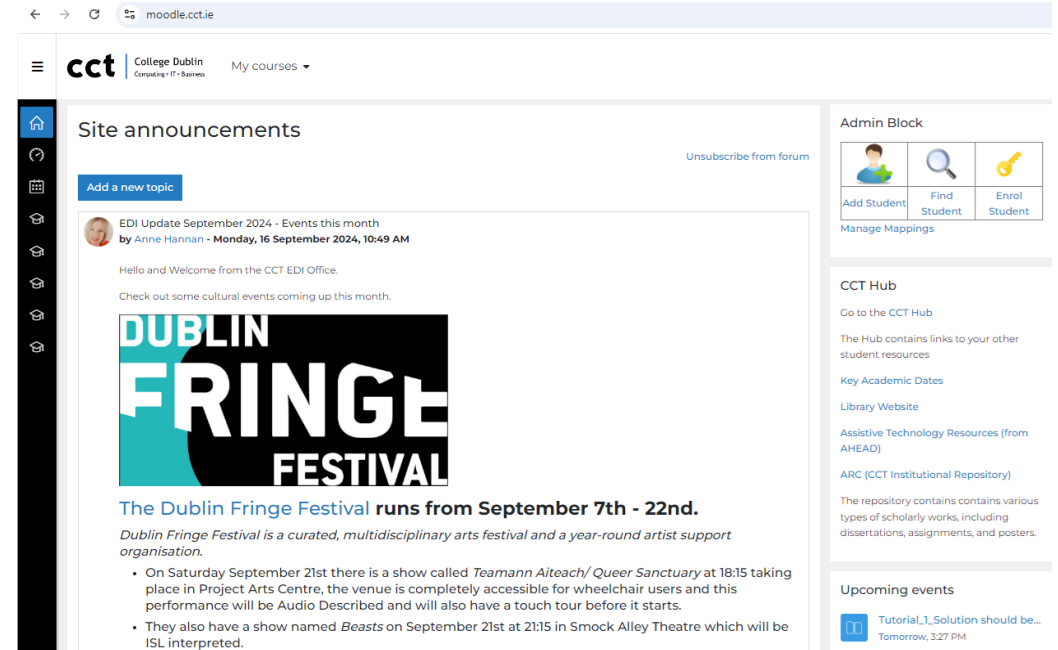
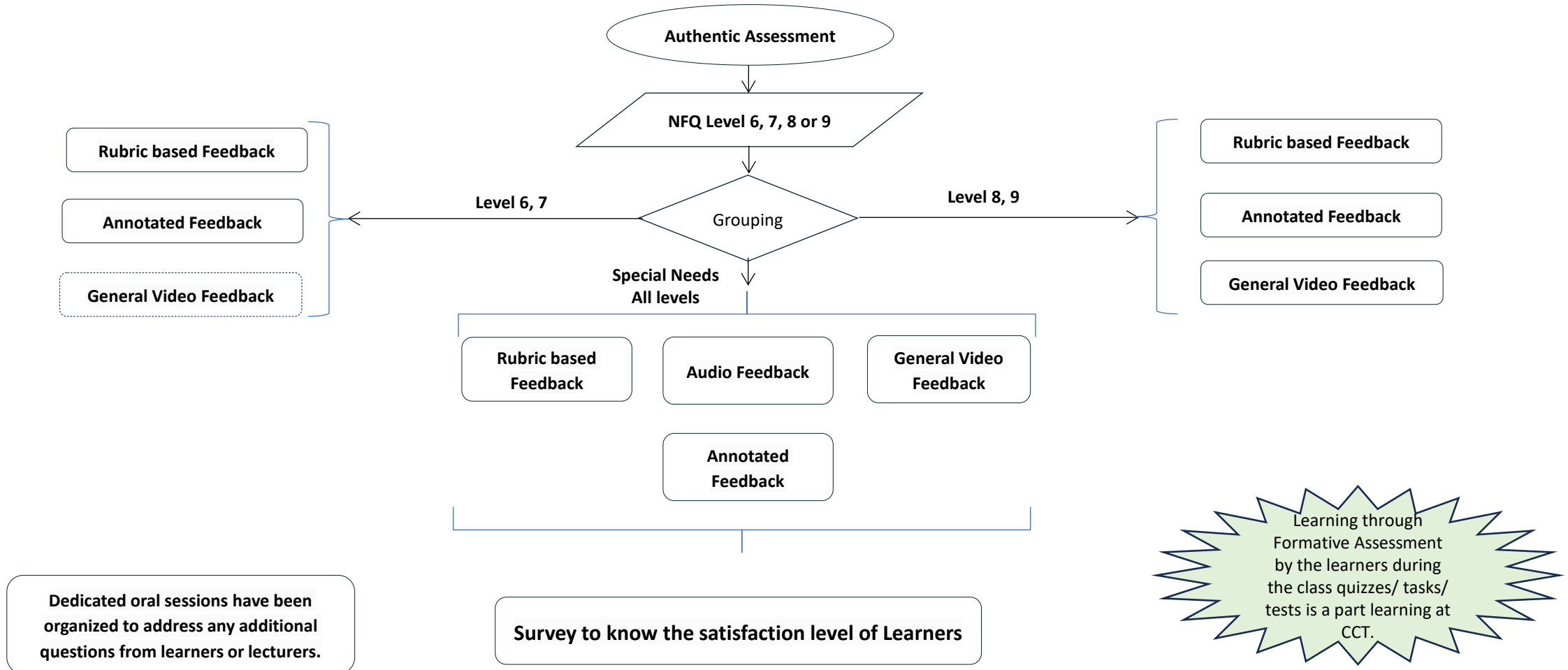


