SOCIAL NETWORKING SITES: ITS EFFECTS TO MATHEMATICS PERFORMANCE OF STUDENT AT RISK OF DROPPING OUT (SARDO)

[1]ARCHIE M. TORCENDE, [2]MANELYN MAE L. MALAY

[1]Ed.D. , [2]MAEd
[1,2] Department of Education, Carcar City Division
P. Nellas St. Poblacion III, Carcar City, Cebu, 6019 PHILIPPINES

Abstract: Social Networking site is a strategy which engages students in interactive learning activities and supplementary materials as intervention through the use of computer technology and other gadgets to aid in improving the students' performance. The researcher determined the effectiveness of social networking sites in the performance of grade eight Students at Risk of Dropping Out (SARDO). A pre-experimental design was used in the conduct of the study. It also used purposive sampling technique in determining the subject of the study. One group of students with same character or alike who got the most number of absenteeism, tardiness, late submission of assignment and cutting classes were identified as SARDO. A 40-item test was administered during pretest-posttest focuses on the different learning competencies in the second quarter. It was found out that the pretest mathematics performance of grade eight SARDO was "did not meet the expectations" and the posttest was "fairly satisfactory". Moreover, there was significant difference in the pretest and posttest mathematics performance. The posttest performance was significantly increases. It was concluded that that Social Networking Sites are effective interactive learning activities, supplementary materials and intervention in teaching mathematics eight to the SARDO.

Keywords: Social Networking Sites, Mathematics Performance, SARDO, pre-experimental design, purposive sampling technique.

1.   INTRODUCTION

Social Networking site is a strategy that engages students in learning, interactive and supplementary materials that help improve performance for it support teachers in class management through the use of technology and gadgets. Educators especially teachers around the world are working very hard to prepare daily lesson plan, instructional materials and recording of scores, grades and forms just to deliver an optimum education and spending most of their time on creating activities that are highly motivating to the students to participate. Activities must be exciting, fun and educational at the same time. Teachers just not preparing for activities, they also do recording of score, grading performance using the electronic class record and give assignments for reinforcement of the lesson's learned by the students. It enables teachers to give out and analyze homework efficiently, and to give more attention to individual students. Social Networking site empowers teachers to focus on providing quality education to our future generations. These are some of Social Networking Sites that commonly use Facebook, LinkedIn, Youtube, Quipper, Twitter and Instragram of our young generation. "People of all ages are flocking to the Internet café and are signing up for social networking sites by the millions. Facebook, for example, boasted 901 million monthly active users and more than 125 billion friend connections at the end of March" (Key Facts, 2012).

The rapidly and constantly growing social networking sites is the new interactive channel wherein people get connected around the world. It may be used as a digital tool to be connected either in education or business and others. In education, it is used as an interactive tool or instructional material for teachers. It can be used inside the school premises or even outside the school in a form of research and assignment. Nowadays, learners are more active in the social networking sites like facebook and youtube.

New trends are updated in the digital world. Since learners are more active in Social networking sites, Educators must set to take advantage of the multiple collaboration tools and discussion opportunities provided by social networking sites for secondary and higher education (Hoffman, 2009; Mason & Rennie, 2008, as cited in Forkosh-Baruch, & Hershkovitz, 2012). "Despite the fact that there is limited guidance on how educators can integrate social networking sites into subjects which have been traditionally delivered face-to-face"(Andrews & Drennan, 2009).

Teachers must be responsible in checking the information that can have a potential benefits and harmful effects using social networking site as new innovative way in teaching learners to improve mathematics performance. Completion of a task may be difficult but with the guided instruction and facilitation where a teacher uses cues, notes, questions and direct explanation, modeling it increases learner's motivation and eagerness to complete the task. Teachers must be approachable and accommodating so that learners feel the comfort.

The learners are actively engaged and manipulated in technology likewise there are also doing in playing online games. Students in interest will use Inquiry approach. This approach, "the learner message, pose and answer questions individually and/or collaboratively in order to draw conclusions regarding the specific issues or scenarios" (Hakverdi-Can &Sonmez, 2012). It is obvious that they learn more because learners act without external force and they simply enjoy an activity or see it as an opportunity to actualize their potential, explore and most especially learn from it. "Learning How to Design a Technology Supported Inquiry-Based Learning Environment" (Meral Hakverdi-Can and Duygu Sönmez,2012).

