Multiple Attempts in Online Assessments Address Concerns in Academic Honesty: Perceptions of Students and Teachers

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ABSTRACT

The Covid-19 pandemic challenged different educational institutions in the country to provide different approaches to many educational concerns such as assessment of student learning and academic honesty. This study dealt with the perceptions of students and teachers about the use of Multiple Attempts Format (MAF) in online assessments and how it addresses concerns in academic honesty. The Perceptions on MAF and Academic Honesty Questionnaire (PMAHQ) served as the main instrument. Of the 545 students who responded to the survey, 89% agreed and strongly agreed that MAF addresses concerns on academic honesty. They strongly agreed that through MAF, they are able to improve their scores in online assessments honestly, and that MAF strengthens their academic honesty. Relatedly, 100% of the 10 teachers who responded to the survey hold very positive perception on MAF. They strongly agreed that MAF teaches students about responsibility, making decisions, and taking risks to improve their scores. They also strongly agreed that because MAF provides students with immediate feedback (shows student's score in the previous attempt), it therefore helps the students decide if they will take the next attempt or not, to improve their scores. The insights obtained from both the students' and the teachers' perceptions may be used as bases for improving the online assessment practices in content subjects in the new normal in basic education.

CCS CONCEPTS

• **Applied computing**; • **Education**; • **Distance learning**; • **E-learning**; • **Computer-managed instruction**;

KEYWORDS

online assessment format, rethinking assessments, online assessments in the pandemic, online assessments in Science, academic honesty in online assessments

ACM Reference Format:
Milet-Carmelita A. Estidola, Maricar S. Prudente, and Socorro E. Aguja. 2021. Multiple Attempts in Online Assessments Address Concerns in Academic Honesty: Perceptions of Students and Teachers. In *2021 12th International Conference on E-Education, E-Business, E-Management, and E-Learning (IC4E 2021), January 10–13, 2021, Tokyo, Japan.* ACM, New York, NY, USA, 5 pages. https://doi.org/10.1145/3450148.3450178

IC4E 2021, January 10–13, 2021, Tokyo, Japan

ACM ISBN 978-1-4503-8854-2/21/01…$15.00
https://doi.org/10.1145/3450148.3450178

1 INTRODUCTION

When brick and mortar schools in the country shifted to distance education because of the pandemic, conducting summative assessments remotely became a challenging task because of concerns in academic honesty. As written by [4], increased problems in area of academic integrity have been linked to proliferation of online and alternative learning environments. Assessment integrity and academic honesty in examinations outside assessment/testing centers is (also) a grave concern among distance learning institutions [2]. Special challenges and affordances exist in assessing student learning in online environments [7]. While one study states that there is no guaranteed method to prevent cheating when exams are given online [8], DepEd Order No. 031, 2020, declares it is necessary to utilize alternative tools and strategies for assessing learning.

As a teacher and a member of the middle administration leading the Junior High School Science teachers at De La Salle Zobel School (DLSZ), the researcher continued to search for assessment formats that will strengthen students' academic integrity. There were focus group discussions and deliberations in the team about the online delivery of assessments in Science. With the researcher leading, the team explored Learning Management Systems and their examination features. Video conferencing applications and online examination platforms were looked at and tried out. Eventually, the team zeroed into using a delivery format that will support the school's trust of strengthening students' academic honesty: The Multiple Attempts Format in online assessments or MAF. Instead of putting energy in detection of dishonesty in online assessments, MAF drives the teachers and administrators to devote more effort in redesigning assessments that measure student learning and at the same time restructure assessment delivery. Hence, this study spotlighted the teachers' and the students' perceptions on the use of MAF to address concerns in academic honesty. It was aimed at finding answers to the research questions: How do students perceive the use of MAF in addressing concerns in academic honesty in remote assessments? How do teachers perceive the use of MAF in addressing concerns in academic honesty in remote assessments?

2 METHODS

The study made use of descriptive quantitative approach. The researcher collaborated with ten (10) Science teachers in the Junior High School (JHS) department who agreed to try out MAF as an online delivery format, each for three (3) Multiple Choice (MC) summative assessments and two (2) formative assessments in Science. MAF was used in the mentioned assessments in Earth Science,

Table 1: Survey Statements (SS) based on MAF Counter Measures to Cheating in Online Assessments

SS No.	Statements
3	Students take the next attempt rather than get answers from a batchmate
4	MAF discourages students from taking and sharing screenshots of the test.
5	Students would most likely study their own answers and take the next attempt
6	The time for 2nd or 3rd attempts in MAF provides a time allowance for slight disconnection.
7	The time limit in MAF is just enough for students to study their own answers and take the next attempt.

