

Literature Review

“Interactive e-assessment to provide
feedback for music learning on LMS”

Project Planning

Assignment 3

BSc Information Technology

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Introduction

The aim of this project is to develop, design and evaluate an online music learning management system (LMS) using learning analytics, gamification and e-assessment techniques to enhance musicians' instrument playing by capturing learning progress and providing feedback and controlled course guidance.

The literature review is a critical aspect of planning the project as it increases the understanding of the topic, allows for comparison between previous projects that are similar, According to Hart (2018), literature reviews can help understand research requirements and allows the writer to document key issues in the project that needs addressing. In like manner, a literature review helps understand the project features and viability which allows for proper management and risk mitigation.

The topic “Interactive e-assessment to provide feedback for music learning on LMS” describing the content used to test the musicians’ instrument playing techniques includes two (2) important areas of research in online learning such as;

1. **E-assessment Overview** describing its relevance or characteristics
2. **Types of e-assessment**, showing the different categories

159 Words

E-assessment Overview

Improving the quality of the student learning experience is a key issue in the higher education sector (Dermo, 2009). In response Cazan and Indreica (2014) mentions that assessments are essential for gauging a learner’s progress and provides an opportunity to engage learners and give objective feedback. Formerly, students would be evaluated through paper-based and Oral or practical assessments in a classroom setting Crisp (2007), e-assessment, on the other hand, is a process of evaluating the student skills and knowledge by electronic means (N.T. Thomas et al., 2015). Crisp (2006) imposes that e-assessment can promote improved interactions and potentially have realistic environments that more accurately reflect the real world which encourages students to participate. Students can now be tested on automated assessment ICT content to improve their quality of learning and objective feedback (Ridgway et al., 2004). The goal of this research is to understand the interactions between the participants of assessments

to understand the foundation function of the program of tool that is to be selected for designing and implementing the content.

Instrumental Music interactive assessment

According to Barbosa and Garcia (2005) and Russell (2014), their most important e-assessment objectives includes the student, instructor, and ICT. Moreover, Crisp (2007) notes that e-assessment offers new opportunities for students and instructors to interact in a virtual learning environment, going beyond the restrictive framework of the conventional pen and paper approach. Regarding music, Burrack (2002) acknowledges that enhancing the assessment of the students' instrument musical learning and development is typically a continuous process and the success of musicians is often based on how well they perform practically regardless of their theoretical knowledge. Other than theory some music instructors provide practical lessons that are regarded as a challenge in music learning online. Crisp (2014) suggests that interactivity is a well-known concept in online learning as it involves the initiation, response or feedback elements, which according to Evans and Sabry (2003) is three-way model of interactivity in the online environment see figure 1 below.

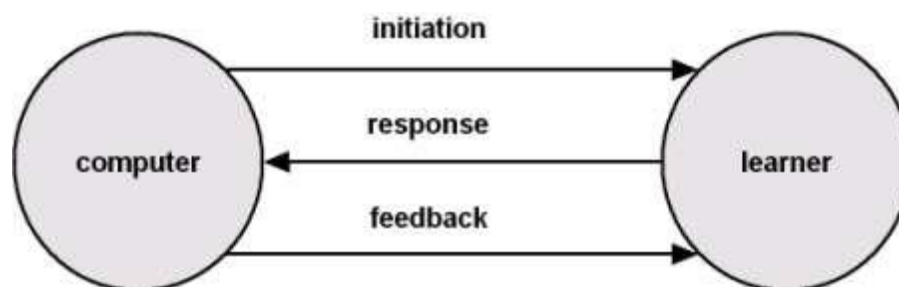


Figure 1. interactivity model for online learning (Evans and Sabry, 2003)

Two interaction methods of e-assessment were observed from this interactivity with the addition of the tutor;

Interaction between the student and ICT (automated).

According to cook (2010), this type of assessment requires only objective questions, which alters the potential for evaluating realistic or open-ended subjects. ICT can provide observations, but it does not provide a means of evaluating musicians' confidence and performance. In music, this method is frequently for assessing instrumental students' musical knowledge. Students are provided with multiple-choice questions or knowledge-based assessments that can provide automatic feedback using ICT.

