IJLRES - International Journal on Language, Research and Education Studies
ISSN: 2580-6777 (p); 2580-6785 (e)
DOI: 10.30575/2017/IJLRES-2018050803
Vol. 2, No. 2, 2018
Page: 176 - 194

THE EFFECTS OF REALITY PEDAGOGY ON THE ACADEMIC PERFORMANCE AND MOTIVATION TO LEARN OF GRADE 7 PHYSICS STUDENTS

Iris April L. Ramirez
Bukidnon State University of Malaybalay City, Bukidnon, Philippines
irisaprilramirez@gmail.com
orcid.org/0000-0002-8616-4510

Abstract. *The study investigated the effects of Reality Pedagogy on the academic performance and motivation to learn of Grade 7 Physics students. It was conducted at Bukidnon State University – Secondary School Laboratory for the school year 2015-2016. A quasi-experimental design was utilized in the study. Developed lessons about Motion in One Dimension, Waves and Sound as well as a 30-item paper and pencil performance test were assessed and evaluated by panel of experts with their respective specialized field. A Physics Motivation Questionnaire adopted from Glynn was modified and also used. The data gathered used statistical technique such as mean and standard deviation. Also, the one-way analysis of covariance (ANCOVA) and t-test both at 0.05 level of significance were employed. Finding revealed that the posttest of the experimental group shows very satisfactory result compared with the control group which was only satisfactory. Further, there was no significant difference in the academic performance between the Grade 7 students taught by Reality Pedagogy and of the students not using Reality Pedagogy. However, there is an improvement in the academic performance of the two groups regardless with or without the intervention. The study showed that both the control and the experimental groups were moderately motivated to learn physics.*

Keywords: Reality Pedagogy, Motivation, Physics, Academic Performance, Education

INTRODUCTION

Reality Pedagogy is an approach to teaching and learning that focuses on teachers gaining an understanding of student realities, and then using this information as the starting point for instruction. It begins with the fundamental premise that students are the experts on how to teach, and students are the experts on content. Reality pedagogues/teachers believe that, for teaching and learning to happen, there has to be an exchange of expertise between students and teacher. For this exchange to happen, teachers need a set of tools called the "5 C's" to gain insight into student realities, and allow students to express their true selves in the classroom.

To describe the 5 C's in a sentence or two would not do justice to Emdin's work. Clearly the following oversimplifies the process: Urban youth are empowered and

DOI: 10.30575/2017/IJLRES-2018050803

engaged by: (1) being provided with a mechanism to have a say in the way the class is run (cogenerative dialogues); (2) having an opportunity to assume the role of teacher (coteaching); (3) being given responsibility for specific classroom tasks that benefit the group (cosmopolitanism); (4) being taught by a teacher who utilizes artifacts familiar to students outside the classroom to facilitate learning within the classroom (context), and finally, (5) what educators often focus on first – content[1].

Physics is basically a study to find the answers to the questions of 'why' and 'how' natural phenomena in daily life occur. Most students consider Physics a difficult subject, mainly due to the learning processes involved in understanding Physics, which require the learners to deal with different types of representations, such as formulas, calculations, graphics representations, and also a conceptual understanding at an abstract level [2].

A motivated student will take care of his education, has a positive thinking and is always eager to learn[3]. Teaching would be meaningless if the student is not motivated, even when the capacity and capability of teachers are high[4]. Self-motivation is essential to generate the potential for excellence and is inter-related with the spirit and desire to succeed[5], as well as having a strong impact on one's success and achievement[6].

Research has shown that students will study and learn physics better and, moreover, choose physics courses in upper secondary school if they are interested in it. Modern interest research Hidi, Renninger, & Krapp has also shown that interest based motivation to learn has positive effects both on studying processes and on the quantity

[1] Emdin, C. (2011). Droppin' science and dropping science: African American males and urban science education. *Journal of African American Males in Education, 2,* 66-80.

[2] Sidin, R. (2004). Pembudayaan Sains dan Teknologi: Satu Cadangan Piawai [Socialization of science and technology: a standard proposal]. Jurnal Pendidikan (UKM), 47-63. Angell, C., Guttersrud, Ø., Henriksen, E. K., and Isnes, A. (2004). Physics: Frightful, but fun, Pupils' and teachers' views of Physics and Physics teaching [Electronic version]. Science Education, 88, 683-706.

[3] Ross C. M. (1999). The Relationship among Academic Achievement Motivation, Motivation Orientation, and Ability-Achievement Differences in Reading. Phd. University of Alabama, USA.

[4] Walberg, H. J. (1988). Creativity as learning. In R. J. Sternberg (Ed.), The nature of creativity (pp. 340-361). New York: Cambridge University Press.