Chemistry, and Physics classes in JHS. 545 students from those classes voluntarily completed and submitted responses to the survey. At the end of the grading period, the researcher gathered the teachers' and the students' perceptions on the use of MAF and how it addresses concerns in academic honesty. Out of the 545 students, 45% are females, and 55% are males. While 70% of the teachers are females, 30 % of them are males. 30% are Earth Science teachers, 30% of them are Physics teachers, and the remaining 40% are Chemistry teachers. In addition, 70% of the faculty participants have been teaching in DLSZ for 5 years and below, 20% for 6-10 years, and 10% for 16 yrs. and above.

2.1 The Survey Instrument: Perceptions on MAF and Academic Honesty Questionnaire (PMAHQ)

To address the objective of the study, the researcher developed a 10-item questionnaire: Perceptions on MAF and Academic Honesty Questionnaire (PMAHQ) as the main instrument. Two lead researchers in DLSZ examined the survey statements in terms of relevance. Statistical analysis of the participants' responses was computed using SPSS version 22.

2.1.1 MAF Counter Measures. Five (5) items or survey statements were drawn from the features of MAF that serve as countermeasures to the forms of academic honesty in online tests described in the study "Cheating in Online Student Assessment: Beyond Plagiarism", by Neil Rowe in 2004. A big problem with online assessments is that it is hard to ensure all students take them simultaneously [10]. Otherwise, earlier students can supply answers to later students if some of the same questions are used: It is easy for the earlier students to take screen shots (copies of what is on the screen) under most operating systems, and otherwise, earlier students could just memorize the questions [12]. In MAF, Items are shuffled, choices are shuffled, items are reversed. So even if someone gets a screenshot of the items, he will still need to study and not get direct answers for the items he will see in advance. In addition, MAF tests are timed. Time limit is just right for 2-3 attempts depending on the level of competencies. The 2nd or 3rd attempt encourages students to study their mistakes and take the next attempt, giving the test taker no time to take and share a screenshot of the test.

Another serious problem in online assessment is that students can break their connection to the server during an assessment, then claim they lost power and test answers and need to start over, giving them extra time to consult collaborators or unauthorized reference materials [12]. In MAF, 2nd and 3rd attempts are provided, but within a strict time limit that is long enough for them to study their own answers and take the next attempt, but not too long for them to get answers from unauthorized sources. In this study, a student who gets disconnected for more than 3 minutes is advised to take the make-up test instead.

2.1.2 Principles of Meaningful Online Assessments.

2.1.3 The researcher further studied the principles of online assessment as explained in the article "Five Principles for Meaningful Online Assessment", from the University of Calgary website, Taylor Institute for Teaching and Learning in 2020, and formulated 5 more survey statements from the characteristics of MAF that match the said principles. Provide clear instructions and quality feedback. As many students (and instructors) are still novices in online learning spaces, it is more important than ever to articulate your expectations and provide clear instructions for assessment tasks. Just as vital is the feedback students receive during and after assessment tasks.

2.1.4 Instructions in MAF tests are simple and are reflected in the teachers' assessment reminders. For JHS students, it is the researcher's strong recommendation for the teachers to try out MAF in formative assessments first before using it in a summative assessment. In addition, after the 1st attempt, the student will receive his scores and

Table 2: Survey Statements (SS) based on MAF Features that support the Principles of Meaningful Online Assessments

SS No.	Statements
1	MAF improves students' scores honestly
2	MAF strengthens students' academic honesty
8	MAF shows student's score in the previous attempt
9	MAF shows student's incorrect answers in the previous attempt
10	MAF teaches students about the values of responsibility, making decisions, and taking risks to improve scores

Table 3: Reliability Statistics

Reliability Statistics		
Cronbach's Alpha	**Cronbach's Alpha Based on Standardized Items**	**N of Items**
.952	**.968**	**10**

see his incorrect answers. This immediate feedback helps the student decide if he will take the next attempt or not and prepares him too in taking the next attempt. Emphasize Academic Integrity. Academic integrity is the foundation of the development and acquisition of knowledge and is based on values of honesty, trust, responsibility, and respect. MAF helps students improve their scores while they learn responsibility, taking risks, and intellectual honesty. The teacher records the score in the last attempt, to teach the students the value of responsibility and taking risks to improve.

