



# CLIPS IN IMPROVING THE PERFORMANCE OF GRADE 10-F STUDENTS IN HEREDITY, INHERITANCE, AND VARIATION

Molina, Lerma V.

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Republic of the Philippines  
**Department of Education**  
Region II – Cagayan Valley  
Schools Division of Cagayan

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300451 Claveria School of Arts and Trades  
Claveria East District

**CLIPS IN IMPROVING THE PERFORMANCE OF GRADE 10-F STUDENTS  
IN HEREDITY, INHERITANCE, AND VARIATION**



Lerma V. Molina  
Teacher III  
[lerma.molina@deped.gov.ph](mailto:lerma.molina@deped.gov.ph)  
09050626349

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**Address:** Regional Government Center, Carig Sur, Tuguegarao City, 3500  
**Telephone Nos.:** PLDT (078) 377-1065; Globe Landline (078) 255-5317, (078) 255-5318  
**Email Address:** [sdo.cagayan@deped.gov.ph](mailto:sdo.cagayan@deped.gov.ph)  
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Lerma V. Molina  
Teacher III  
Claveria School of Arts and Trades

## I. Abstract

*This study was conducted to determine the effectiveness of the Computer-Aided Learning Instruction Platform in Science (CLIPS) in improving the performance of the Grade 10-F students in Heredity, Inheritance, and Variation using One Group Pretest – Posttest Quasi-Experimental Research Design. The participants were the 41 Grade 10-F students of the Claveria School of Arts and Trades School Year 2020-2021 using total enumeration. The CLIPS was divided into 4 albums: video clips, PowerPoints, trivia, and quiz for the week. These enrichment materials were uploaded in the Facebook Group and group chat for the students to access at their convenient time. The 30- item teacher-made pretest and posttest were used as the main instrument in gathering the data. Mean, Standard deviation, Paired sample t-test, and Eta-squared were used to analyze the results of the pretest and posttest of the participants. There is a big increase in the performance level of the participants from their pretest mean score to their posttest mean score. The result of the Eta squared which is a large effect size confirms the effectiveness of the CLIPS to the Grade 10- F, particularly in Heredity, Inheritance, and Variation. The study showed significant results, so it is recommended that this will serve as a basis in the preparation of a school improvement plan to alleviate the performance of the school in Science and it is recommended for its adoption and utilization. The research can be disseminated through INSET and research conferences. A parallel study may be done to test the validity of CLIPS as an intervention.*

**Keywords:** Computer-Aided Instruction, Facebook group, enriched learning and video lessons, interactive quiz



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## II. Acknowledgement

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Lerma V. Molina



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**Telephone Nos.:** PLDT (078) 377-1065; Globe Landline (078) 255-5317, (078) 255-5318  
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### III. Context and Rationale

Teaching science in this time of pandemic is tough and challenging. With the new landscape of our education today, it is very hard to adapt to the sudden and major shift to modular learning. To better understand science theories and concepts, they should be accompanied with practical demonstrations and experiments. With the use of videoclips and other computer-aided instructions which are believed to be a powerful way to arouse student's interest, active participation, enriched knowledge, and retention for better learning outcome among them is achieved.

Science literacy in our country is extremely deteriorating. Based on the result of the 2018 Program for International Student Assessment (PISA), the Philippines obtained an average Scientific Literacy score of 357 points which is significantly lower than the average score of OECD of 489 points. The mean score of Filipino students is within Proficiency Level. Furthermore, from the National Achievement Test (NAT) result it was reflected that the overall scores for Grade 10 for 2017 and 2018 were 44.09 and 44.59, respectively. The lowest MPS ever scores in history for Grade 10 in 2017 MPS and the third lowest for 2018.

Based on the study of Raja (2018) titled, The Impact of Modern Technology in Education, visual explanations on concepts make learning fun and enjoyable for students. They can participate more in the classroom and even teachers get a chance to make their classes more interactive and more interesting.



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The Computer-Aided Learning Instruction Platform in Science (CLIPS) was in relation to the study of Chua et al. (2020) on “The Status of the Implementation of the E-Learning Classroom In Selected Higher Education Institutions in Region IV-A Amidst The COVID-19 Crisis”, they found out that Facebook Messenger is one of the most convenient mode of alternative learning in this pandemic time.