At present, there are 1300 students enrolled in the night department of Ramon Duterte Memorial National High School for the academic year 2016-2017. And 16% of them are at risk of dropping out. And 12 % is at risk of Failure and retention based on the academic performance of the students. Based on the data last school year, the number one cause of dropping out is the lack of interest followed by the family problem. Most of the students showing lack of interest are students who are spending their allowance in the internet café and being addicted to some of the online games. These students are also the same students whom you would see taking a cigarette near in the campus chatting with their peers, barkada and worst is they are also have gangs. So, these are some of the students that are considered in the SARDOs. Most of the SARDOs are over age, they are the ones who have lots of failures and retention in a particular grade level. These reasons have become alarming since the Department of Education is pursuing the zero percent drop out and 100% passing rate.

One of the interventions and remediation of the teachers for the past years is they give the students modules and exercises to be answered yet the students cannot do it because they don't understand what they are answering for the reason that they did not attend in the regular classes. The teacher spends their quality time in making modules and exercise as students also spends money for photocopy of the modules and exercise will end up in no use. Since, the school is already offering a google class. The google do their first implementation of using google apps for education in Ramon Duterte Memorial National High School- day department where the selected sections from grades 7, 8, 9 and 10 students of the day department were able to use google chrome book. Google chrome book is a netbook that it is provided by the google where the student can access their lessons using the google forms, google docs, google spreadsheet, facebook, youtube and other google apps. Thus, the result given based on the feedback of the students and the evaluation of the teacher is very satisfactory. It gives the researcher the motivation to really try to integrate technology in teaching. Unfortunately, the scenario here does not happen in the night department for it is not part of the google implementation program. The students have limited access of computers in computer laboratory. Only the students from the grades nine and ten majoring computer can use the computer laboratory.

Hence, the researcher has decided to make a research on social networking sites: its effects to the night students and SARDOs Mathematics performance. With this research, it will help us evaluate if the social networking sites will still have a positive effect to the night students especially the SARDOs without using the chrome book but merely social networking sites only. One of the most common problems of the night school is the increasing rate of the drop out students. This study will fill in the gaps of students who are spending their time at internet café and for teachers that they

can give intervention and remediation to the students that in SARDOs. With the use of SNS, teachers can provide an online tutorial videos to students who are eager to change and make up their classes with the same competencies that the Department of Education introduced. Students can learn from the best tutors anytime and anywhere for an extremely affordable price. Assessment in the performance is easy because the online site provides fast evaluation of performance of the learners and at the same time, students are encouraged to master the subjects they are assigned to. It also gives the teachers less workloads because the teacher will not be spending time to make modules and exercise. They will just facilitate on how to use the online site and help the students by answering the messages of the students through quipper and facebook. Thus, the researcher will verify if it is applicable to all kinds of students especially the delinquent students / SARDOs since they are already identified as students with less motivation. Furthermore, the study addresses the current situation of Ramon Duterte Night High School which 20% of the SARDOs needs an effective intervention that would help them finish the curriculum.

Statement of the Purpose:

The purpose of the study was to evaluate the effectiveness of social networking in the mathematics performance of grade eight Students At Risk of dropping Out (SARDOs) of Ramon Duterte Night High School for the school year 2016-2017.

Specifically, the study will seek answer to the following sub-problems:

1. What is the pretest Mathematics performance of the students?

2. What is the post-test Mathematics performance of the students?

3. Is there a significant difference between the pre-test and post-test Mathematics Performance of the students utilizing Social Networking sites?

4. Based on the findings of the study, what Mathematics intervention and supplementary learning materials can be proposed?

2.   RESEARCH METHODOLOGY

Design:

This study was a quantitative utilizing pre experimental design of research. Pre -experimental was the fit design for there was no comparison group. It also included a case study where the researcher only used one group purposely which were the SARDOs and one group pre-test/ post-test design where a benefit of this design was the inclusion of a pretest to determine baseline scores and post test after the intervention. In this study, the researcher compared the scores of the pre-test and post test, prior to engaging the students on the Social Networking sites experience to the post-test after completing the set of social networking site experience. Data mining was done to determine the SARDO. This was taken from the mathematics coordinator of the school. The identified SARDO were informed and was given a parent's permit which clearly stated that they were willing to participate in the intervention and they could either withdraw at any time.

Respondents:

There were one hundred eighty (180) Grade 8 students of four sections of Ramon Duterte Night High School for the Academic Year 2016-2017. Each section has 15 to 20 students who were identified SARDOs and they would be respondents of this study. The identified SARDO underwent an intervention on social networking site. There were limited numbers of respondents involved because it only focused on the SARDO. SARDO were students who got the most number of absenteeism, tardiness, late submission of assignment and cutting classes. The researcher was using a purposive sampling. The sample was based on the availability of the respondents that would be appropriate for the study. Specifically, it is a case study of the group of students with same character or alike.