[5] Petri H. L. (1986). Motivation Theory and Research, 2nd edition. USA: Wadsworth Publication.

[6] Singh, K., Granville, M., and Dika, S. (2002). Mathematics and science achievement: Effects of motivation, interest and academic engagements. The Journal of Educational Research, 95(6), 323-332.

and quality of learning outcomes[7]. Thus, because students' interest in physics learning is so important to future involvement in the subject, it is useful to know how physics teaching should be developed and learning materials designed to be more interesting for students.

It has been observed that the instructional model of the teacher and the textbook are the primary sources of knowledge. This is conveyed through lecturing, discussion, and reading which has been proven astonishingly persistent. These result to the poor retention of the students about the concepts of physics.

In an unstructured interview, majority of the students viewed physics as difficult, irrelevant and boring. Difficult as it involves mathematics and it is too abstract. Irrelevant since they cannot easily comprehend its concept and how it is applied to a real life situation. And boring since it is discussed with tireless lecture. Where, in fact, Physics aims to help learners to gain a functional understanding of scientific concepts and principles linked with real-life situations, and acquire scientific skills, attitudes, and values necessary to analyze and solve day to day problems.

With the implementation of the K to 12, it is encouraged not to solely rely on textbooks. Rather, varied hands-on, minds-on, and hearts-on activities will be used to develop students' interest and let them become active learners. These concepts and skills are integrated rather than discipline-based, stressing the connections across science topics and other disciplines as well as applications of concepts and thinking skills to real life.

With this new curriculum, learning must be an active process that requires a change in the learner. This is achieved through the activities the learner engages in, including the consequences of those activities, and through reflection and these could be achieved with Reality Pedagogy. It is generally a process of digging deeper and deeper into big ideas, rather than presenting a breadth of coverage. Students learn how to learn, it is a knowledge-building classroom where students seek to create new knowledge. As students pursue questions, they derive new and more complex questions to be investigated. Building useful knowledge structures requires effortful and purposeful activity over an extended period.

[7] Hidi, S., Renninger, K.A. & Krapp, A. (2004). Motivating the academically unmotivated: A critical issue for the 21st century. *Review of Educational Research, 70(2), 151-179.*

With these, the researcher would like to conduct a study whether the academic performance of physics students will be improved with the Reality Pedagogy model.

METHODOLOGY

This study investigated the effects of Reality Pedagogy on the academic performance of physics students. A pretest was initially given in order to determine initial group equivalence and equality. In the test of effects of Reality Pedagogy, a quasi-experimental design was used to assess its effectiveness among the Grade 7 Physics students of Bukidnon State University – Secondary School Laboratory. The design used for the study was a non-equivalence pretest-posttest quasi-experimental design. A physics motivation questionnaire was also used by the grade 7 students. It was accomplished by both the experimental and the control group.

The two intact classes involved in the study were made up of 61 and 62 students per class, experimental and control group, respectively. However, only 30 students from each group were selected in the data gathering. These students were paired based from grades in Science from the second grading. This was to ensure control over several possible intervening variables in the study

A design and development of lesson was done by the researcher. This includes the (1) Designing/Planning and Development Stage; and (2) Validation and Revision Stage. In the development of the lessons several technical aspects were evaluated by three panel of experts. The experts were given an evaluation form individually which contains the following criteria: Content and content accuracy, Clarity and Appropriateness. The comments gathered from the experts were used as basis in refining the material.

The research instruments used in this study were the 30-item multiple choice researcher-made academic performance test and the physics motivation questionnaire was adopted from Glynn and modified according to the specific discipline for Grade 7 Physics students[8].

The researcher followed the proper protocol during the data gathering. First, permission from the University President of Bukidnon State University was asked. Upon

[8] Glynn, S. M. (2011). Science Motivation Questionnaire: Construct validation with nonscience majors. Journal of Research in Science Teaching, 46, 127–146.

the approval, this was forwarded to the office of the Dean of College of Education. Then, proceeded to the Principal's Office of Secondary School Laboratory where the study was conducted.

The conduct of the lesson followed with the same topics to both groups. However, the experimental group used the 5Cs of Reality Pedagogy during the presentation of the lesson. On the hand, the control group used the Conventional Teaching Approach which was the lecture discussion and demonstration method.

After all the topics were presented, the posttest was given to both the experimental and the control groups. This was to assess the academic performance gains of the students. Both pretest and posttest were checked and the results were tabulated for analysis.

Finally, the Physics Motivation Questionnaire was also distributed and accomplished by both the experimental and the control group. The results were also tabulated for analysis. Assurances were also given as to the confidentiality of their responses as well as of their respective identification.