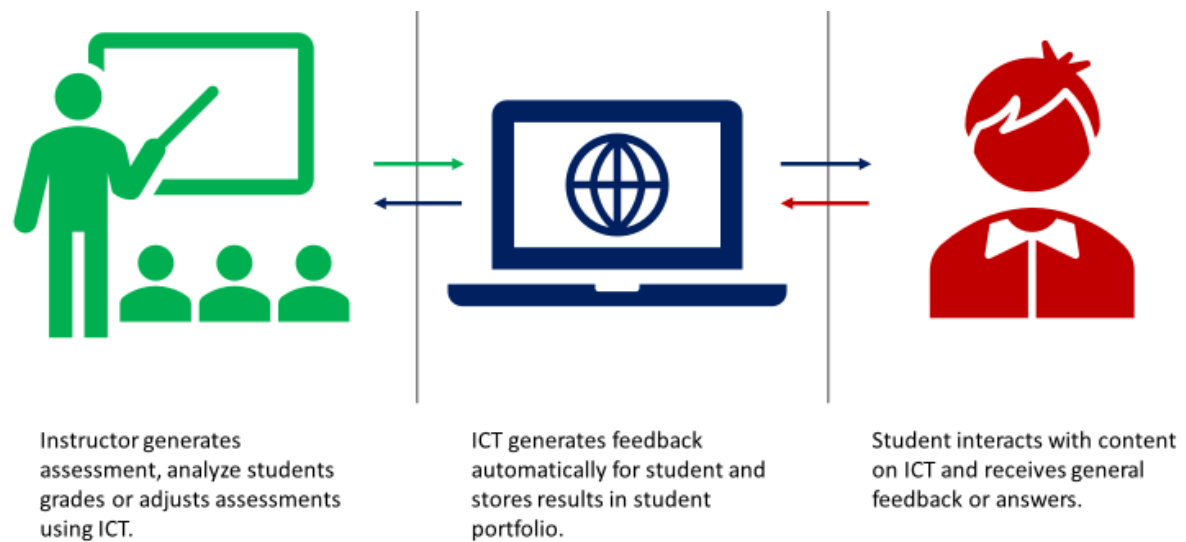


Figure 2. Interaction process for automated assessment

Interactions between student and instructor using ICT (manual)

This method is mostly used in music for assessment of Instrumental Students' Practical performance. The instructor provides constructive content and feedback using rubric forms, sound and video file transfers, etc.

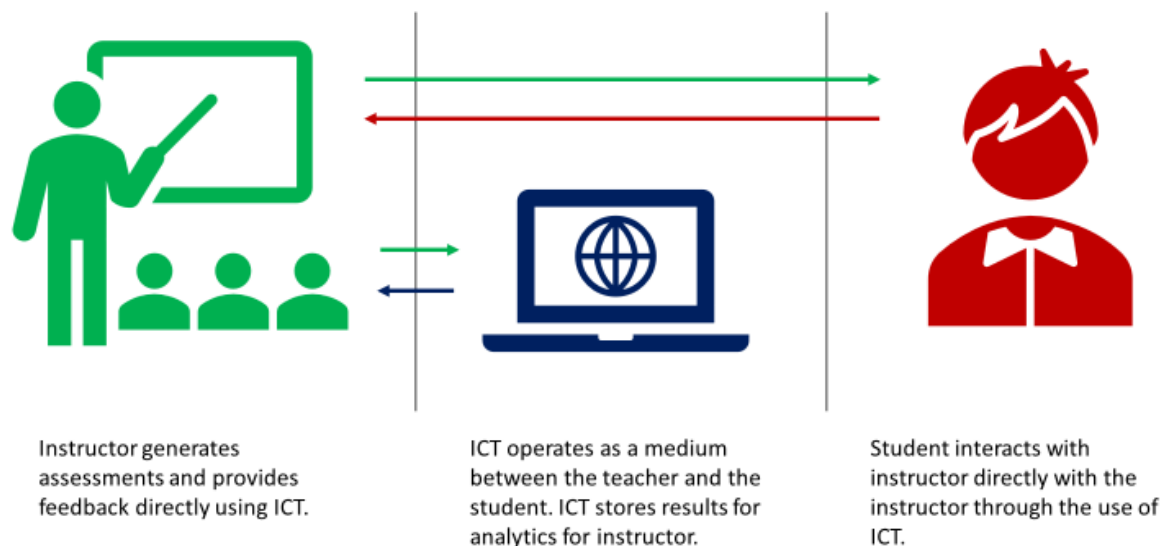


Figure 3. Interaction process for manual assessment.

