The Effectiveness of the Enrichment Program among Brokenshire College First Year Student Nurses of SY 2005-2006

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Abstract

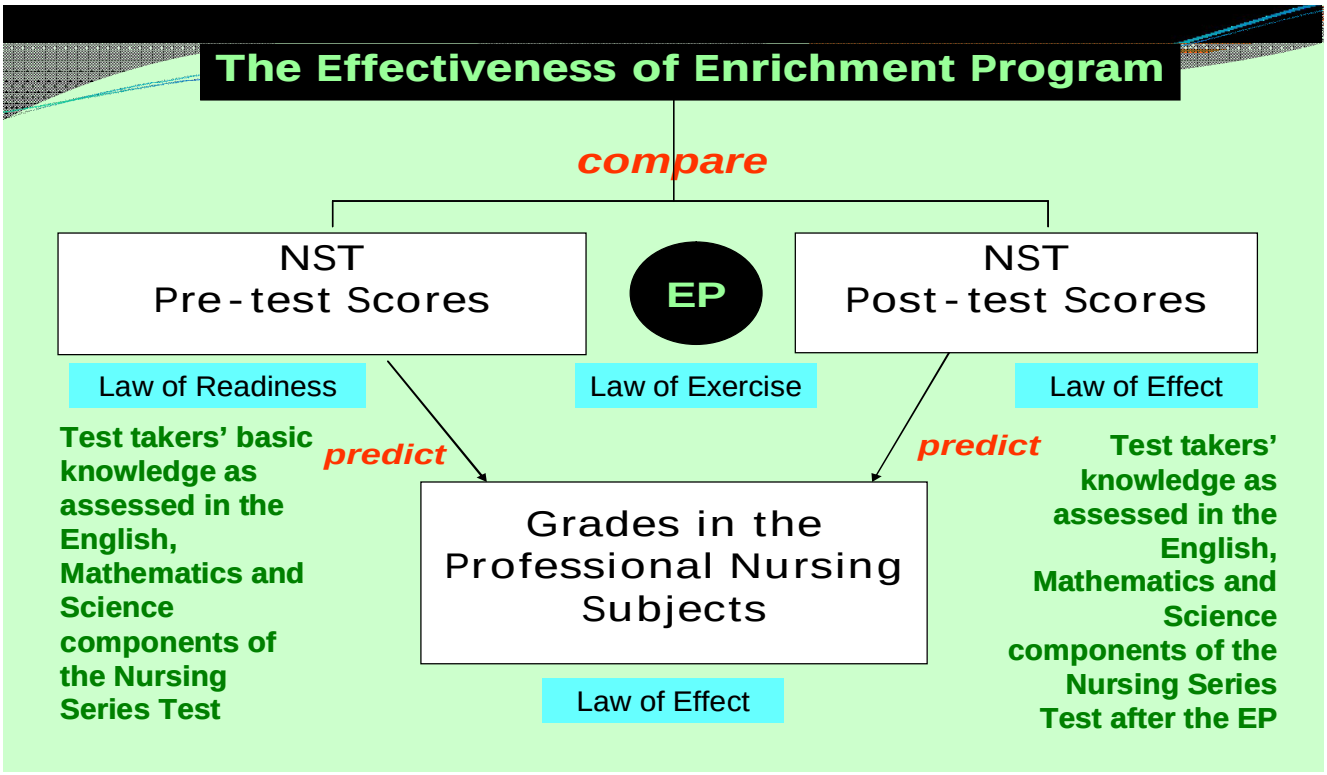
This single group experimental study assessed the effectiveness of the Enrichment Program conducted in Brokenshire College, Davao City in SY 2005-2006. It compares the pretest and posttest mean scores in English, Mathematics and Science. The same scores were used as predictors of the grades in fourteen (14) professional nursing subjects. A total enumeration of 535 first year student nurses who scored low in the Nursing Series Test participated in this study. Results show that there is a significant increase from pretest to posttest scores. The said scores significantly predict the grades in the professional nursing subjects.

Observation on 1st year student nurses:

Difficulty in English: As expressed by English teachers in an Enrichment Program meeting, most students can neither answer critical questions about what they have read nor can they understand the arguments presented in the newspaper

Difficulty in Math: Teachers report that students seem to have forgotten what they have learned in their primary and secondary years of education. Basic concepts have to be refreshed again and again in order for them to understand more complex situations.