The present research used statistical techniques such as the mean and standard deviation to answer the problems no. 1 and 2. These were the academic performance level on Physics of the students taught using Reality Pedagogy and students not using Reality Pedagogy as well as the Motivation to Learn Physics of both the experimental and the control group.

The one-way analysis of covariance (ANCOVA) at 0.05 level of significance was used for problem no. 3. This was to test the significant difference in the academic performance in Physics between the Grade 7 students taught by Reality Pedagogy and the students not using Reality Pedagogy. Also, to test the significant difference in the motivation to learn Physics of the students in the control and the experimental group, t-test at 0.05 level of significance was used.

FINDINGS AND DISCUSSION

Academic Performance in Physics of the Students Taught using Reality Pedagogy and Students Not Using Reality Pedagogy

The mean scores and standard deviations obtained by the two study groups – the experimental and the control groups were described and presented in Table 1. The following table shows that the two groups were almost at par with regards to their pretest and posttest results.

Table 1 Pretest – Posttest Mean Scores of Students Taught with the Reality Pedagogy and Students taught without the Reality Pedagogy

Group		N	$\bar{x}$	s.d.	QS
Control	Pretest	30	9.85	2.48	Fairly Satisfactory
	Posttest		18.33	4.12	Satisfactory
Experimental	Pretest	30	10.30	2.89	Fairly Satisfactory
	Posttest		19.52	3.69	Very Satisfactory

The posttest of the experimental group was very satisfactory compared with that of the control group which was only satisfactory. This shows that the students in the experimental group had become more competent after the experiment.

This results could be attributed, as Emdin explains that Reality Pedagogy allow students to become invested in the daily operation of the classroom[9]. This in turn, allows the teacher to be more effective in the delivery of the content. According to Taher, the tools of reality pedagogy allow students to further develop self-efficacy in science and create a venue for social acceptance and encouragement from peers. Full participation and engagement in cogenerative dialogue sessions and coteaching activities demonstrated the most significant and effective impact of the two tools of reality pedagogy in developing self-efficacy for the students in the study[10].

The posttest mean scores of the participants in both the experimental and the control groups were greatly widespread as compared with the mean scores attained by the same groups in the pretest results. It can be presumed that the students in both groups had managed to achieve scores which were outliers (extremely low or extremely high numbers in the data set) at the passing rate after being implemented with the Reality Pedagogy and Conventional Teaching Approach, respectively. It could also be inferred that the participants in the experimental group had a little improvement on their

[9] Emdin, C. (2011). Droppin' science and dropping science: African American males and urban science education. *Journal of African American Males in Education, 2,* 66-80.

[10] Taher, T. (2012). Exploring the Impact of the Implementation of Reality Pedagogy: Self-efficacy, Social Capital, and Distributed Cognition (Doctoral thesis, Colombia University). Retrieved from http://academiccommons.columbia.edu/catalog/ac%3A174519

achievement test as compared with the control group. This could be due to the integration of the Reality Pedagogy.

Generally, the experimental group got higher marks during their class presentation of outputs as compared with the control group. It could be attributed that the students in the experimental group were more comfortable working with their peers. They were able to simply ask questions and were able to perform the activities with ease.

Further, the students enjoyed their activity, especially the outdoor ones. During the presentation of their output, it was established that all members should be able to present their different outputs. According to them, it was very challenging as this will affect their group grade. The whole class listened attentively as questions were also being raised from their classmates. This maximized the learning of the students.

Comparison of the Academic Performance of the Experimental Group and the Control Group

To determine whether there is significant difference in the academic performance between the students taught with Reality Pedagogy model and those students taught without the Reality Pedagogy model, one-way ANCOVA was used at 0.05 level of significance. Table 3 shows the summary of the results of the said test.

Table 2 One-way ANCOVA Comparing the Results of Students' Performance When Classified According to Type of Group with Pretest as Covariate

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	133.497	2	66.748	4.527	.015
Group	23.876	1	23.876	1.619	.208
Pretest	91.830	1	91.830	6.228	.015
Error	840.503	57	14.746		
Total	22634.000	60			

The results show that there was no statistically significant difference in the academic performance between the Grade 7 Physics students taught using the Reality Pedagogy and those students taught using the Conventional Teaching Method, since the p-value is (0.208) > 0.05. However, there was an improvement in the academic performance of both groups of student's, since the p-value (0.015) < 0.05.

Hence, the results established the statement and provided enough statistical support not to reject the null hypothesis of the study. Based on the findings, the null hypothesis which states that there is no significant difference in the academic performance between Grade 7 Physics students taught using the Reality Pedagogy and those taught using the Conventional Teaching Approach, is not rejected.

The poor performance was especially observed in the field of Science and Mathematics. This led the national government to finally enact reforms in our educational system leading to the introduction of the new curriculum, the "Enhanced Basic Education Curriculum" which is popularly known as the K-12 Curriculum.