The participants responded to a four (4) -pt. Likert Scale, from 1-strongly disagree, 2-disagree, 3-agree, 4-strongly agree. Using this scale, the percentage of item frequencies were calculated and presented in (Table 1) for the students' perceptions, and in (Table 5) for the teachers' perceptions.

To measure the internal consistency and reliability of PMAHQ, Cronbach's α was calculated. Cronbach's α of was computed at α =0.952 (N=497; number of items=10), using SPSS version 22 program.

Online focus group discussions within unit meetings and interviews through Google Meet and Hangouts were done to further identify the teachers' perceptions on the effectiveness of MAF in MC type assessments given online. Descriptive statistics and thematic analysis were used to investigate the data gathered.

3 RESULTS AND DISCUSSION:

Both the teacher and student participants showed they have very positive perceptions about MAF and how it addresses concerns on academic honesty in online MC tests.

3.1 Principles of Meaningful Online Assessment (Survey Items 1,2 8,9,10)

In can be seen from the students' responses to PMAHQ (Table1) that 57% strongly agreed, and 34% agreed that MAF teaches them to improve their scores honestly by studying their correct and incorrect answers and taking the next attempt. Relatedly, 54% strongly agreed and 35% agreed that MAF strengthens students' academic honesty in taking multiple choice tests in Science.

Both the students and teachers agreed and strongly agreed to the following statements:

- MAF teaches students to improve their scores honestly by studying their correct and incorrect answers and taking the next attempt.
- MAF strengthens students' academic honesty in taking multiple choice tests in Science.
- MAF provides students with immediate feedback (shows student's score in the previous attempt) and helps the students decide if they will take the next attempt or not.
- MAF provides students with immediate feedback (shows student's incorrect answers in the previous attempt) and helps the students improve their score by focusing on concepts or competencies they still need to learn or attain.

Table 4: Students' Mean Perception (in %) regarding Multiple Attempts Format (MAF) and Academic Honesty, N= 545

Statements	Mean	Strongly Disagree	Disagree	Agree	Strongly Agree
1.MAF improves students' scores honestly	3.39	8.3	0.9	33.9	56.9
2. MAF strengthens students' academic honesty	3.36	7.3	3.5	34.9	54.3
3. Students take the next attempt rather than get answers from a batchmate	3.37	8.1	4.2	30.8	56.9
4. MAF discourages students from taking and sharing screenshots of the test.	3.39	7.5	6.1	31.4	54.9
5. Students would most likely study their own answers and take the next attempt	3.38	7.5	3.5	32.1	56.9
6.The time for 2nd or 3rd attempts in MAF provides a time allowance for slight disconnection.	3.32	8.1	2.9	38	51
7. The time limit in MAF is just enough for students to study their own answers and take the next attempt.	3.32	7.3	4.0	37.6	51
8. MAF shows student's score in the previous attempt	3.38	7.9	1.3	35.8	55
9. MAF shows student's incorrect answers in the previous attempt	3.37	7.3	3.3	34.3	55
10. MAF teaches students about the values of responsibility, making decisions, and taking risks to improve scores	3.40	7.5	1.3	35	56

Legend: 1- Strongly Disagree 2- Disagree 3- Agree 4- Strongly Agree

Table 5: Teachers' Mean Perception (in %) regarding Multiple Attempts Format (MAF) and Academic Honesty, N= 10

Statements	Mean	Strongly Disagree	Disagree	Agree	Strongly Agree
1.MAF improves students' scores honestly	3.9	0	0	10	90
2. MAF strengthens students' academic honesty	3.7	0	0	30	70
3. Students take the next attempt rather than get answers from a batchmate	3.9	0	0	10	90
4. MAF discourages students from taking and sharing screenshots of the test.	3.2	0	10	60	30
5. Students would most likely study their own answers and take the next attempt	3.5	0	0	50	50
6.The time for 2nd or 3rd attempts in MAF provides a time allowance for slight disconnection.	3.2	0	10	60	30
7. The time limit in MAF is just enough for students to study their own answers and take the next attempt.	3.8	0	0	20	80
8. MAF shows student's score in the previous attempt	4.0	0	0	0	100
9. MAF shows student's incorrect answers in the previous attempt	3.9	0	0	10	90
10. MAF teaches students about the values of responsibility, making decisions, and taking risks to improve scores	3.8	0	0	20	80