As stipulated in the Department Order No. 39, series of 2012, titled “Policy Guidelines on Addressing Learning Gaps in Secondary”, the use of technology-based instructions like videoclips was identified as one of the suggested various interventions that can bridge learning gaps. In addition, DepEd Order 51, s. 2010 or the Guidelines on Strengthening Science Education supports the program as stipulated in number 2.3. on procurement of instructional materials/devices including reference books, video materials and software in Science.

Teaching has not been easy during this COVID 19 pandemic, the current situation forced most of the teachers and students to adjust in different ways. That is why teachers must device and create means that can address these problems as emphasized in DepEd Order no.12 s. 2020, also known as Basic Education Learning Continuity Plan (BELCP).

Based on the result of Proficiency Level of Achievement (PLA) last School Year 2019-2020 of Science 10 Classes, third quarter has the lowest Mean Score of 83.20. Based on the item analysis on the administered Diagnostic Test to the Grade 10-F students this current school year for the third quarter competencies, it was found out that Heredity, Inheritance and



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Variation got the lowest percentage of 74.50. The same group of students obtained 82.12 in their Science PLA during the first quarter this School Year 2020-2021, out of 41 students 5 were Advanced (90 and above), 5 were Proficient ( 85-89), 19 were Approaching Proficiency (80-84) and 12 were Developing (75-79). Although no one has a descriptive rating of Beginning, it is very alarming that almost 50% of the class categorized as Approaching Proficiency. For the second quarter they obtained 84.00 in their PLA, where 4 were Advanced, 18 were Proficient, 15 were Approaching Proficiency, 3 were Beginning and 1 was Developing.

Based on the LESF all the Grade 10-F students have gadgets and possible internet connections. It is for these reasons that the researcher conceived the integration of **Computer-aided Learning Instruction Platform in Science (CLIPS)** to improve the performance of the Grade 10-F students of Claveria School of Arts and Trades for School Year 2020-2021 in Heredity, Inheritance and Variation.

#### **IV. Intervention, Innovation and Strategy**

The **Computer-Aided Learning Instruction Platform in Science ( CLIPS)** was an intervention to enrich the participants' learning and to supplement the given modules/ Learning Activity Sheets.

With the belief that CLIPS will improve the performance of the participants, the researcher created a group chat and Facebook Group as platform in uploading/integrating contextualized videoclips and powerpoint presentations in their lessons since all the participants have access to internet and have already Facebook accounts. The intervention materials uploaded in



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the Facebook group were divided into 4 albums: videoclips , powerpoints, trivia/ facts and quiz for the week . Some of the videos and powerpoints used were teacher-made that is why these intervention materials undergone for a Quality Assurance in the School and District Quality Assurance Team. The videos, powerpoint presentations and trivia were uploaded in the Facebook Group/messenger every Sundays 8:00-9:00 o'clock in the morning and students were monitored during Mondays which was their regular class time in Science. The trivia was used to stimulate/tickle the mind of the participants. The participants watched the uploaded video and powerpoint and they can use these to further understand the given module/ learning activity sheet. After which, a five -item multiple choice quiz was given to the participants for them to answer. Answers were sent through private messenger. Participants gave their hashtags in the comment section to share their reflections about their lesson learned. Likewise, the participants also gave their feedback and/or queries. The interactive quiz for the week were uploaded during Saturdays around 5 P.M. for further assessment of their improvement. Answers were also sent via e-mail, private messenger and some through paper. Virtual class through google classroom was also conducted once in every two weeks for the researcher to further discuss the topics and to enrich the participant's learning.