Figure 2 and Figure 3 respectively, show direct and indirect interaction between student and instructor which supports theory stated by Lloyd and Kennedy (2014) who implied that direct

methods of assessment prompt students to demonstrate their learning while indirect methods request students to reflect on their learning. the practical aspect of music learning can be performed using direct interactions to properly assess the students playing techniques. Also, the instructor's workload has increased when interacting with students. To further understand how e-assessment is used to provide the intended assessment for Instrument practical, the types of assessments were reviewed.

545 Words

Types of e-assessments

According to Crisp (2012) and Crisp (2014), there are 4 different types of assessments, these include diagnostic (pre-assessment for knowledge), formative (assessment during the learning process), benchmark (assessment of and for the future learning), and summative (assessment for the entire program). Figure 4 below shows the relationship between all four (4) assessments.

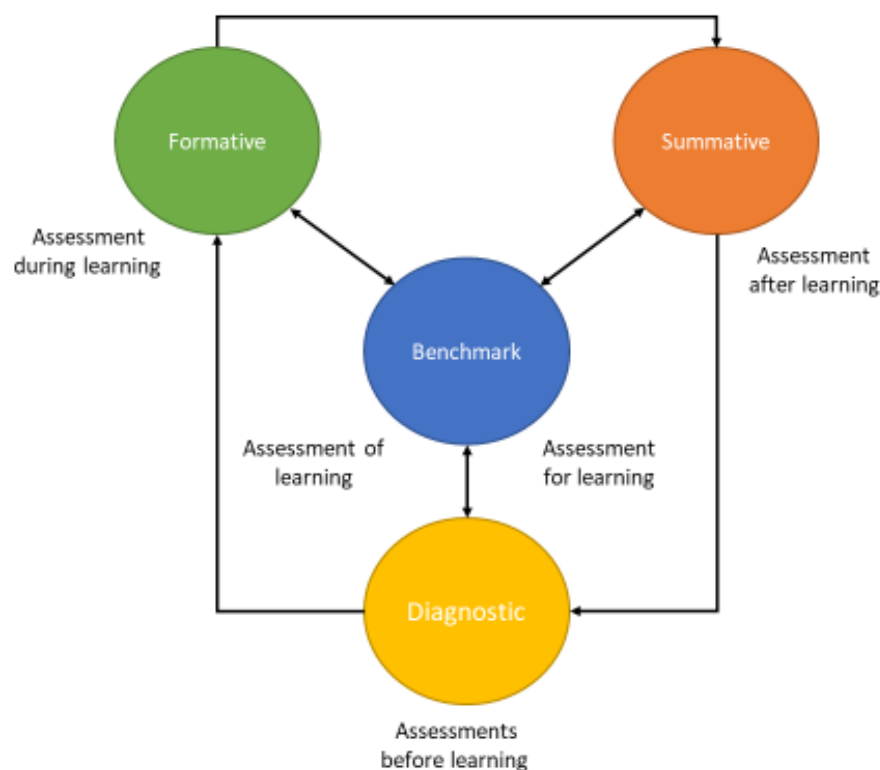


Figure 4. Relationship between diagnostic, formative, summative and benchmark assessments

Benseman and Sutton (2008) state how diagnostic assessment is recognized as an assessment that is underutilized in higher education and does not capture a true picture of students' capabilities. Lynda.com (2012) which is an e-learning website indirectly uses a combination of all 4 assessment methods.

Selection of e-assessment type

Foster (2014) stated that when selecting which assessment methods to use, consider what questions need to be answered. The objective is to find the best type(s) of assessment for interactive learning as a result the assessment types were reviewed using metrics such as;

- **The purpose** which will identify the focus of the assessment
- **Advantages and disadvantages** which will help in the selection of which assessments are best suitable for music online learning.

