

# A Journey to Journal Writing: Significance of Non-Threatening Assessment in the Remedial Class of Grade 12 General Biology 1 Students

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**Abstract:- This action research delved into the effect of non-threatening assessment, particularly learning journals, to the performance of the grade 12 students of Holy Angel University in their remedial class in General Biology I. The students wrote eight learning journals on the topic discussed to them in remedial class. Using an adapted rubric, the researcher described the content of the learning journals and the learners' achievement in the researcher-made pre- and posttest. The researcher found that the students learned the lessons in remedial class as concepts were reflected in their journal entries and that there is a significant difference in the pre- and posttest scores, with the students registering higher mean in the posttest. The study recommends the use of journal writing as a non-threatening assessment and the longer schedule of remedial sessions for mastery.**

**Keywords:- Non-Threatening Assessment, Journal Writing, Remedial Class.**

## I. INTRODUCTION

Intervention measures to reinforce instruction are the primary concept of a remedial class. They underpin students' learning difficulties and also advance their academic growth and standing in class. Both teachers and students hold remedial teaching programs as a means of refining academic performance (Munene, Peter, & Njoka, 2017). Some interventions are new teaching and/or learning strategies, for example, the integration of technology, aiming to address difficulties such as those in the macro skills or those related to solving to eventually improve academic performance.

Holy Angel University (HAU) is a top performing autonomous university in Central Luzon. Its basic education, particularly senior high school, has over 3,000 students and a number of them experience academic failures. Promoting its advocacy "No Student is Left Behind," the Basic Education Department of HAU has a remedial program. The program is aptly called "After Class Coaching Program" (ACCOP) which includes after class teaching-learning sessions with the same learning competencies being targeted in class and delivered with appropriate teaching strategies to students across grade levels. This program highlights and succors the under achieving learners to meet the demands of specific subject areas in which they failed.

The Science Department of HAU specifically the Biology subject conducts remedial sessions to grade 12 students who failed to meet the standards and learning competencies of the lessons covered in a specific quarter. The Department identifies students who garnered an average grade below 75% in General Biology I and invites them to join the remedial program for free with the consent of their parents. The program is scheduled two to three hours a week set in a classroom under the supervision of a Biology teacher.

Being one of the teachers who conduct the remedial classes in Biology, the researcher finds designing activities and evaluations is very challenging. Because of failing during the quarter prior to the remedial class, these learners may already fear the subject and may be pressured to pass and prove themselves. Assessing them is also inevitable since the teacher must keep track of their progress.

Traditional way of doing remedial class tends to offer ordinary activities and assessments which may increase students' feeling of anxiety and strain. Students may also be barely stifled by the pressure to score high particularly in objective type of tests given in the remedial sessions. As a result, students may demonstrate levels of anxiety in assessment thus, testing and evaluation should be considered specially in circumstances like in the remedial setting where debilitating stress possibly weakens their capability to show their innermost potential. This anxiety may likely to influence the improvement of the learners' performance (Vogelaar, Bakker, Elliott, & Resing, 2017).

Furthermore, assessing should not be threatening. There are myriad of ways and means to measure students learning without deterring them. One way to elevate learners' performance on a science test is to present assessment as a tool to improve mastery without harming (Souchal, Toczek, Darnon, Smeding, Butera, & Martinot, 2014). Also, differentiating the classroom through varying forms of assessments gives students more opportunities to learn and to ace tests and gives teachers knowledge on how much their students learn.

Thinking how a remedial class may become a welcoming classroom set-up instead of a mental pressure and distress environment, the researcher thought of dealing with the remedial students with allaying criticisms. An assessment that targets learning competencies without threatening students is a commendable way of assisting these learners towards the stress-free grasps of lessons. In

the same manner, the students would not feel being judged and intimidated despite their initial failure in the subject.

There are numerous non-threatening assessment strategies that can be utilized to measure students' understanding without really giving a hard time and stress to them. However, journal writing is considered more disarming and motivating for students to think without totally being judged. Through this, learners could freely transcribe all the significant things with unlimited ideas.