Prior to the conduct of the intervention, the researcher conducted orientation of participants and parents/guardians through phone call and limited home visitation (observing minimum health protocols) to inform how the intervention works. Orientation to the parents was also done during the



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Parent's Meeting. Since COVID-19 situation in the locality was alarming, the researcher followed Resolution No. 29 of the IATF and DepED health standard as stipulated in Deped Order No. 14, s. 2020. With the helped of the teachers assigned in the barangay, the pretest was administered to the participants and was retrieved immediately. The researcher monitored the participants via messenger videocall and chat during the duration for queries that came across in the process. The researcher also devised a monitoring tool to trace the participants in the used of the intervention. There were times when internet was not possible, the researcher also conducted a limited home visitation observing safety protocols, for the researcher to transfer the video/powerpoint via Bluetooth. The intervention was implemented from June 6, 2021, to July 23, 2021 with the topic Heredity, Inheritance and Variation with the Grade 10- F students of the Claveria School of Arts and Trades.

## V. Research Questions

This action research aimed to improve the performance of Grade 10-F students in Heredity, Inheritance and Variation using **Computer-aided Learning Instruction Platform in Science (CLIPS)**.

Specifically, it aimed to answer the following questions:

1. What are the mean scores in the pretest and posttest of the participants?
2. Is there a significant difference between the pretest and posttest scores of the participants?
3. What is the effect size of CLIPS in improving the performance of Grade 10-F students in Heredity, Inheritance and Variation?



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4. What activity plan should be done to sustain/ improve/ develop the intervention and its utilization?

## **VI. Action Research Methods**

This action research used the One group Pretest- Posttest Quasi-Experimental Research Design. This form of experimental research design, all the participants were given the same intervention and assessments.

### **A. Participants and /or Other Sources of Data Information**

Total enumeration of the participants was used in gathering the data. The participants were the 24 boys and 17 girls or a total of 41 students enrolled in Grade 10-F of the Claveria School of Arts and Trades for the School Year 2020-2021. The sources of data were the pretest and posttest result. Both pretest and posttest were a 30-item test in a Multiple-Choice type with the topics DNA Structure, Protein Synthesis, and Mutations. These were interpreted and analyzed.

### **A. Data Gathering Procedure**

The data gathering period for the administration of the 30-item multiple choice pretest was administered to the participants with the helped of the teachers assigned in the barangay on June 6, 2021. The teacher in the assigned barangay distributed the pretest during the distribution of summative test to the parents and retrieved on the same day as they retrieved the summative tests. Computer -Aided Learning Instruction Platform in Science (CLIPS) was utilized as intervention in Grade 10 lesson particularly in



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Heredity, Inheritance and Variation. The 30-item multiple choice parallel Posttest was administered on July 23, 2021, eight weeks after the implementation of the intervention with the helped of the teachers assigned in the barangay. Since the cases of COVID 19 in the locality was alarming and there was face to face interaction with the teachers assigned in the barangay, IATF and DOH Protocol was strictly followed. Pretest and posttest were checked, scored and interpreted using the Eval Bee App. After tabulating and analyzing the answers and scores, results, discussion, and reflection was written to complete the study.



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## B. Ethical Issues

Letter of intent to conduct the research was sent to the proper school authorities. Letter of consent was sent to parents of participants of the study. Identities of the participants were not revealed to protect their social well-being. Results and participants' responses were reported and presented to further protect their anonymity. All the data gathered were solely used for the purpose of the study.

Memorandum of Agreement was signed by the researcher, Department Head, School Head, the PTA President, and the Barangay Captain.

Authors of books, journals, publications as well as website from the internet which were used as references in the conduct of the study were properly acknowledged and cited.

Other ethical issues prescribed in Research Management Guidelines under DepEd Order No. 16, s. 2017 were followed.



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## VII. Discussion of Results and Reflections

### A. Discussion of Results

This section presents/summarizes the results of the data analysis and discussion of the results.

**Table 1. Pretest and Posttest Scores of the Participants**

Tests	N	$\bar{x}$ (Mean)	SD (Standard Deviation)
Pretest	41	10.341	3.79
Posttest	41	27.000	1.59

The Mean and standard deviation were used to analyze the results of the pretest and posttest of the participants of the study.

Data in the table shows that there is a big increase in the performance level of the participants from their pretest mean score of 10.341 with a standard deviation of 3.79 to their posttest mean score of 27.000 with a standard deviation of 1.59.

This tells us that the participants have low knowledge on the given subject matter “Heredity, Inheritance and Variation” before the implementation of the intervention as shown the pretest mean.