Difficulty in Science: Because of the complicated jargons used, teachers of the Enrichment Program mentioned that lessons have to be taught in a slow pace manner in order for the students to fully grasp the concepts.



Enrichment Program (EP): The program was implemented on the second semester of the school year 2005-2006 which ran for 18 weeks.

Subjects	Number of Class Hours
English	36 hours
Mathematics	18 hours
Science	18 hours
Total	72 hours

Method

Quantitative Study- Measured the pre-test and post-test scores of students in English, Mathematics and Science through comparison of the incremental scores in their selected subjects under the professional phase of nursing.

Single Group Experimental Design- To determine the effectiveness of the Enrichment Program given to the students who scored low in the Nursing Series Test.

- Students of Brokenshire College who took the Nursing Series Test (NST) last SY 2005-2006, with NST performance rating of 30 percentile rank and below in English, Mathematics and Science
- Students who participated in the EP
- From the initial 1,057 Enrichment Program participants, 535 students were considered for this study.

Inclusion criteria:
1.) Availability of data in terms of the participants scores in the NST pretest and posttest.
2.) Their participation in the regular session of the Enrichment Program
3.) Availability of the participant's grades in the selected subjects under the professional phase of nursing.

Instrumentation

Components of Nursing Series Test Used in the Study	No. of test items	Time Allotment
Arithmetic	50 test items	20 mins
English	45 test items	30 mins
Science	85 test items	30 mins

Procedure
- Secondary data available at the CPWC databank.
- Pretest results - gathered last August 5, 2005 during the NST administration; Posttest results - collected last March 27, 2006
- Retrieve grades of selected subjects under the professional phase of nursing from the Office of Students' Records. Selected subjects were provided by the Dean of Nursing Department.
- Pretest and posttest scores and the grades from the professional nursing subjects were encoded and analyzed using Mean and Standard Deviations, T-test of independent /uncorrelated samples and Simple Linear Regression

Procedure (Enrichment Program)
- ❖ Proposed by CPWC and proposal approved by Academic Council for Implementation
- ❖ Teachers view the contents of the English, Mathematics and Science components of the NST. This is to match the contents of the test with the contents of the module that they will be doing.
- ❖ The teachers were not informed of the specific performance of the students in each sub-tests to avoid bias in their module making process.
- ❖ The module output done by the teachers were used throughout the Enrichment Program duration from November 14, 2005 to March 25, 2006.

Results and Discussion

Table 1
Pretest and Posttest Mean Scores of Students who attended the Enrichment Program

	English		*Math*		*Science*	
	Mean	SD	Mean	SD	Mean	SD
Pretest	38.36	13.15	15.62	7.97	33.28	7.00
Posttest	48.64	13.37	19.34	9.96	40.28	8.04

Table 1 shows that there is an increase in the posttest mean scores in English, Mathematics & Science compared to the pretest mean scores. Among the three areas, it is English that has the highest increase from the pretest to the posttest mean scores.

Table 2
Difference of Pretest and Posttest Mean Scores

		Mean	SD	Std. Error Mean	t	df	p-value
Pair 1	English pretest – English posttest	-10.28	9.23	.39	-25.74	534	.000
Pair 2	Math pretest – Math posttest	-3.71	5.82	.25	-14.75	534	.000
Pair 3	Science pretest – Science posttest	-7.00	6.25	.27	-25.89	534	.000

Table 2 presents that among the three subject areas, English has the highest mean gain score. Considering the mean gain scores, respondents have much learning from the English teachers while Mathematics can be perceived as a difficult subject despite teacher's detailed explanations and homeworks. The team teaching approach on the four (4) branches of Science used by the teachers may have added more knowledge on the respondents.