The problems with academic performance made educational reforms that transformed schools from the idealistic teacher-centered classes to student-centered ones. Activity-based lessons became popular especially in the field of Science. Students were empowered and are given the chance to explore endless possibilities. Along with these change in perspective, the focus on knowledge gained shifted to skill development.

Research Wright, Standen, & Patel disclosed that despite the greatest efforts to close such gaps, academic achievement gaps have been most prominent in the subjects of mathematics and science. As a result, with our new curriculum, administrators and teachers embrace a significant adjustment which calls for our attention to address the particular needs of this group of students[11].

Previous researches have shown that Filipino teachers' classroom practices tend to be more traditional De Mesa & De Guzman,[12] and that Filipino teacher tend to believe that learning is a simple and unsophisticated process[13]. The aforementioned findings seem to suggest that Filipino teachers and students may be more inclined to adopt traditional conceptions of teaching and learning.

The implementation of Reality Pedagogy can be thought of somewhat like a cyclic process where cogen facilitates a non-threatening and comfortable environment that encourages voice[14]. This is further supported by coteaching[15]. In practicing

---

[11] Wright C., Standen, P., & Patel, T. (2010). *Black youth matters: Transitions jrom school to success.* New York: Routledge

[12] De Mesa, A. P., & De Guzman, A. B. (2006). Portrait of Filipino teachers' classroom practices: traditional or constructivist? *Educational Research on Policy and Practice, 5*, 235-253.

[13] Bernardo (2008). Exploring epistemological beliefs of bilingual Filipino preservice teachers in the Filipino and English Languages. *The Journal of Psychology, 142*(2), 193-208.

[14] Tobin, K. (2006). Learning to teach through coteaching and cogenerative dialogue. *Teaching Education, 17*(2), 133-142.

[15] Roth, W. M., & Tobin, K. (2005). *Teaching together, learning together.* New York: Peter Lang.

coteaching, students apply their voice and establish their position as valid members of the classroom, which in turn encourages their agency.

According to these students, the mere act of participating in a classroom space (e.g., answering questions when asked, offering opinions, presenting group work, or asking questions) has the potential to expand an awareness to self, increase the capacity for tolerating dissent, and broaden the ability to support others while generating a more practical sense of community and safety.

It was observed that students who were engaged in learning activities show sustained behavioral involvement in learning accompanied by positive emotional tone. They perform tasks at the frame of their competencies, initiate action when given the opportunity, and exert intense effort and concentration in the implementation of learning tasks. They show generally positive emotions during ongoing action, including enthusiasm, optimism, curiosity, and interest.

A study conducted by Borges suggests that conducting Reality Pedagogy aided in bridging the student-teacher relationship in order to support a teacher that had decided to leave the teaching profession due to the cultural misalignments between her and her students[16]. As a consequence the teacher remained in the profession and students became more connected to their teacher and demonstrated science achievement.

Physics learning content in junior high school classrooms would not only be related to the textbooks and materials used in classrooms, but would also be embodied in the knowledge structure, the ways the knowledge was presented, as well as being strongly associated with classroom activities and classroom teaching strategies.

The positive response of both groups after the study means that the students learned to appreciate and love physics. This can be credited to the fact that since constructivist approach-based strategy give the students maximum opportunities to apply their own decision, they were more motivated in performing the activities that served to focus and stimulated their attention towards the lesson; hence a positive attitude that favors learning is nurtured.

[16] Borges, S. (2009). A Longitudinal Ethnographic Study: Bridging the Cultural Gap Between Urban High School Students and their Culturally Diverse Teacher Through Reality Pedagogy. Retrieved from http://www.libraries.psu.edu/content/dam/psul/up/lls/documents/APA_Quick_Citation_Guide.pdf

Likewise, this also means that traditional method is also capable of improving the student's motivation to learn in physics and should not be discarded as one of the approaches employed to be employed in physics teaching.

Moreover, the improvement in the academic performance of both groups of student's can be attributed to the fact that the students were highly motivated to play an active part in their acquisition of knowledge giving them an active role in their own learning which made them perform better academically after the study which is basically the main goal of the new curriculum.

Motivation to Learn Physics of Students in the Control and Experimental Group

The data in Table 3 show the motivation to learn of Physics students in control and experimental group respectively. It is consist of 25 items, with 5 items representing 5 dimensions. The 5 dimensions include: Intrinsic Motivation, Self-Efficacy, Self-Determination, Grade Motivation, and Career Motivation. The overall mean reveals that both groups were moderately motivated to learn physics. The overall standard deviation shows that there is homogeneity in the distribution of the responses.

