

# Authentic Assessment of Modular Distance Learning: Basis for Instructional Materials Development in Agriculture

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**Abstract.** Assessment can be viewed as a way to measure the process, the progress, and the product of learning. However, it is a complex concept within the teaching-learning process especially if it is implemented with the absence of face-to-face instruction. As observed, faculty members who are implementing modular distance learning (MDL) modality are confronted with the challenges of proper utilization of authentic assessment tools in Agriculture. Hence, this study sought the utilization of authentic assessment in Agriculture by Faculty members of state colleges in Northern Mindanao, Philippines in the academic year 2020-2021 and 2021-2022. This study employed a mixed-method research design to gather both quantitative and qualitative data from 139 participants who were given survey questionnaires in digital and print format. A focus group discussion (FGD) of 10 randomly selected participants was conducted virtually to find similarities in the participants' opinions. Results revealed that the faculty members had positive perceptions of authentic assessment. However, most of them faced several challenges in the process of utilizing the assessment tools in terms of preparation, delivery, and evaluation. These challenges were used as a basis for the formulation of a handbook of authentic assessment.

**Keywords:** Authentic assessment; Modular distance learning; Instructional materials development; Agriculture.

## 1.0 Introduction.

Assessment is recognized, both in theory and in practice, as an essential part of the teaching and learning process. The success of both teachers and learners depends upon the data gleaned from the assessment. However, the outbreak of COVID-19 has caused changes in the country's education landscape. These changes involve transitioning to different approaches to learning delivery, including new approaches to assessment.

To ensure that learning continues amidst the global health crisis, the Commission on Higher Education issued a memorandum to all higher education institutions to formulate their respective Learning Continuity Plan (HEI-LCP) (CMO No. 4 Series of 2020). In this context of change, college faculty members face a plethora of challenges not only in adapting to new ways of how students learn but also in gauging the student's understanding of the lessons. The implementation of distance learning poses challenges in the conduct of assessment due to some factors such as limitations on giving immediate feedback and the need to contextualize the assessment tasks. Under this adverse circumstance, the highlighting changes in assessment show a tendency for more authentic assessment methods. The emphasis now is placed on the fundamental questions of why it is important to learn something and how acquired knowledge, skills, and attitudes can be successfully applied in solving real-life problems.

CHED Memorandum Order (CMO) No. 46 series of 2012, outlines policies and standards to enhance quality assurance (QA) in Philippine higher education through an outcome-based and typology-based approach. While it does not specifically focus on authentic assessment practices, the principles it lays out align with authentic assessment practices. Authentic goes beyond traditional tests and embraces real-world tasks, portfolios, projects, and peer feedback.

Therefore, this study sought to determine the utilization of authentic assessments in the Agriculture subjects by the faculty members implementing modular distance learning (MDL) modality of state institutions of higher learning in Northern Mindanao, Philippines.

## **2.0 Methodology**

### **2.1 Research Design**

This study employed a mixed-method research design to gather both quantitative and qualitative data. Quantitative data were gathered to explore faculty members' perceptions and their extent of utilization of authentic assessment tools using a validated researcher-made survey questionnaire. Meanwhile, the qualitative data were collected through a focus group discussion (FGD) of 10 randomly selected participants that was conducted virtually to find similarities in the participants' opinions.

### **2.2 Research Participants**

The study was carried out in six (6) State Universities and Colleges (SUCs) offering BS in Agriculture program. Only those holding permanent teaching items were included in the study. A sample proportion of 80% was employed to determine the exact number of participants per school. Hence, the participants were 139 out of 191 Agriculture faculty in the school years 2020-2021 and 2020-2022 and were given survey questionnaires in digital and print format.

### **2.3 Research Instrument**

The researcher-made questionnaire was based on CHED Memorandum Order No. 46, s— 2012 which has three (3) parts. Apart from the questionnaire, qualitative data were taken from focus group discussions (FGD) to supplement the last part of the questionnaire and to obtain more in-depth information about the authentic assessment. The questionnaire was validated through pilot testing in four (4) public colleges and universities in Region 13 (CARAGA). The reliability coefficient of the questionnaire was sought through Cronbach Alpha using SPSS. It was found to be reliable with a 0.829 value.