Table 3

Coefficients of Regression of English Pretest-Posttest Scores and Academic Performance in Education 25, NCM 105 and NCM 100 Subjects

	Pretest			*Posttest*		
	Educ 25	NCM 105	NCM 100	Educ 25	NCM 105	NCM 100
R	.26	.29	.35	.20	.32	.34
R-Square	.068	.085	.125	.041	.108	.116
β	.056	.068	.090	.043	.075	.085
F	39.12	49.30	75.82	23.044	64.22	70.164
p-value	.000	.000	.000	.000	.000	.000

Table 3 compares the predictability of the pretest and posttest scores to the professional nursing subjects. Both the pretest and posttest scores significantly predict the grade in Educ 25, NCM 105 and NCM 100 with an associated probability value of p=.000. Based on R-square values Enrichment Program has most contribution in NCM 105. Though there is a significant relationship between the pretest and posttest scores in English and the professional subjects, still the existing relationship (range of r=.20-.35) is weak. In relation, R-square values reveal that the students' academic performance in English can be attributed to other factors other than the Enrichment Program wherein pretest scores contribution only ranges from 6.8-12.5 % in the three (3) English Subjects and posttest scores contribution ranges from 4.1 to 11.6% in the three (3) English Subjects.

Table 4

Coefficients of Regression of Math Pretest-Posttest Scores and Academic Performance in Pharmacology, Nutrition and Dietetics and Biostatistics

	Pretest			*Posttest*		
	Pharmacology	Nutrition & Dietetics	Biostatistics	Pharmacology	Nutrition & Dietetics	Biostatistics
R	.35	.29	.40	.40	.34	.49
R-Square	.127	.087	.161	.166	.116	.241
B	.170	.150	.284	.155	.138	.278
F	77.82	51.04	102.21	106.27	70.10	169.10
p-value	.000	.000	.000	.000	.000	.000

Both the pretest and posttest scores significantly predict the grade in Pharmacology, Nutrition and Dietetics, and Biostatistics with an associated probability value of p=.000. Among the three subjects, Enrichment Program has the most contribution in Biostatistics.

Table 5

Coefficients of Regression of Science Pretest-Posttest Scores and Academic Performance in Chemistry 1, Biology 4, Biology 5, Biology 6, NCM 101, NCM 102, NCM 103 and NCM 104

	Pretest								*Posttest*						
	Chem 1	Bio 4	Bio 5	Bio 6	NCM 101	NCM 102	NCM 103	NCM 104	Chem 1	Bio 4	Bio 5	Bio 6	NCM 101	NCM 102	NC 10
R	0.39	0.4	0.31	0.39	42	0.36	0.34	0.37	0.49	0.44	0.41	0.48	0.51	0.43	0.4
R-Square	0.157	0.1	0.1	0.16	0.18	0.13	0.12	0.14	0.248	0.2	0.17	0.23	0.265	0.192	0.1
Constant	73.47	75	76.5	72.8	78.5	78.6	79.46	78.74	70.51	72.4	74	71	76.93	77.37	78
β	0.272	0.2	0.2	0.2	0.17	0.15	0.083	0.146	0.298	0.23	0.23	0.21	0.183	0.152	0.0
F	98.96	78	59.7	101	118	82.2	72.99	86.88	176.4	134	110	160	191.7	126.6	13
p-value	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 5 compares the predictability of the pretest and posttest scores to the Science related professional nursing subjects. Showing an associated probability value of p=.000, the pretest and posttest scores significantly predict the grades in Chemistry 1, Biology 4, Biology 5, Biology 6, NCM 101, NCM 102, NCM 103 and NCM 104. The relationships between the posttest scores and in Chemistry 1 (R=.49), Biology 4 (R=.44), Biology 5 (R= .41), Biology 6 (R=.48), NCM 101 (R=.51), NCM 102 (R=.43), NCM 103 (R=.44) and NCM 104 (R=.45) are higher compared with the relationships between the pretest scores and the said professional nursing subjects. Though if both pretest and posttest values are observed, the existing relationship with the science related professional subjects is weak (pretest range of R= .31 to .42, posttest range of R= .41 to .51).

Conclusion

1. First year student nurses who have undergone the Enrichment Program in English, Mathematics and Science have improved their posttest scores after the Enrichment Program.
2. The pretest and posttest scores in English, Mathematics and Science significantly predict the grades in the professional nursing subjects taken during the respondents' sophomore to senior year in college.