Existing studies show that journals are found effective forms of assessments like in the research study of Hussein (2018) where reflective journal writing has a significant effect to improve learners' understanding of concepts, uphold growth mindset, and enlighten their inner thoughts. Moreover, Al-Rawahi and Al-Balushi (2015) investigated the efficacy of reflective science journal writing of the students on their self-regulated learning strategies and recommended that science teachers should encourage the use of reflective journal writing. The same concept is also proven in the studies of Shaarawy (2014) where findings indicated that journal writing had significant contribution to the progress of cognitive critical thinking skills and of Xhaferi and Xhaferi (2016) where results showed that reflection journals guide students to grow into independent learners, mirror their learning experiences and recognize the best and worthwhile learning schemes.

Journal writing is indeed essential in reinforcing content area knowledge. When it stems directly from learners' general studies, it provides special opportunities for them to have enriched learning. There are twenty types of learning journals such as Question Journal, Metacognitive Journal, Connecting Journal, 'I Wonder...' Journal, Visualization Journal, Doodle Journal, Concept/Example Journal, and 5Ws Journal (Heick, 2019).

In this study, different types of journals were utilized as non-threatening assessments to the remedial class attendees who had a failing grade of 74% and below in the first quarter.

#### A. Context

This action research focused on the Grade 12 General Biology I students under Science, Technology, Engineering and Mathematics (STEM) and General Academic Strand (GAS) strands. These learners failed in the first quarter of school year 2019-2020 and participated in the remedial class sessions and experienced non-threatening assessment, particularly journal writing, during the sessions.

#### B. Research Question

What are the effects of the use of different types of journal writing in the remedial class sessions to the students?

#### C. Sub-questions

- How do students learn content with a non-threatening assessment?
- Is there a significant difference between the pretest and the posttest scores of the students?

#### D. Hypotheses

- Null Hypothesis: There is no significant difference between the pretest and the posttest scores of the students.
- Alternative Hypothesis: There is a significant difference between the pretest and the posttest scores of the students.

#### E. Preparation

The learning competencies in General Biology I under K to 12 Basic Education Curriculum Guide (Department of Education or DepEd, 2016) were covered in the construction of the pre-test and posttest and the non-threatening assessment particularly journal writing. Three reference materials in General Biology I were also utilized as sources of test questions. Considering these target proficiencies and content standards of the curriculum, the researcher delved into the different types of journal. Head adapted and customized the journals in accordance to the four components of the subject which are Carbohydrates and Proteins, Lipids and Nucleic Acids, Cellular Respiration and Photosynthesis.

#### F. Ethical Considerations

Both male and female grade 12 students from STEM and GAS were involved. Particularly, the remedial class students were requested as research participants. They were all given an informed consent (Appendix A) which the researcher discussed with them and which the students signed. The researcher obtained the parental consent of the students who were minors during the time of data collection. This informed and parental consent features the nature and objective of the action research. Likewise, it specifies the responsibilities of both the participants and researcher as well as the anonymity and confidentiality of the study.

#### G. Development of the Test and the Design of the Journal Writing

Given the encompassing scope of the curriculum guide, the researcher developed a pre-test/posttest with table of specification or TOS (Appendix B) with 10 questions on each component.

The learning journals were also designed based on the four components. The researcher utilized the different types of learning journal namely: Question Journal, Metacognitive Journal, Connecting Journal, 'I Wonder...' Journal, Visualization Journal, Doodle Journal, Concept/Example Journal, and 5Ws Journal. Each component was squeezed out as core for each type of journal.

#### H. Validation

The validation of the test material was done by three senior high school Biology teachers and one college English professor. Three of them were completing their master's degree in Biology and while the other one has a doctorate degree in English and is teaching in the tertiary level during the time of the study.

The four validators were tasked to assess the 40-item multiple choice test (Appendix C). The consultant-validator examined the questions and validate them using the tool that the researcher formulated (Appendix D) which focused on content, validity, clarity, grammatical structure, and mechanics. They rated their agreement or disagreement by checking the appropriate column and using the scale from 1 to 4 (4-Strongly Agree, 3-Agree, 2-Disagree, 1-Strongly Disagree). Suggestions like changing the options, the format of the stem, and the arrangement of options were likewise considered. A space was also provided in the tool for the validators' other comments and recommendations.