### **2.4 Data Gathering Procedure**

The questionnaire was converted into a digital format using Google Forms and distributed to the respondents. Otherwise, the print format was given to those with an unstable internet connection through their respective deans. After collecting the questionnaire, focus group discussions (FGDs) followed. Interviews were conducted in two instances. The first session was done virtually using the FB room, while the second session was carried out face-to-face. Answers to interview questions were recorded and transcribed for qualitative analysis. This helped the researcher find similarities with the participants' opinions gathered from the questionnaire.

### **2.5 Data Analysis Procedure**

After eliciting both quantitative and qualitative data, these were translated, summarized, and analyzed using descriptive and inferential statistics. For questions 1 and 2, a weighted mean was employed to determine the respondents' perceptions and extent of utilization of authentic assessments. Pearson correlation was used for problem 3 to determine if a significant relationship exists between the respondents' perceptions and their utilization of authentic assessment tools. Lastly, for question 4, data were coded. The codes were then categorized, thematically arranged, and further analyzed to augment the qualitative analysis.

### **2.6 Ethical Considerations**

This research study followed ethical guidelines. It obtained prior informed consent in which respondents have the freedom to withdraw from the study at any time. The anonymity of the respondents was maintained and their well-being was safeguarded.

### 3.0 Results and Discussion

#### 3.1 Perceptions of the teachers toward authentic assessment?

**Table 1.** Faculty members' perceptions of authentic assessment

| OVERALL MEAN | QUALITATIVE DESCRIPTION                                                   | INTERPRETATION |
|--------------|---------------------------------------------------------------------------|----------------|
| 3.62         | The teachers strongly agree with the perceptions of authentic assessment. | Strongly Agree |

Results showed that the respondents have positive perceptions of authentic assessment. The faculty members strongly agree with each positive statement about authentic assessment. This is consistent with the findings of some researchers that faculty members held favorable perceptions of authentic assessment (Villaroel et al, 2020; Sewagegn & Dale, 2020). As shown in Table 1, the overall mean signified that in general, the respondents perceived authentic assessment positively. These perceptions imply that teachers believe that authentic assessment leads to better teaching and learning. It helps the teachers to reflect on the relevance of what they teach and provides results that are essential for improving instruction. As stated by Schultz (2022), authentic assessment allows teachers to review and evaluate the teaching and learning process. Moreover, authentic assessment is vital to determine what teachers must do to improve and develop students' abilities (Dargo and Dimas, 2021).

#### 3.2 Extent of Teachers' Utilization of Varied Authentic Assessment Tools

**Table 2.** Faculty members' extent of utilization of authentic assessment tools in modular distance learning

| OVERALL MEAN | QUALITATIVE DESCRIPTION | INTERPRETATION     |
|--------------|-------------------------|--------------------|
| 3.25         | High Extent             | Very much utilized |

It can be gleaned from Table 2 that the overall mean signified that the suggested assessment tools for Modular Distance Learning (MDL), as enclosed in the CMO were very highly utilized by the faculty members since there were 8 out of 12 assessment tools that were very highly utilized. In a similar study by Tugano (2022) on secondary communication arts teachers, the majority of the teachers utilized authentic assessment tools. The interview analysis results also supported the above indications. As stated earlier, these assessment tools were readily made available online through various educational sites. Hence, faculty members implementing modular distance learning modalities instantly utilized these tools.

#### 3.3 Relationship Between Faculty Members' Perceptions and Utilization of Authentic Assessment Tools

**Table 3.** Analysis of the relationship between faculty members' perceptions and their utilization of authentic assessment tools

| INDEPENDENT VARIABLE        | DEPENDENT VARIABLE              | CORRELATION COEFFICIENT | P-VALUE | REMARK      |
|-----------------------------|---------------------------------|-------------------------|---------|-------------|
| Faculty members' perception | Utilization of assessment tools | 0.169                   | 0.047   | Significant |

Shown in Table 3 is the low positive correlation between faculty members' perception of authentic assessment and their utilization of the assessment tools. This meant that if the faculty members' extent of agreeing about authentic assessment increases, the extent of utilization of the authentic assessment tools slightly increases. Although the association was low, the result revealed that there was a significant relationship between faculty members' perception of authentic assessment and their utilization of the assessment tools since the p-value of 0.047 was less than 0.05 level of significance. This implied that the extent of utilization of the authentic assessment tools was significantly affected by the faculty members' extent of agreeing about authentic assessment.