Comparing pretest and posttest mean, there is an increase of 16.70. This indicates that there was a large improvement in the performance of the participant’s learning particularly about Heredity, Inheritance and Variation. This further implies that the use of CLIPS was an effective intervention and supplement in their Learning Activity Sheets or modules.



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This confirms the findings of Alkhaddam (2018) who found out that ICT-based instruction helps to make the learners easier to motivate and actively participate in classroom activities. ICT's a role to help young people be able to arrange, evaluate, and decide on the information that comes to them that can improve their performance. Moreover, Sasota, et.al (2021) supports the findings of the study with their study titled "Will-Skill-tool (WST) model of Technology Integration in Teaching Science and Mathematics" affirming that ICT integration become an essential component of pedagogical to have teacher-student interaction and to optimize learning.

Indeed, ICT integration facilitate not only the delivery of the lessons but also the learning itself.

**Table 2. Test of Difference between the Pretest and Posttest**

Test	n	Mean (x)	Df	t-computed value	P value	Level of Significance	Statistical Inference
Pretest	41	10.341	40	-30.626	2.19634E-29	.05	Significant
Posttest	41	27.00					

Paired Samples t – test was used to determine the significant difference between the pretest and posttest of the participants in the study.

Comparing the critical and computed values of t, it reveals that computed value of  $t$  (30.626) is greater than the critical value (2.021) while the p value is less than the level of significance which is 0.05. This means that the mean score of the participants in their pretest is lower than the mean



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score in their posttest. The probability value of 2.19634E-29 shows that the difference is significant at alpha 0.05.

This recommends that the use of the Computer-Aided Learning Instructions in Science (CLIPS) is effective in improving the performance of the students particularly in Heredity, Inheritance and Variation. Also corroborated by Alderete et al (2017) that a statistically significant difference in average academic achievement was found between the group of students who were beneficiaries of the ICT program applications for instruction and those who were not exposed to it.

In addition, the study conducted by Llapitan, et al (2021) in their research study “An Effective Blended Online Teaching and Learning Strategy during the COVID 19 Pandemic” found out that Discover, Learn, Practice, Collaborate and Assess (DLPCA) was significant to improve academic performance. Asynchronous teaching and learning were achieved through broadcast of pre-recorded lecture videos on YouTube to allow students to study and progress with learning at their own pace. The synchronous part of the teaching was conducted using video conferencing platforms, such as Zoom or Google Meet.

Indeed, integrating technology will improve engagement in activities and increase knowledge retention. Students become more engaged to work and have more fun while learning.



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**Table 3. Test for Effect – Size of the CLIPS in Improving the Performance of the Participants**

	<b>Mean</b>	<b>t-value</b>	<b>Eta Squared value</b>	<b>Description</b>
Pretest	10.341	-30.626	0.959	Large effect
Posttest	27.000			

Eta – squared was used to determine the effect – size of the CLIPS in improving the performance of the students particularly in Heredity, Inheritance and Variation.

The computed Eta – squared of 0.959 indicates a descriptive interpretation of “large effect”. This means that the CLIPS has a great impact in improving the performance level of the students on Heredity Inheritance and Variation and helped to explain hard to understand competencies in science, helped learners to analyze and visualize science particularly biology concepts.

This validates the findings of Khalil (2018) about the effect of employing a virtual learning environment in teaching Science for Grade 6 pupils to evaluate their achievements in a science course. She recommended employing a virtual environment in teaching and learning effective for all grades, along with the use of modern technology.

The result of this study also confirms the findings of Shamim and Raihan (2017) who revealed that integration of ICTs in teaching and learning process makes teaching and learning very easy, interesting, and time saving.



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Teachers strongly agreed that ICTs are essential for enhancing the process of teaching – learning. Further, the tremendous role of ICTs in improving students’ oral performance in and out of class is emphasized (Naciri, 2021).

The study of Avila (2020) titled “The use of Facebook Group in Distance Learning During the Time of COVID 19 Pandemic” revealed that students in virtual classrooms highly improved their academic performance compared to those that were taught merely using the modular approach. Also, students perceived that the use of Facebook Group can be used as supportive tools in learning during the new normal teaching even though they faced challenges in using the said platform in learning.