Instrument:

The research instrument that was used by the researcher was adapted from the pre-test and posttest in the Learners Materials Mathematics 8 book and Teachers Guide provided by the Department of Education. The instrument was consist of 40-item which focuses on the learning competencies in the second quarter. These include: identifies polynomials which are special products; polynomials with common monomial factors, trinomials that are products of two binomials, trinomials that are square of a binomial, and products of the sum and difference of two terms (e.g. x^2-y^2); special products

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and factors of a certain polynomials; products of two binomials, product of a binomial, cube of a binomial, and product of the special case of multiplying a binomial and a trinomial; factors completely different types of polynomials with common monomial factors, a difference of two squares, sum and difference of two cubes, perfect trinomial, general trinomials using specials formulas, grouping and other techniques; solves problems involving polynomials and their products and factors; define rational expressions and simplifies rational expressions; Multiplies and divide rational expression; add and subtract rational expressions; solve problems involving rational expressions; define and interprets zero and negative exponents; and simplifies algebraic expression involving integral expressions.

Data Analysis:

The following statistical tools were tested with 0.05 level of significance. These were:

Mean or Average Score for the performance of the SARDO in mathematics eight during the pretest and post test using the paper and pen.

Standard Deviation was to measure the dispersion of the SARDO scores.

T-test of independent samples. This was used in determining the significant mean difference between the test results in grade eight mathematics during the pretest and post test

3. RESULTS AND DISCUSSION

Pretest Mathematics Performance:

The level of performance of Grade eight SARDO was measured during the pretest which focused on the competencies in algebraic expressions. There were 40-item test questions used in giving the assessment to the grade eight SARDO of Ramon Duterte Memorial National High School- Night Department. This is presented in Table 1.

Table 1: Pretest Mathematics Performance

Assessment	Total Score	Mean Raw Score	No. of Items	Mean Percentage Score	Descriptor
Pretest	472	13.88235294	40	34.70588235	**Did not meet the Expectations**

N = 30

Legend: 75 below - Did not meet the expectation, 75-79 - Fairly Satisfactory, 80-84 - Satisfactory, 85 – 89 - Very Satisfactory, 90 and above –Outstanding

As reflected in Table 1, the level of Performance of Mathematics of Grade eight SARDO at Ramon Duterte Memorial National High School- Night Department during the pretest without the exposure in Social Networking Sites. It was found out that the level of performance of the Grade 8 SARDOS during the pretest was 34.70 or **did not meet the expectations**. Majority of the SARDOs got low scores during the pretest because they are don't have prior knowledge on the algebraic expressions. In addition, the SARDOs have less self-motivation to answer the questions because they are not acquainted of the topic in the pretest.

This implies that teacher may create innovative techniques in the delivery of the instruction to the grade eight SARDOs in Mathematics to further understand the concept of algebraic expression in simplest way through application in the real life situation and integration of technology in teaching.

Posttest Mathematics Performance:

The level of performance of Grade eight SARDOs was measured during the posttest which focused on the competencies in algebraic expressions. There were 40-item test questions which are also parallel to the competencies of the pretest were used in giving the assessment to the grade eight SARDO of Ramon Duterte Memorial National High School- Night Department.

Table 2: Posttest Mathematics Performance

Assessment	Total Score	Mean Raw Score	No. of Items	Mean Score	Percentage	Descriptor
Posttest	1025	30.14705882	40	75.36764706		**Fairly Satisfactory**

N = 30

Legend: 75 below - Did not meet the expectation, 75-79 - Fairly Satisfactory, 80-84 -   Satisfactory, 85 – 89 -   Very Satisfactory, 90 and above -Outstanding

As reflected in Table 2, the level of Performance of Mathematics of Grade eight SARDO at Ramon Duterte Memorial National High School- Night Department during the posttest after the exposure in Social Networking Sites. It was found out that the level of performance of the Grade 8 SARDO'S during the posttest was 75.36 or **Fairly Satisfactory.** Majority of the SARDO got the passing score. This means that the SARDOs learned and mastered some concepts of algebraic expression after exposing them to social networking sites.

This implies that the use of networking sites as intervention and supplementary activities create a positive impact to the level of mathematics performance of grade eight SARDO's. The results affirm to the study of Pigford (2005) that in teaching algebraic expression it should be activity-centered in which students manipulate things during the processing of new knowledge by changing abstract ideas to concrete learnings. In addition, Shaw (2013) which states that learning is an active process in which the learner himself is definitely involved. It calls for active doing physically, mentally and emotionally. It is based upon the learner's ability to perceive, comprehend, react and integrate with past experiences of which the curricula are composed. Involvement is called for to promote self-direction which is the key to self-motivation.