The study found that the Aggie faculty members' perceptions toward authentic assessment had a significant effect on their utilization practices. The faculty members tried to fully utilize these authentic assessment tools in the teaching-learning process. However, their positive perceptions were not fully reflected in practice. Varied factors that were primarily attributed to the restrictions of face-to-face instructions influenced the implementation of authentic assessment. As a result, their utilization practices were also greatly affected. In this case, only those authentic assessment tools that are ready-made and can easily be applied were given to students.

The above interpretation was consistent with findings by Jou et al (2022) that teachers seemed to be facing a conflict in effective assessment in their classroom despite their reported favorable perception of assessment. The same thing was true with the findings that while teachers held positive views of formative assessment and feedback, they did not use formative assessments regularly or effectively.

### **3.4 Challenges Encountered in Utilizing Authentic Assessment**

Meanwhile, most teachers encountered challenges in the process of utilizing the assessment tools. Through document analysis of the focus group discussion (FGD), in conjunction with the responses to the open-ended questions, the teachers cited several challenges which are discussed under the following themes: preparation of authentic assessment tools, assessment delivery, and evaluation of learners' output.

#### ***Theme 1: Preparation of Authentic Assessment Tools***

The utilization of authentic assessment revealed that faculty members have difficulties in preparing authentic assessment tools including developing instruments and determining the indicators or criteria. According to Bustillo and Aguilos (2022), teachers must engage in proper planning before implementation, such as preparing task instructions, scoring guides, and assessment rubrics. However, faculty members have encountered challenges in the preparation that are primarily attributed to the time element and their competence. As indicated by a respondent:

*"It takes time to contextualize the activities in the modules that would suit the needs of my students. It's not an easy task to incorporate all the competencies allotted in one semester in a simple way that they can easily understand. Sometimes I wonder if they can absorb all the competencies given the limited time."* (P2-T1-F-41yo-12S)

Lack of training in authentic assessment is also a challenge. Sabri et al. (2019) stated that authentic assessment is quite complicated as there is still a lack of faculty members' knowledge. This statement is also in the same line with the respondent's perspective below.

*"There are many competencies in Agriculture and it is difficult to integrate these competencies. I also lack expertise in the area of assessment. So I only use the modules given instead of making or developing localized materials."* (P1-T1-M-42yo-13S)

Consequently, without adequate knowledge and skills in authentic assessment, problems may appear among faculty members who apply the assessment

#### ***Theme 2: Assessment Delivery***

Several challenges were identified in the process of assessment delivery. First, faculty members have difficulty establishing proximity. This is a challenge due to the physical distance between the faculty members and the students. In distance learning, it is difficult for faculty members to provide assistance to the students, clarify their misconceptions, and give immediate feedback during assessment activities. As articulated by a respondent:

*"Unlike in the face-to-face classes, the instructors could provide support in the form of simplifying or translating the tasks to vernacular and provide more cues until they would be able to work on their own."* (P10-T1-M-29yo-8S)

As emphasized by one of the respondents, the presence of a faculty member is highly needed in scaffolding and assessment delivery:

*"In implementing authentic assessment, it's not the result that matters most but the process. If possible, student appointments must be done frequently because some students do not have someone in the family who is more knowledgeable who can help them or guide them in accomplishing authentic tasks."* (P6-T3-F-41yo-15S)

This claim is supported by Salamuddin (2021) who stated that authentic assessment emphasizes the process rather than the product of learning. Other concerns are the monitoring of the learners and the proper guidance they received as they accomplished their tasks. Not all students are autonomous and can work with minimal supervision from more mature adults. In the same manner, not all students have family members who can facilitate learning at home. As expressed by some respondents:

*"Some students require close monitoring and guidance in completing the given task. Reality is, not all of them have somebody (at home) who's capable of providing such." (P8-T3-F-30yo-7S)*

The abovementioned statements showed the absence of mediated learning experiences which according to Talimodao and Madrigal (2021) occur when skilled persons assist the student to grasp something that he could not do independently.