## II. METHODS

### A. Test and Journal Administration and Checking

The researcher administered the pretest/posttest to the students on September 18 and October 9 respectively, which were the first and the last days of the remedial classes. During both occasions, the researcher explained the general instructions though a pre-examination orientation which included directions on how to answer, the time required to finish the examination (one hour), and most importantly the nature and objective of the examination. The test was answered by shading the letter that corresponds to the right answer. Changing of the answers was discouraged since the answer sheet was checked through cellphone application, specifically by a Zip Grade. The classroom in which the test was done was conducive for testing. The Cronbach's Alpha is 0.201 in the pretest and is 0.726 in the posttest.

### B. Learning Journal

The way to write each journal and the rubric were explained to the students. All journal entries were written in a photocopied material sheet provided by the researcher. The journal writing was done right after the discussion of each lesson. Participants had 30 to 40 minutes to write.

A learning journal is a compilation of writing done for achieving of learning rather than demonstrating of learning. **Learning Journals** comprise of 20 types including Question Journal, Metacognitive Journal, Connecting Journal, 'I Wonder...' Journal, Visualization Journal, Doodle Journal, Concept/Example Journal, and 5Ws Journal that make students think (Heick, 2019). The researcher employed eight types of journal identified in this study to the attendees while they were dealing with the topics covered in the remedial class.

The **Question Journal** (Appendix E) is an inquiry-based assessment that focuses on the queries of the students on the topics being discussed. This journal teaches the students to ask significant questions based on their comprehension of the lesson. Besides the context, this also helps the students to develop their art of questioning. To further guide students in formulating their own questions, the researcher provided them two options. He prepared ready-made questions which they needed to answer; thereafter they could write their own questions or follow up questions based on the presented topic and questions.

The **Metacognitive Journal** (Appendix F) emphasizes the "thinking about thinking" of the learners. It mirrors the students thinking on what and how they learned. To really map out the students' learning and capacity about their thoughts on the given topic, the researcher utilized the KWHL chart specifically, "What I know", "What I want to know", "How will I find out?" and "What I have learned". In this way, the researcher could assess they were thinking about what and how they learned the subject matter.

The **Connecting Journal** (Appendix G) builds the connection between the new knowledge the students have learned and the old concepts they are already familiar with. It frames the students' thinking about how the scientific terms and processes connect to relevant perceptions and situations encountered. In this journal, the researcher gave some practical circumstances that apply to the theory of the presented topic. To ensure that the students could relate to the topic, he provided examples vividly seen and observable in their everyday lives.

The **'I Wonder...'** Journal (Appendix H) features the imagination of the students in terms of how they really wonder on things. It is synonymous to Question Journal; however, this journal does not require detailed entries. To build up students' curiosity, the researcher provided the learners with questions that correspond to the fill in the blank, "I wonder if...". The students then wrote specific items they pondered about. This journal gives learners a chance to freely write anything which they are most curious about the topic being discussed.

Using learning topics as the focus of journal writing strengthens the writing process by providing pre-writing activities and background experiences on which the students can draw (Springer, 1996). The **Visualization Journal** (Appendix I) promotes explicit visualization of the newly acquired knowledge. It also creates visual metaphors or analogy on the role and function of a specific thing that students have just learned. Since the topic entails illustrations which depict structures, the researcher intended that students would elucidate the difference between DNA and RNA through drawing or illustration of their detailed structures.

A learning journal motivates interest and encourages creativity. It stimulates learners to think in new perspectives and fascinating ways about the content under consideration. This form of assessment also allows the students to express their creativity and use their knowledge (Springer, 1996). The **Doodle Journal** (Appendix J) makes the learners simply scribble their learning experience. It has no other requirement but to explicate what the learners drew and why they drew it. Apart from the usual journal which involves writing conventions, this journal will encourage the students to draw and engage with arts. With this type, the researcher let the learners doodle the concept presented in the discussion. They were able to synthesize the lesson through visuals and illustrations in a space allotted to them.

The **Concept/Example Journal** (Appendix K) stimulates thinking by means of concepts and examples. The learners would recall and write something about the concepts presented to them. It is akin to Connection Journal where the concepts are being linked or interconnected to the other concepts. It is also more evident, direct and easier for the students to emerging knowledge if they merely cite examples of certain theories or models. With the scheduled topic in the remedial class, the researcher gave the students an opportunity to accomplish both concept and example journals. Hence, they could give the concepts and examples at the same time.