Image Source: CCT Moodle, www.cct.ie

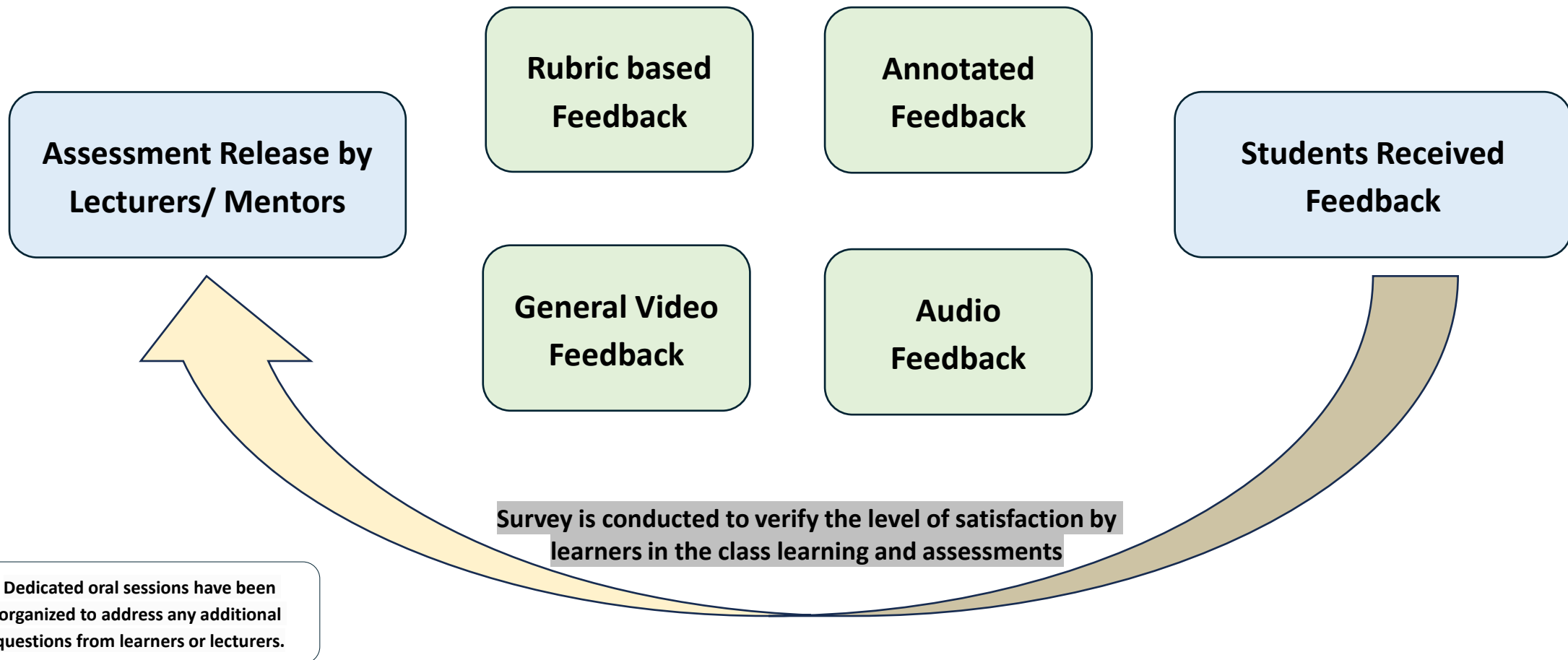
Adaptable Feedback Methodology

Flow Chart



Learners Feedback

Survey



Summary

- Described the importance and impact of Authentic assessment.
- Discussed about 6 essential requirements of Authentic assessment.
- Feedback methodology employed at CCT.
- Rubric based, Annotated, Generalised video and Audio based feedback mechanisms are discussed in detail.
- Presented an adaptable Feedback methodology using a Flow Chart that can be customized to the specific requirements of each class, ensuring that assessments align with learning goals and learner needs.
- Finally, a satisfaction survey is conducted to measure students' contentment with the learning and assessment processes at CCT.

References

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