Table 3 Level of Motivation to Learn Physics of Control and Experimental Group

Motivation	Control			Experimental		
Dimension	$\bar{x}$	s.d.	QS	$\bar{x}$	s.d.	QS
Intrinsic	3.65	0.30	Highly Motivated	3.37	0.27	Moderately Motivated
Self -Efficacy	3.05	0.29	Moderately Motivated	3.31	0.15	Moderately Motivated
Self - Determination	3.24	0.33	Moderately Motivated	3.09	0.24	Moderately Motivated
Grade	3.77	0.45	Highly Motivated	3.95	0.51	Highly Motivated
Career	2.90	0.29	Moderately Motivated	3.27	0.24	Moderately Motivated
Overall	3.32	0.58	Moderately Motivated	3.40	0.47	Moderately Motivated

Physics, as a subject, is an integral part of science. The problem of the attractiveness of Physics as a subject is very wide, it is analyzed from different aspects:

the individualization of learning[17], collaborative learning[18], formation of the concepts of Physics[19].

The first dimension of motivation is the intrinsic, the table shows that the control group was highly motivated; while, the experimental group was only moderately motivated. However, both groups had homogeneity in the distribution of their responses. It could be inferred that the control group enjoyed physics more compared with the experimental group. The control group also viewed physics subject as relevant in their lives. They enjoyed learning physics.

A substantial amount of research has explored diverse determinants of students' motivation. This revealed, among other things, that autonomy support has an impact on students' intrinsic motivation[20]. It was observed form both groups that this type of goal orientation corresponds to the intrinsic motivation that derives from curiosity of the need for knowledge and information, and the need for mastery, competence and efficiency in solving challenging task especially in Physics.

Another dimension of motivation to learn Physics is the self-efficiency. From the table, both groups were moderately motivated. Also, there was uniformity of their responses. The students were confident that they could do well on their physics tests and projects, as well as laboratory report. They also believed that they could master Physics knowledge and skills.

Mastery experience is regarded as the most effective source fostering students' self-efficacy: the experience of success in performing a task is likely to promote self-efficacy related to that task (Britner and Pajares, 2006). Studies have shown that self-efficacy, which is defined as the beliefs about ones' capabilities to accomplish a given task (Bandura, 1994), is a major predictor of students' academic achievement, career interest and course-taking (for example, Britner and Pajares, 2006).

---

[17] Zacharia, S.J. & Olympiou, B.J. (2010). Learning environment, attitudes and achievement among middle-school science students using inquiry-based laboratory activities. *Research in Science Education, 38*, 21-341.

[18] Nedic, Z., Machotka, J. and Nafalsk, A. (2003). *Remote laboratories versus virtual and real laboratories.* November 58, 33rd ASEE/IEEE Frontiers in Education Conference. Downloaded from http://www.icee.usm.edu/ICEE/conferences/FIEC2003/papers/1077.pdf

[19] Bajpai, M. (2013). Developing Concepts in Physics Through Virtual Lab Experiment: An Effectiveness Study. *Te c h n o L E A R N: An International Journal of Educational Technology. 3 (1),* 43-50.

[20] Reeve, J., Bolt, E., & Cai, Y. (1999). Autonomy-supportive teachers: How they teach and motivate students. *Journal of Educational Psychology, 91,* 537–548.

The third dimension is self-determination. The data show that both groups were moderately motivated. It could be grasped that students viewed Physics subject as important as other subject. They were giving enough effort in learning the subject. They also spent enough time in studying and preparing during tests.

Self-determination and relevance to personal goals are part of the self-determination continuum. Ryan and Deci referred to self-determination as a student's freedom to have some choice and control of their learning[21]. The goal setting theory is believed to be consistent with the cognitive revolution. It emphasizes the significant relationship between goals and performance[22].

Table 4 further shows the grade motivation of Physics students. It displayed that both groups were highly motivated. From the data, it can be construed that students were really concerned with their Physics grade. They were aware of their responsibility as a student. They needed to perform well. The result also shows that scoring high on Physics test mattered to them.

Many researchers were interested in the relationship between students' willingness and capability, and the response for self-regulation in their academic achievement [23]. Their research disclosed that learning self-regulatory skills can lead to greater academic achievement and an increased sense of self-efficacy [24].

Students who employ this approach are motivated by getting high grades or winning prizes, whether or not the content is interesting. The achieving motive is based on competition and egoenhancement. These students' strategy is to maximize the chance of obtaining high scores and they behave as model students[25].

---

[21] Deci, E. L., Koestner, R., & Ryan, R. M. (2002). Extrinsic and intrinsic motivation in education: Reconsidered once again. *Review of Educational Research*. 71(1): 1-27.

[22] Lunenburg, F. C. (2011). Goal-setting theory of motivation. *International Journal of Management, Business and Administration*. 15(1): 1-6.