Legend: 1- Strongly Disagree 2- Disagree 3- Agree 4- Strongly Agree

- MAF teaches students about the values of responsibility, making decisions, and taking risks to improve scores.

3.2 Forms of Academic Dishonesty in Online Tests (Survey Items 3,4,5,6,7)

In addition, to the statement "In MAF, students would most likely study their own answers and take the next attempt rather than get help from a batchmate", 57% strongly agreed and 31% agreed. Very interestingly, to the statement "In MAF, students would most likely study their own answers and take the next attempt rather than search for answers on the internet", 57% strongly agreed and 32% agreed.

The teachers' responses to PMAHQ also showed very positive perceptions about MAF and academic honesty (Table 2). 90%-100% agreed and strongly agreed to all the statements in PMAHQ. It is interesting to note however, that 10% disagreed to the statements, "MAF discourages students from taking and sharing screenshots of the test." and "The time for 2nd or 3rd attempts in MAF provides a time allowance for slight disconnection."

Both the students and teachers agreed and strongly agreed about the following statements:

- In MAF, students would most likely study their own answers and take the next attempt rather than get help from a batchmate. Students take the next attempt rather than get answers from a batchmate.
- MAF discourages students from taking and sharing screenshots of the test.
- In MAF, students would most likely study their own answers and take the next attempt rather than search for answers on the internet.
- The time for 2nd or 3rd attempts in MAF provide time allowance for slight disconnection.
- The time limit in MAF is long enough for students to study their own answers and take the next attempt, but NOT too long for them to get answers from unauthorized sources.

4 CONCLUSION AND RECOMMENDATION

The Perceptions on MAF and Academic Honesty Questionnaire (PMAHQ) revealed valuable insights from the teachers' and students' thoughts about how MAF can address concerns in academic honesty in online MC exams in JHS Science. While there is no guaranteed 100% cheat-proof mechanism in online assessments, this study proved that MAF can bring our online assessments closer to 100% better than just plainly delivering them online. In addition, the teachers' highly positive perception on the use of MAF supports the institution's thrust of strengthening our students' intellectual honesty better than exerting effort in detection and giving sanctions for dishonesty.

Relatedly, the survey results support the idea that the use of MAF is a proactive strategy to deter students from thinking about cheating. According to [6] there are three approaches to minimize online cheating. The virtues approach seeks to develop students who do not want to cheat. Second is the prevention approach, which seeks to eliminate or reduce opportunities for students to cheat and to reduce the pressure to cheat. Finally, there is the police approach, which seeks to catch and punish those who do cheat. The use of MAF is consistent with the first two approaches.

The results of the present study confirm that, indeed, MAF addresses teachers' concerns on academic honesty when they deliver assessments online. The positive perception of both the students and the teachers can serve as bases for further use of MAF as an online assessment format in other content subjects in DLSZ. It is recommended that further studies be made beyond MC types of tests and beyond the Junior High School level.

ACKNOWLEDGMENTS

Special thanks to the administrators of De La Salle Santiago Zobel School namely; Brother President, Br. Bernard S. Oca FSC; Executive Vice President, Mr. Rafael Javier A. Reloza; Ms Janette Torrato and Ms Genevieve Pillar for examining the survey statements in PMAHQ, and the JHS Vice Principal Ms . Leah Marie T. Castillo for inspiring the researcher to delve into action research writing. Many thanks to DLSU Manila's pioneer researchers Dr. Maricar Prudente and Dr. Socorro Aguja for their guidance, and the DLSZ Junior High School Science faculty members, especially the Lead Teachers: Ms. Jhuly Villanueva, Mr. Cris Naiel Moreno, and Mr. Ezrel Alucilja for the collaboration. Lastly, thanks to the 545 JHS students who voluntarily completed and submitted their responses to the survey questionnaire.

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