This implies that the Facebook Group and online learning were very effective platform wherein students, peers and teachers can engage with each other and to address the learner’s need.



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**Table 4. Activity Plan to Sustain the Utilization of the Intervention**

STRATEGIES	PROGRAM	ACTIVITIES	TASK	RESOURCES			Time line
				PHYSICAL	MATERIAL	FINANCIAL	
To sustain and maximize the use of CLIPS in improving the performance of Grade 10 Students in Heredity Inheritance and Variation	Conduct workplan for the sustainability of the research intervention .	Sustain the intervention materials	Sustain the utilization of the intervention materials in Science Classes	Researcher Students	Bond paper and printing	880.00	November 5, 2021 March 25, 2022
			Share and be adopted by other Science teachers in the School	Science teacher	CD/Flashdrive	400.00	
					Facemask	10.00	
					Faceshield	10.00	
		Submit and seek for Quality Assurance in the Division	Make a request letter to seek for Quality Assurance of the intervention in the Division	Researcher Teachers	Bond Paper	200.00	March 28,2022 June 10,2022
					Ink	200.00	
				School Head	Facemask	40.00	
					Faceshield	40.00	
		Recommend the utilization of the intervention in the District/Division	Seek the approval of the proper authorities in the District or the utilization of the materials.	District TWG DRTWG	Folder	10.00	
					Load Allowance	300.00	
				Division Quality Assurance Team	Bond Paper	200.00	
					CD	120.00	
Establish partnership with external stakeholders for the sustainability of the intervention	Solicit some amount to finance the utilization of the research intervention.	Proponent Department Head School Head External Stakeholders	Bond paper	880.00	January 10, 2022-onwards		
			Ink	600.00			
			Folder	50.000			
			CD	150.00			
Total Expenses						4110.00	



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## Summary of Findings

1. There was a great increase in the performance level of the participants as gleaned in the mean Pretest of 10.341 and Posttest of 27.000.

2. There was a significant difference between the pretest and posttest scores at 0.05 level of significance.

3. The Computer-aided Learning Instruction Platform in Science (CLIPS) had a large effect (0.959) in the performance level of the participants in Heredity, Inheritance and Variation as a result of the study.

## Conclusions

In response to the above discussion of findings, the following conclusions are drawn.

As shown in the statistical data, the result revealed that the performance of the participants has improved as gleaned in the mean percentage score of their pretest and posttest. The data also showed significant difference between the pretest and posttest scores of the participants in the topic Heredity, Inheritance and Variation as manifested in the statistical inference. The use of the intervention material had a large effect to the performance of the participants. This implies that the Computer-Aided Learning Instructions Platform in Science (CLIPS) is an effective intervention material to improve the performance of the Grade 10-F students in Heredity, Inheritance and Variation.



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## Recommendations

In light of the previously presented and discussed findings on the results of the study, the following are recommended:

1. Teachers may use Computer-Aided Learning Instruction Platform especially in teaching Science to supplement the given modules and enrich students' learning.
2. Teachers may integrate ICT – based learning materials in their virtual school and home observation timely for this time of pandemic.
3. Teachers may attend free webinars that will enhance their digital literacy in preparing instructional materials that will address the needs of diverse learners to come up with a better learning output.
4. Teachers may adopt the intervention material within the school and form part in the School Improvement Plan to bring forth possible relevant research topics.
5. School head may tap the ICT experts in the school to conduct webinar-workshops to capacitate the teachers with the latest educational software applications to promote collaboration and produce multimedia interactive learning resources in all subjects.
6. Further study on the use of the Facebook Group, Messenger and other Computer-aided Learning Instruction Platforms maybe conducted to validate its effectiveness.
7. Barangay officials may initiate Internet Connectivity in each barangay so that students can access for free.



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## Reflections

The holistic development of every learner depends largely on how effective the teacher is in the delivery of instructions especially in this time of pandemic wherein it necessitates everyone to be techno-savvy. A teacher who adopts technology and equipped with the technical know-how has an edge for better teaching performance. Being adept to technological advances provides wider horizons and more discoveries as to when and how these applications and platforms improve learners' knowledge, skills, attitudes and values.