### ***Theme 3: Evaluation of Learners' Output***

Based on the questionnaire and interview results, most faculty members faced the difficulty of evaluating the learners' performance. This challenge mainly dwells on the validity of students' output. As expressed by most faculty members:

*"It is difficult to determine whether the output is made by the students themselves. We are not sure if the students are the ones doing the assessments given." (P8-T3-F-30yo-7S)*

The teachers tried to administer the authentic assessment amidst the restrictions set in the "new normal" learning delivery but were confronted with various challenges. In this case, the teachers tended to only utilize some assessment tools that can be facilitated within the framework of modular distance learning.

### **3.5 Proposed Innovation**

With the results of this study, the basis for the formulation of innovation was laid. A handbook of authentic assessment was conceived to aid the faculty members in the planning and implementation of authentic assessment. More importantly, this will help Agriculture students attain an in-depth understanding of concepts and skills, and learn how to use these in dealing with the problems and uncertainties that may arise now and in the future. In crafting the handbook, the researcher focused on the identified challenges encountered by the faculty respondents and aimed to address the gaps in the effective implementation of authentic assessment. The handbook includes a compilation of performance tasks, highlighting Wiggins' and McTighe's GRASPS model (Wiggins & McTighe, 2005). It involves three stages that are streamlined to help teachers teach for understanding and help learners make knowledge meaningful. The first stage is the *desired outcome* of the unit that deals with the standards, transfer goal, enduring understanding, essential questions, and the domains of learning. The second stage is the assessment of understanding that focuses on the culminating performance task that is differentiated. This task refers to the *product* which is one of the four elements of differentiated instruction suggested by Koh et al (2019) that deals with a culminating task that encourages learners to rehearse, apply, and extend what he has learned in a unit. This stage covers the narrative of the performance task and the analytic rubric that uses valid criteria and indicators. Lastly, the learning plan flow delves into the possible learning activities teaching approaches, and strategies a teacher can use as the unit is unfurled to the learners.

### **4.0 Conclusion**

In this study, it could be drawn that the faculty members have positive perceptions toward authentic assessment. The majority of them strongly imbibed the perceptions inculcated by the Commission on Higher Education. These perceptions played a significant effect on their utilization of authentic assessment tools. Although the association is low, still, it indicated that faculty members' extent of utilization will likely increase as their extent of agreeing about authentic assessment increases. From the findings, as faculty members had positive perceptions toward authentic assessment, they also tried to utilize authentic assessment tools in their teaching-learning activities. In practice, the implementation of authentic assessment by the faculty members is still diverse. This notion was supported by the responses of the faculty participants upon examining their experiences toward utilization using FGD. Faculty members have explicitly elaborated that some assessment tools worked well while some did not. They encountered challenges in utilizing these tools due to the absence of face-to-face classes. They tried to administer the authentic assessment amidst the restrictions set in the "new normal" learning delivery but were confronted with various challenges. In this case, the faculty members tended to only utilize some assessment tools that can be facilitated within the framework of modular distance learning.

Given the findings and conclusions, the following recommendations are offered: a) Faculty members are encouraged to continue using the different authentic assessment tools in teaching Agriculture subjects, b) University and College Officials may provide technical assistance through capacity-building activities in instructional materials development to equip Agriculture faculty members with enabling methods and strategies for better utilization and practice, c) The designed handbook of authentic assessment for Agriculture may be utilized by state universities and colleges in Agriculture to address the needs of their faculty in developing authentic assessment tools.

## 5.0 Contributions of Author

The sole author is responsible for conducting the study, writing, encoding, data analysis, and editing

## 6.0 Funding

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## 7.0 Conflict of Interests

No conflict of interest exists in the conduct of the study. Plagiarism was strictly avoided and there was no bias in the interpretation of findings. The results were used purely for research.

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