[23] Zimmerman, B. J., & Risemberg, R. (1997). Self-regulatory dimensions of academic learning and motivation. In G. D. Phye (Ed.), *Handbook of academic learning: Construction of knowledge*. San Diego, CA: Academic Press. Zimmerman, B. J., Bonner, S., & Kovach, R. (1996). *Developing self-regulated learners: Beyond achievement to self-efficacy*. Washington DC: American Psychological Association.

[24] Dembo, M. H., & Eaton, M. J. (2000). Self-regulation of academic learning in middle-level schools. *The Elementary School Journal, 100*(5), 473 - 490.

[25] Biggs, J. (1987). *Student approaches to learning and studying.* Paper presented at the Australian Council for Educational Research, Melbourne.

The last dimension shown in Table 3 is the career motivation. Both control and experimental groups showed that students were moderately motivated. It appears that students were somehow thinking about their career advantage and how physics could help them in getting their dream job.

Today, the concern with development of student interest in Physics stems basically from two major considerations. First, education in Physics is a basic component of the general education needed by all individuals on today's world, where Physics plays a major role in influencing present societies and shaping future ones. Second, Manpower demands in technological development are such that science teaching should stimulate student interests and eventually direct as many students as possible to choose career in science.

The motivation of students to learn a particular subject area is important. The motivation of students to learn Physics, as a terminal science course in the Basic Education Curriculum of the Philippines is a significant factor in making students decide on the career path that they will be taking in the collegiate level. Leading students to particular fields is essential in helping students decide what they really want to pursue in higher degrees. Their ability choose well at an early stage may determine their success in their collegiate level and in the profession that they will engage in.

Comparison of the Motivation to Learn Physics of the Experimental Group and the Control Group

The data on Table 4 shows the comparison of motivation to learn of both control and experimental groups. From the information gathered, since p-value (0.578) > 0.05, there is no significant difference in the motivation to learn Physics between the students in the control and those in the experimental group.

Table 4 Comparison of the Motivation to Learn Physics of the Control Group and the Experimental Group

Group	N	$\bar{x}$	s.d.	t-value	P-value
Control	30	3.32	0.58	0.559	0.578
Experimental	30	3.40	0.47		

Based on social cognitive theory and previous findings, Glynn revised the Science Motivation Questionnaire to improve its construct validity and evaluate it with science majors and nonscience majors in core-curriculum college courses[26]. The present findings shows that the revised questionnaire is valid and provides a profile of the components that contribute to a student's motivation. Researchers, instructors, and academic advisors can track changes in a student's profile during a course or a series of courses.

In physics, motivation is very important for effective learning. There are many theories and techniques of motivation involved with the teaching and learning process. A very important notion is that motivation in education is based on teachers' ability to challenge and encourage students to take on an active role in their learning [27].

In an unstructured interview with some group leaders of both groups, it was mentioned that the intrinsic motivation in these students was caused by their interest in getting good grades rather than mastering a topic of the subject. It also emerged from their belief of having the skill that makes them capable to be effective in achieving their goals as well as their sense of autonomy towards their educational results and factors influencing them.

Woolfolk concludes that student motivation to learn is both a trait and a state. It involves approaching academic work to get the best results from it and engaging actively in the process[28]. In the classroom, teachers should set appropriate tasks that affect motivation. Tasks have attainment and intrinsic values for students. Students often avoid risky and ambiguous tasks. Strategies that encourage motivation to learn should improve students' confidence and reduce their fear of failure.

The learning motives of students, in the order of prevalence, are: "surface" motives of landing a good job, earning money, and passing a course; encouragement received from loved ones; curiosity and excitement about learning; and, achievement and competition. The learning strategies of students, in the order of prevalence in the studied sample, are: rote learning and memorizing, deeper comprehension and application, and organization of time and effort[29].

---

[26] Glynn, S. M. (2011). Science Motivation Questionnaire: Construct validation with nonscience majors. Journal of Research in Science Teaching, 46, 127–146.

[27] Ferguson, E. D. (2000). *Motivation: A biosocial and cognitive integration of motivation and emotion*. New York: Oxford University Press, Inc.

[28] Woolfolk, A. E. (2001). *Educational psychology* (8th ed.). Boston, MA: Allyn & Bacon.

[29] Liem, A. D., Nair, E., Bernardo, A. B. I., & Prasetya, P. H. (2008). In the students' own words: Etic and emic conceptual analyses of why and how students learn. In O.S. Tan, D. M.

According to Zulueta and Guimbatan using the constructivists' method of instruction in science gives opportunities to students to manipulate concrete objects; participate actively; develop scientific competencies and motivation[30]. Science involves the learning of highly complex and abstract subject matter. By allowing the students to have "hands-on experience", they understand and use scientific principles learned from the opportunity to manipulate actual objects and materials.