Significant Difference between the Performance of the Students in Pretest and Post-test after using Social Networking Sites

The significant difference between the performance of the students in pretest and posttest using Social Networking sites is tested using the level of significance of 0.05. This data used in finding the significant difference was based on the scores obtained by the grade eight SARDO's in Mathematics Performance. This is presented in Table 3.

Table 3: Significant Difference between the Mathematics Performance of the SARDO'S in Pretest before intervention and Posttest after using the Social Networking Sites intervention.

	Mean	N	Std. Deviation	p-value
Pre-test	13.8823529	30	4.16161	
Post-test	30.14706	30	3.47399	.000

As shown in Table 3, shows there was significant difference between the performance of the students in pretest and posttest after using Social Networking Sites. It was revealed that the p-Value of 0.000 is lesser than 0.05 the null hypothesis is rejected. Therefore, there was a significant difference between the Mathematics performance   in algebra of the Grade 8 SARDOs before and after using Social Networking Sites. The Grade eight SARDO's have significantly different performance during the pretest and posttest assessment. The posttest assessment was greater than the pretest assessment.

It implies that the use of social networking sites as intervention activities to SARDO's create a positive impact to their performance. The social networking sites are effective in improving the mathematics performance of grade eight SARDO. They can easily learn the concept when they are engage in social networking sites. One student said that the use of quipper in learning the concept of algebraic expression is very effective for learning because this social networking site explained well the step by step procedure in solving.

"*Ganahan kaayo ko mugamit ug quipper kay dali ra naku masabtan an topic kay tagsa-tagsaon jud ug explain. Para naku effective ni for learning.*" *(I like to use quipper because I can easily understand the topic. It explained in details. I believe this is effective for learning).*

Another student said that I am more interested in learning through the use of the social networking site because I can interact with my classmates and teacher through private message and my progress in learning is shown in the dashboard which makes me feel interesting.

"*Ganahan ko mugamit ug social networking sites kung magklase kay makasabot dayon ko tungod kay mag interact man ang akong mga klasmate ug teacher sa private messaging. Makita pod naku kung unsa na ang progress sa akong nakat-unan pinaagi sa dashboard. It is very interesting jud sya.*" (I like to use social networking sites as a form of class because I can easily understand with the interaction of my classmates and teachers through private messaging. I can also see my learning progress as revealed in the dashboard. It is very interesting).

With the statements of the students, it is safe to say that social networking sites are an effective intervention activities to save the SARDO. According to Siemens (2008), "learning is no longer an individualistic activity. Knowledge is distributed across networks". In our digital society, the connections and connectiveness within networks lead to learning. Learners can learn through the proper usage of Social Networking Sites.

4. SUMMARY OF FINDINGS

The salient findings of the study are enumerated categorically and briefly by parts and itemized by areas of concerns. These are the following findings:

The pretest Mathematics performance of Grade 8 SARDO'S was given the descriptor of **Did not meet the expectations**. The posttest Mathematics performance of Grade 8 SARDO'S after the Social Networking Site intervention was **Fairly Satisfactory**. There was **significant difference** in the pretest Mathematics performance of Grade 8 SARDO'S without using the Social Networking Sites and in Posttest after the Social Networking Sites intervention.

5. CONCLUSION

Based on the findings, it can be concluded that social networking site is an effective supplementary materials and intervention in teaching Mathematics eight SARDOs. SARDOs learn in the simplest way through connecting with peers and teachers in the social networking sites. The result affirmed with the theory of connectivism that learning occurs when knowledge is actuated through the process of a learner connecting to and feeding information into a learning community" (Kop, 2008).

6. RECOMMENDATION

Based on the findings and conclusion, the following are recommended:

1.   To propose on the use of social networking sites as intervention in teaching and remedial of SARDOs and students with difficulty in mathematics and other core subjects.

2.   Seminar/ Workshops may be given to the teachers to equip them on the essential skills in the use of social networking site like quipper, facebook, and others as intervention of the students' learning.

3.   The grade eight SARDO'S in Mathematics are expected to improve their level of performance. They have to engage themselves in performance task assessment through Social Networking Sites driven activities.

4.   The school head may give full support for the teachers to come up with new innovative in teaching strategies to abreast the new trend of learning- teaching process.

5.   Future studies may be conducted parallel to this study with different topics in Mathematics and subject areas. These may include designing own online learning materials, complimentary materials.

5.1   Multimedia: An Instructional Materials for 21st Century learners.

5.2   Open Courses/ Online Learning: It's Effect to the ALS Student.

5.3 Effectiveness of Recording Forms using Electronic Programs.

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