Teachers can never stop nor avoid change. It may happen expectedly or unexpectedly. Just recently, a dramatic change had occurred in education ushered by the pandemic COVID-19. It made the usual face-to-face classes impossible to take place in schools. Yet, the education of the learners must continue amidst any hurdle they face. But how can teachers educate learners without meeting them face-to-face? This is a big challenge on the part of every teacher, a teacher must be ready to take risks and sacrifice for his/her learners. Taking the risks of navigating new application, platform, or activity for the welfare of learners is indeed evident in today's new normal of teaching.

"IF YOU ARE NOT WILLING TO LEARN, NO ONE CAN HELP YOU. IF YOU ARE DETERMINED TO LEARN, NO ONE CAN STOP YOU"

This statement has been her guiding force in her research journey. As a teacher, she knows that conducting action researchers is one of the important factors in teachers' professional development and engaging in the action research process can help a teacher understand what is happening in his/her classroom and identify changes that improve teaching and learning.



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She doesn't have any idea on how to make action research although she has friends and co-teachers who are very much inclined in doing such. If her memory serves her right, her perception about conducting classroom action research was intrinsically hard and very challenging because doing research requires great mental effort.

Not until Claveria East Public Schools District Supervisor Dr. Ralph Bona, a research advocate, encouraged all teachers to do action research because according to him, research plays an important role in solving teachers' problem in the classroom and through classroom action research, teachers could apply new methods and propose an innovative learning to improve the teaching and learning process. With his Project SMARTER (Strengthening a Meaningful Action Research for Teachers by Enhancing and Reviving their Skills and Knowledge), she was inspired to make her own action research. She must admit it was not that easy to make one because there were a lot of things to be considered in crafting research.

As thrilling and fascinating as the research was, there were a few challenges with which she, as a greenhorn in the field of research, struggled. One of these was thinking of an effective intervention to address the problem in her research. In fact, she had sleepless nights just to come up with a good and effective intervention. She even sought help from her mentors for their ideas and came up with a great concept on her own. Thus, she was able to craft her first action research. When she presented her Action Research Proposal, she didn't expect that the members of the Division Research Technical Working Group would be able to appreciate it. She really couldn't



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explain her emotions that time, she was overwhelmed with joy because finally all my hard work paid off. She thought her research journey had already ended there but that was only the start because she was chosen to represent Claveria East District in the 2021 Division Planning and Research Conference and one of the recipients of the Basic Education Research Fund 7.0. In fact, when the District Supervisor informed her about it, she jumped for joy because this is just a once in a lifetime opportunity for her. Who would have thought that a newbie in the field of research would make it to the 2021 Division Planning and Research Conference and be adjudged as second placer from among the research enthusiasts in the division. She was also blessed to present her action research proposal during the First Regional Planning Conference -Oral Presentation and adjudged as the third placer. Indeed, these experiences in the field of research will always be one of her biggest achievements in her teaching career. In her life's journey as a researcher, she has learned three crucial lessons that she will employ throughout her life: being passionate, positive, and persistent. She believes that doing what you love and feeling passionate with what you are doing will make you become successful. Back up your passion with attributes that will help you get further will make a big difference. Apart from your passion, you also need a positive attitude to help you go through the difficult times in your research journey. Strive to keep a positive state of mind by focusing on your strengths and use them as catalyst for achieving your goals. In addition to passion and a positive attitude, you also need a tremendous amount of persistence to keep you going. Since research can be a hard and challenging journey, persistence becomes a key



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factor for you to go on and not give up as Benjamin Franklin has already said, “Energy and persistence conquer all things”.

Hence, this research study is a consolidated effort and success not only the proponent but most especially to the participants, the parents, other teachers, the school administrators, and other external stakeholders who contributed much for the realization and completion of this study. It involves the series of roadblocks, milestones, strategies, and actions to make this research a reality. This accomplished masterpiece is a great manifestation of hard work and perseverance; from the identifying of the needs of the learners, formulation of research title, preparation of intervention materials, preparation of proposal, implementation, and gathering and analyzing data. But despite of these insurmountable odds, there is a feeling of fulfillment and achievement because despite of the challenge of the COVID 19, education was still delivered and produced better learning output.