The recognition of the diversity of 21st century learners is crucial in pushing for educational reforms. Understanding the students of today will help educators better guide them in the career that will define the quality of citizens that the students will become in the coming future. Their motivation to study Science and to pursue research are critical in nation building. Educators play a significant role in defining students of today and identifying their motivational needs in the fields of Science. Their needs and interest towards the conduct of research to generate new knowledge and to find solutions to current difficulties are also essential needs for national reforms.

The Basic Education Curriculum (BEC) of the Philippines is on its way to complete reformation. The Enhanced Basic Education Curriculum of the Philippines dubbed as "K12 curriculum" is already on its fourth year of implementation in the public schools. Both curricula aims to lead students towards productive citizens of the nation. One leading conception towards productivity in the work field and even early in school is motivation.

The intent of the study was to test the effects of Reality Pedagogy on the academic performance and motivation to learn physics of the students. Generally, the finding showed that there was no statistically significant difference in the academic performance between the Grade 7 students taught using Reality Pedagogy and those taught using the Conventional Teaching Method. However, there was an improvement in the academic performance in both groups of students. Also, there was no significant difference in the motivation to learn Physics between the students in the control group and those in the experimental group.

McInerney, A. D. Liem, & A.-G. Tan (Eds.). *What the West can learn from the East: Asian perspectives on the psychology of learning and motivation* (pp. 137-167). Greenwich, CT: Information Age Press.

[30] Zulueta, F. & Guimbatan, K. (2002). *Teaching strategies and educational alternatives*. Manila,Philippines: Academic Publishing Corporation.

CONCLUSION

From the results of the study, the following findings were gathered:

1. The posttest of the experimental group shows very satisfactory academic performance level result compared with the control group, which was satisfactory academic performance level.
2. Statistically, there was no significant difference in the academic performance between the Grade 7 students taught using Reality Pedagogy and the students not using Reality Pedagogy.
3. Both the control group and the experimental group were moderately motivated to learn physics.
4. There was no statistically significant difference in the motivation to learn physics between the students in the control and those in the experimental group.

Based from the aforementioned results and findings of the study, the following conclusions were drawn:

1. The feedback of the panel of experts can be used as bases in the revision of the lessons with the guidance of a systematic set of criteria.
2. Although there was no statistical significant difference in the academic performance between the experimental group and the control group, still there was an improvement in the academic performance of the two groups. Likewise, the developed lessons integrated with the Reality Pedagogy can be used by the Secondary School Physics teachers and students in the teaching and learning Physics.
3. Since the students have favorable motivation towards physics, Reality Pedagogy could motivate the students to learn and to be engaged in learning physics.

Based on findings, the following statements are recommended:

1. Science teachers are generally encouraged to integrate the Reality Pedagogy in teaching Physics to help improve learners' academic performance as well as their motivation to learn physics.
2. Since the said study shows no statistical significant difference in the academic performance between the experimental group and the control group, it is recommended that a similar study could be conducted with longer span of time

with different grade levels and with different subjects as well, to determine its effectiveness.

3. It is also recommended that several in-service trainings on the integration of the Reality Pedagogy may be conducted not only for Science teachers but also for teachers on the other subject areas as well.
4. The teachers and students may be exposed to trainings, symposia, or conferences that gives new idea about motivation techniques. This way, the teachers could help increase the level of motivation of students to learn Physics.

BIBILIOGRAPHY

Angell, C., Guttersrud, Ø., Henriksen, E. K., and Isnes, A. (2004). Physics: Frightful, but fun, Pupils' and teachers' views of Physics and Physics teaching [Electronic version]. Science Education, 88, 683-706.

Bajpai, M. (2013). Developing Concepts in Physics Through Virtual Lab Experiment: An Effectiveness Study. *Te c h n o L E A R N: An International Journal of Educational Technology. 3 (1),* 43-50.

Bernardo (2008). Exploring epistemological beliefs of bilingual Filipino preservice teachers in the Filipino and English Languages. *The Journal of Psychology, 142*(2), 193-208.

Biggs, J. (1987). *Student approaches to learning and studying.* Paper presented at the Australian Council for Educational Research, Melbourne.

Borges, S. (2009). A Longitudinal Ethnographic Study: Bridging the Cultural Gap Between Urban High School Students and their Culturally Diverse Teacher Through Reality Pedagogy. Retrieved from http://www.libraries.psu.edu/content/dam/psul/up/lls/documents/APA_Quick_Citation_Guide.pdf

Britner, S. L., and Pajares, F. (2006) Self-efficacy beliefs, motivation, race, and gender in middle school science. *Journal of Women and Minorities in Science and Engineering, 7*, 271–285.