Table 1. Metrics of an overview of types of assessment

	Diagnostic	Formative	Summative	Benchmark
Purpose	allows a teacher to identify individual students' areas of strength and weaknesses as well as their knowledge, and skills prior to the curriculum or program.	allows students and their teachers to monitor learning progress, identify potential areas where further work is necessary and assist students in reinforcing their learning. Also, to receive feedback while they are still focused on the topic.	usually, the final assessment measuring the entire program. Success is mandatory for awards, certificates, degrees, and progression to the next program or course. to provide final feedback such as a mark or grade.	is to provide an assessment based on previous performance of students and identify the students' current state to provide the necessary feedback.
Advantages	students' strengths and weaknesses are known in advance. permit teachers to adjust their introductory activities so that most students are able to participate at a meaningful level.	Reliefs anxiety about getting everything correct. No marked and most cases can be done over, and the deadline is not mandatory. Provides quick feedback, user engagement which can increase learning and knowledge development.	The final summary reveals if the program is working as intended, Makes academic records, Measures instructor and students' final performance.	Increases competition, increases the performance of students, results provide instructors with information on students' current level, New creative ideas and tests can be done using benchmarking.
Disadvantages	Students usually skip the pre-assessment if not mandatory, newer students may be unfamiliar to the program, students usually don't know the answers.	Monitoring each unit and generating Individual feedback if done directly can be very stressful and time consuming for instructors. Some students may not take assessments seriously.	Can demote failed individuals, No retries or feedback for a fix, authenticity may not be accurate if done using indirect testing methods. Some students may know the answer but forgot due to disabilities.	Students may not understand the assessment, students skip through assessments, students have different learning styles.

Grading and Classification

E-assessments are usually measured in the form of low stakes, medium stakes, and high stakes. According to Cook and Jenkins (2010) distinguishing the assessment is important when planning the recourses required for e-assessments. Please see table 1 below for the relevance of each assessment regarding online learning music.

1. **Diagnostics** assessment according to Crisp (2012) is low stake as it's used to establish a baseline for standards within a course.
2. The **formative** assessment appears often to be equated with 'low stakes' assessment, or 'practice' assessment (Dermo 2011; Pachler et al. 2009 & Mor et al., 2019).
3. **Summative** assessment tasks usually have a high stake (Cook & Jenkins, 2010).
4. **Benchmark** assessment, in general, is a low stake as it is used to gain information and for the implementation of new ideas and is not marked heavily.

Gibbs (2006) and Nicol and Macfarlane-Dick (2006) generated results from an analysis that supports that student learning outcomes can be significantly improved when coupled with timely feedback. Although summative assessments may still dominate the attention of many students it does not accurately measure students' abilities. Swearington (2002) indicated that a variety of methods can be used to ensure quality assessments make up a comprehensive or balanced assessment program. Therefore, relying on only one method to provide information will only reflect part of students' achievement or level. As a result, a final selection for the program is performed using a combination of all four assessments.

405 (Words)

Conclusion

E-assessment is an important feature in learning management systems (LMS). It provides the participants with valuable feedback that improves learning and teaching experience. In addition, ICT is constantly changing the ways that academic work is done in online learning and assessment (Buzzetto-More & Alade, 2006). Therefore assessing students directly is becoming more feasible and less workload on both the student and instructor.

Direct assessment is proven to be more challenging however is preferably better for musical instrument practice.

When summarizing the topic, an example of one interactive e-assessment that provides feedback in an LMS is; indirect interaction where the student and program interact using formative assessment and low stake grade. Examples of these e-assessments are video uploads of music performance for instructor and task-based simulations with a music sheet for theory.

According to the results generated from this review, all (4) types can be used together in one program to generate as much feedback as possible using automated tools. Though stake results were predefined to achieve a standard requirement, it can be modified during the program because courses or programs can change depending on the individual student's ability.

191 Words

Recommendations

The goal of the project is to build a Learning Management System (LMS) that can assess students more accurately while reducing some of the common challenges faced with student-instructor interactions which causes high failure and incompleteness by using the appropriate type of interactive assessment. Based on the literature review conducted, the following recommendations will be implemented in the LMS:

- Diagnostic assessment in the form of a quiz to gain initial information that is stored to monitor growth. To reduce challenges such as students not submitting this section can be made mandatory and short.
- A post-test that serves as a summative assessment using the final music practical exam or project deadline in the form of summative assessment which consists of content from formative assessment units/courses/stages.
- Benchmark assessments in the form of game-based assessment with a billboard showing the students ranking to facilitate competition and reduce dropout rates.
- Each unit or course or stage will have a formative assessment to monitor student's progress and engagement and provide feedback or encouragement.
- Lessons or course content cannot be skipped and is set as mandatory however a student can fast forward lessons or content using formative assessment.
- The student is unable to move to the next stage until a 90% score is achieved in formative assessment. while a diagnostic test score of 30% or more is required to move on to the first lesson/unit and 60% and above test scores are required for a successful pass to achieve a certificate.

- Self-assessment allows the learner to re-take tests and learn from mistakes via feedback provided via formative assessments.
- Automated interaction features for students and instructors to receive quick feedback responses and live update responses ICT.

279 Words

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