The **5Ws Journal** (Appendix L) frames the 5W's: Who, What, Where, Why, and When into a non-intimidating assessment. These 5W questions can assess students' learning by directing and pointing to the specific answers. The Question Journal and 'I Wonder...' Journal can be utilized and considered by the students in answering and getting the probable responses to the 5W questions. In doing this type of journal, students may not worry about getting wrong answers. The researcher made the 5W questions in the manner that the students will not engage again with the usual objective type of test. At this time, they will accomplish the 5W's conversely making their own ideas out of the given area of focus.

To check and describe the journal entries, the researcher adapted a rubric (Appendix M). The rubric has bases of scores which are Knowledge / Understanding (Information and Ideas), Thinking/Inquiry (Analyzing and Explaining), Communication (Language and Style), Application (Conventions in Language) and Making Connections (Getting Personal) with corresponding points. The ratings were Excellent (or 18-20 points), Good (13-17), Okay (8-12) and Poor (5-7).

To analyze the pre- and posttest scores, he used percentage and mean. To determine significant difference between the pretest and post-test scores a one-sample, dependent t-test was performed. The test is deemed appropriate given the homogeneity of the sample, randomness of data collection, and the goal of establishing a measurable difference between the scores obtained from a single group of sample.

### III. RESULTS AND DISCUSSION

#### A. Content of the Journals

**Concept/Example Journal.** In the first session of the remedial class the topics were Carbohydrates and Proteins. There were two participants who got an Excellent rating; they conscientiously explained the concept of Carbohydrates with accurate information and insightful ideas. They cited precise examples supported well by relevant evidence and rationale. Ten students were rated as Good as they expressed their ideas supported by appropriate marks or bases. Furthermore, they made considerable personal connections with the topic.

**Question Journal.** The topic Proteins was apportioned, four of the participants were excellent as they answered the questions with substantial concepts. Moreover, the meaning and the intent were clear and engaging with few minor mechanical errors. Nine of the participants scored Good where they answered the ready-made questions with favorable responses. Five students wrote their follow up questions in the space allotted. Most of their queries were on the topic Proteins.

Two participants got a Poor mark in both journals because they presented incomplete or inaccurate information and ideas. Likewise, they expressed few ideas with limited number of support and there were frequent major mechanical errors.

**Metacognitive Journal.** With the topic Lipids, the nine participants scored from 13 to 17 categorized as Good. Since the KWL chart is somehow used and accomplished in regular classes, there was an apparent completion of the chart with two to three entries in each column. There were only two participants who got an Excellent mark because they completely answered all columns with depth and detailed and accurate items. Sixteen of them showed evidence of learning as they demonstrated a thorough understanding in the L column writing more than two or three concepts.

**Visualization Journal.** Ten of the participants scored 8 to 12 points or Okay. Their illustrations of DNA and RNA make evident inferences about elements of the topic, but key concepts were misleading. One of the participants illustrated only literal meaning and his images had no connection to the textual explanation. However, there was one of them who extended and enhanced the text with his own interpretations. His interpretation had indicative words, related feelings and know-hows or open responses to the text.

**'I Wonder...' Journal and Connecting Journal.** For the topic Cellular Respiration, both journals were combined since the topic is broad in nature.

Both journals were effective in the remedial class attendees as fourteen of them earned Good rating. Furthermore, no participants scored Poor in both types. The results show that the participants really wondered and made personal connections to the topic Cellular Respiration.

**5 W's Journal and Doodle Journal.** Both journals were used for the subject matter Photosynthesis. In the 5 W's Journal, the participants were able to answer the 5W questions on the given lesson. Specifically and surprisingly, among the W questions, students expressed their answers in the Why question outstandingly. Nonetheless, ten students scored from 13 to 17 or with a Good rating.

Although the researcher presumed that Doodle journal would be very interesting to the learners since they would only draw their learnings, five of participants were still in the Poor rating for they scribbled their learning without decodable meaning and insights. Similarly, they failed to explain what and why they drew the objects.