De Mesa, A. P., & De Guzman, A. B. (2006). Portrait of Filipino teachers' classroom practices: traditional or constructivist? *Educational Research on Policy and Practice, 5*, 235-253.

Deci, E. L., Koestner, R., & Ryan, R. M. (2002). Extrinsic and intrinsic motivation in education: Reconsidered once again. *Review of Educational Research*. 71(1): 1-27.

Dembo, M. H., & Eaton, M. J. (2000). Self-regulation of academic learning in middle-level schools. *The Elementary School Journal, 100*(5), 473 - 490.

Emdin, C. (2011). Droppin' science and dropping science: African American males and urban science education. *Journal of African American Males in Education, 2*, 66-80.

Ferguson, E. D. (2000). *Motivation: A biosocial and cognitive integration of motivation and emotion*. New York: Oxford University Press, Inc.

Glynn, S. M. (2011). Science Motivation Questionnaire: Construct validation with nonscience majors. Journal of Research in Science Teaching, 46, 127–146.

Hidi, S., Renninger, K.A. & Krapp, A. (2004). Motivating the academically unmotivated: A critical issue for the 21st century. *Review of Educational Research, 70(2), 151-179.*

Liem, A. D., Nair, E., Bernardo, A. B. I., & Prasetya, P. H. (2008). In the students' own words: Etic and emic conceptual analyses of why and how students learn. In O.S. Tan, D. M. McInerney, A. D. Liem, & A.-G. Tan (Eds.). *What the West can learn from the East: Asian perspectives on the psychology of learning and motivation* (pp. 137-167). Greenwich, CT: Information Age Press.

Lunenburg, F. C. (2011). Goal-setting theory of motivation. *International Journal of Management, Business and Administration*. 15(1): 1-6.

Nedic, Z., Machotka, J. and Nafalsk, A. (2003). *Remote laboratories versus virtual and real laboratories.* November 58, 33rd ASEE/IEEE Frontiers in Education Conference. Downloaded from http://www.icee.usm.edu/ICEE/conferences/FIEC2003/papers/1077.pdf

Petri H. L. (1986). Motivation Theory and Research, 2nd edition. USA: Wadsworth Publication.

Reeve, J., Bolt, E., & Cai, Y. (1999). Autonomy-supportive teachers: How they teach and motivate students. *Journal of Educational Psychology, 91,* 537–548.

Ross C. M. (1999). The Relationship among Academic Achievement Motivation, Motivation Orientation, and Ability-Achievement Differences in Reading. Phd. University of Alabama, USA.

Roth, W. M., & Tobin, K. (2005). *Teaching together, learning together.* New York: Peter Lang.

Sidin, R. (2004). Pembudayaan Sains dan Teknologi: Satu Cadangan Piawai [Socialization of science and technology: a standard proposal]. Jurnal Pendidikan (UKM), 47-63.

Singh, K., Granville, M., and Dika, S. (2002). Mathematics and science achievement: Effects of motivation, interest and academic engagements. The Journal of Educational Research, 95(6), 323-332.

Taher, T. (2012). Exploring the Impact of the Implementation of Reality Pedagogy: Self-efficacy, Social Capital, and Distributed Cognition (Doctoral thesis, Colombia University). Retrieved from http://academiccommons.columbia.edu/catalog/ac%3A174519

Tobin, K. (2006). Learning to teach through coteaching and cogenerative dialogue. *Teaching Education*, *17*(2), 133-142.

Walberg, H. J. (1988). Creativity as learning. In R. J. Sternberg (Ed.), The nature of creativity (pp. 340-361). New York: Cambridge University Press.

Woolfolk, A. E. (2001). *Educational psychology* (8th ed.). Boston, MA: Allyn & Bacon.

Wright C., Standen, P., & Patel, T. (2010). *Black youth matters: Transitions jrom school to success.* New York: Routledge.

Zacharia, S.J. & Olympiou, B.J. (2010). Learning environment, attitudes and achievement among middle-school science students using inquiry-based laboratory activities. *Research in Science Education*, *38*, 21-341.

Zimmerman, B. J., & Risemberg, R. (1997). Self-regulatory dimensions of academic learning and motivation. In G. D. Phye (Ed.), *Handbook of academic learning: Construction of knowledge*. San Diego, CA: Academic Press.

Zimmerman, B. J., Bonner, S., & Kovach, R. (1996). *Developing self-regulated learners: Beyond achievement to self-efficacy*. Washington DC: American Psychological Association.

Zulueta, F. & Guimbatan, K. (2002). *Teaching strategies and educational alternatives*. Manila,Philippines: Academic Publishing Corporation.