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## VIII. Action Plan

STRATEGIES	PROGRAM	ACTIVITIES	TASK	RESOURCES			Time line
				PHYSICAL	MATERIAL	FINANCIAL	
Improving the performance of Grade 10 Students in Heredity Inheritance and Variation	Conduct an Advocacy Plan for the Dissemination of Research Findings and Sustainability of the Research Intervention	Dissemination of Research Findings	Writing of Request letter to authorities for dissemination of research findings in the School/District /Division via PTC and INSET .	Proponent	Load for Internet	400.00	November 5, 2021-onwards
				SRC	Bondpaper	200.00	
				DRC	Ink	900.00	
				Division TWG	Board paper	100.00	
				Department Head	Flashdrive	500.00	
				School Head			
				Teachers			
				External stakeholders			
				Civic and Non-civic organizations			
		Design flyers to be distributed in different agencies or other civic organizations					
		Conduct dissemination using social media like Facebook/ Group chat					
		Attend and present in Different Research Forum					
		Publish in research journals/educational magazines with the approval of SDO Cagayan					
		Sustain the utilization of the intervention	Sustain the intervention through partnership with external stakeholders	Proponent	Bond paper	200.00	November 5, 2021-Onwards
Department Head	Ink			600.00			
School Head	Folder			50.000			
External Stakeholders	CD			150.00			
Total Expenses						3100.00	



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## X. Financial Report

Activities	Item Description/Particulars	Unit	QTY	Unit Cost	Total Amount
Research Conceptualization	Printing Fee	Page	70	2.00	140.00
	Folder	Piece	2	12.00	24.00
	Face shield	Piece	2	10.00	20.00
	Face Mask	Pack	1	100.00	100.00
	Alcohol	Bottle 250ml	2	40.00	80.00
Research Approval	Printing Fee	Page	80	2.00	160.00
	Folder	Piece	2	12.00	24.00
	Fastener	Piece	4	2.00	8.00
Research Implementation	Reproduction Fee (Consent letter)	Page	45	1.00	45.00
	Reproduction Fee of Test Questions and Answer sheets	Page	82	3.00	240.00
	Face shield	Piece	8	15.00	120.00
	Face mask	Pack	1	100.00	100.00
	Alcohol	Bottle 250ml	1	40.00	40.00
	Load Allowance			1000.00	1000.00
Research Finalization	Bond Paper	Ream	2	200.00	400.00
	Bookbinding	Piece	6	300.00	1800.00
	Ink	bottles	4	300.00	1,200.00
	Face shield	Piece	1	15.00	15.00
	Face mask	Piece	8	5.00	40.00
	Alcohol	Bottle 250ml	1	40.00	40.00
Research Dissemination and Utilization	Bond Paper	Box	1	1000.00	1000.00
	Ink	Set	1	900.00	900.00
	Board paper	Pack	4	35.00	140.00
	Face mask	Piece	10	5.00	50.00
	Alcohol	Bottle 250ml	1	40.00	40.00
	Internet Allowance			1000.00	1000.00
Grand Total					<b>8,826.00</b>



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# Individual Pretest & Posttest Result

Student Number	PRETEST	POSTTEST
1	14	29
2	11	28
3	12	28
4	16	30
5	12	26
6	10	26
7	9	26
8	11	26
9	10	27
10	8	26
11	10	26
12	11	26
13	20	30
14	5	23
15	14	25
16	7	25
17	17	29
18	12	26
19	10	27
20	8	24
21	19	28
22	15	26
23	5	28
24	7	29
25	11	24
26	18	29
27	5	27
28	9	25
29	10	27
30	9	28
31	10	28
32	8	27
33	7	27
34	7	27
35	5	27
36	8	27
37	12	28
38	8	28
39	8	27
40	8	29
41	8	28
<b>MEAN</b>	<b>10.34146341</b>	<b>27.00</b>



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