Generally, most of the remedial class attendees rendered Good (13-17) performance in all types of journals. Although minimal number scored Poor with raw score of 5-7, still a majority got more than the target score. The turnout of these journals shows their understanding of the lessons.

**B. Pretest and Posttest Scores**

In the pretest, the lowest score was seven (17.5%) and the highest was 16 (40%) the 40-item test; none passed the 60% mark as specified by the DepEd. In the posttest, eight (20%) was still the lowest score while the highest was 26 (65%); one participant or 5.8% passed. From the mean of 10.88 in the pretest, the mean in the posttest is 15.82. The scores of each student are below.

Student	Pretest	Posttest
A	8	13
B	16	14
C	12	16
D	9	23
E	15	19
F	11	16
G	11	23
H	9	11
I	16	20
J	12	12
K	7	8
L	9	12
M	7	10
N	7	10
O	10	26
P	14	20
Q	12	16
Mean	10.88	15.82

Table 1: Scores of the Participants

Notably, the students showed improvement on the data mainly in the posttest results. While there is a higher mean in the posttest, only five of the 17 learners passed or scored more than 50%. However, during the second quarter, 10 or

59% of them passed their General Biology 1 class. There were 2 learners who even reached the grade of 80% above.

Descriptive statistics reveals that the mean pretest scores (mean=10.88, SD= 3.04) of the students were lower than their post-test scores (mean=15.82, SD=5.27).

Test	Mean	N	Std. Deviation	Std. Error Mean
Pretest	10.8824	17	3.03896	.73706
Posttest	15.8235	17	5.27062	1.27831

Table 2. Paired Samples Statistics

Table 3 shows that there is statistical evidence of correlation with .440 correlations. The mean difference between paired observations is significantly 0.77.

	N	Correlation	Sig.
Pretest and posttest	17	.440	.077

Table 3: Paired Samples Correlations

Results show that there is a statistically significant difference between the two sets of scores (t=-4.25, df=16) given that the p-value (p = 0.00) is less than the set level of significance (alpha = 0.05).

		Paired Differences 95% Confidence Interval of the Difference		
		Upper	t	Df
Pretest	and Posttest	-2.47894	-4.254	16
				Sig. (2-tailed)
				.001

Table 4: Paired Samples Test

The positive results between the tests and the journals are related to the findings of Embse and Hasson (2012) stating that familiarity with testing brings no anxiety. These learners have been exposed to non-threatening tests as these had to be taken in the remedial sessions. The participants showed strong self-confidence and perseverance in answering these two, the post-test and journals. Since their expressions and own ways are weapons to successful journals, they had not built insecurity and self-doubt.

The studies of Liem et al. (2011), House and Telese (2011), and Van Boekel and Martin (2014) provide explanations behind good grades, which are achievement motivation, security, and conformity; distraction avoidance; and successful coping with academic pressure respectively.

#### IV. CONCLUSIONS

The researcher concluded that the participants learned content as shown in their Good performance in journal writing. Good means they have learned and correctly integrated the lessons in their journal entries.

Also, the research participants answered remarkably well in all types of journals. They exhibited such potentials to cope up with their learning difficulties. They demonstrated confidence in giving their response especially in Concept/Example Journal and Question Journal which is an indicator that contents and concepts were retained.

There is a significant relationship between the pretest and the posttest.

Generally, participants averagely learned from the remedial session with non-threatening assessments and had complex understanding of concepts and did not simply memorize them.

#### RECOMMENDATIONS

Considering the results of this study, the researcher recommends the extension of the time of the remedial class sessions for mastery. In remedial classes, they may use journal writing which could not only boost the confidence of the students in the test taking but also allow them to express themselves in writing and even in drawing. They should consider that learners are varied and have unique characteristics.

The administrators especially the subject area coordinators may regularly look into the different assessments that their teachers are developing and employing to their respective students, most particularly in the remedial class. They may also conduct or organize a conference about non-threatening assessments so, teachers are fully aware of this kind of tests that are very appealing to their learners.

Moreover, the learners on their own may opt to continue their learning journal and make journal writing a habit. In this way, they may easily learn concepts, connect them to real life, and retain them meaningfully.

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