The researchers continued with the study to act on RECOMMENDATION NO. 6 through Focus Group Discussion (FGD). From the 17 sections of 4th year BSN students, 30% or five (5) sections were randomly selected for the focus group discussion. Purposive sampling was used in determining the students who participated in the FGD of the randomly selected section. These respondents belong to the randomly selected sections and have participated in the regular session of the Enrichment Program. A model was developed based on the FGD questions.

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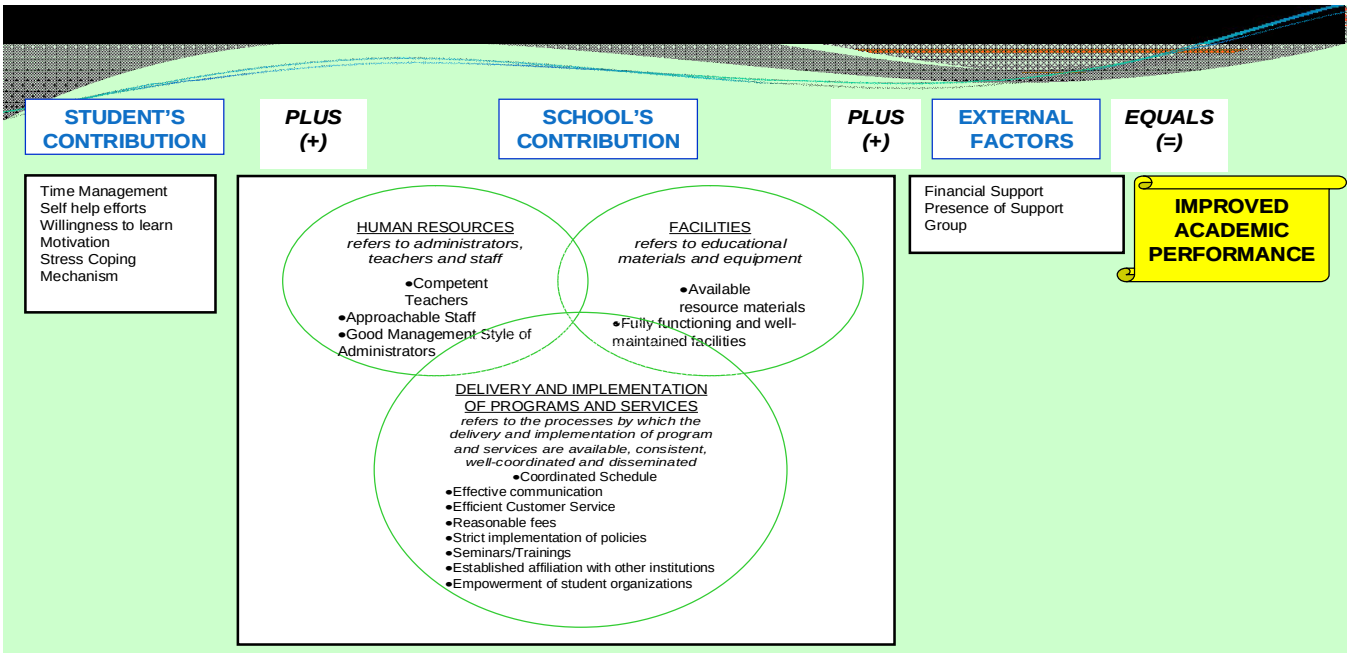

Figure 1: STUDENTS' ACADEMIC PERFORMANCE IMPROVEMENT MODEL

Table 6

Students' Perception on the Benefits of the Enrichment Program

Positive	Negative
• Review of basic knowledge learned in basic education • Enhancement of knowledge • Gives opportunity to proceed to next level of education • Relevant to minor subjects • Motivated to study	• Additional expenses • Additional stress • Meaningless to participants • Unchallenging lesson • Inefficient teachers • Negative perceptions to oneself

As shown in Table 6, participants of the focus group discussion (FGD) on the effectiveness of the Enrichment Program shared that the Enrichment Program has helped them. One of the top themes that came out during the discussion was the benefits of the Program. According to the students, the Program provided a means of review of basic knowledge learned in Basic Education. Some of the respondents stated that Enrichment Program is helpful, *"moreview og past lessons sa elementary"*(review past lessons in elementary) and "*nareview ang nakalimtan sa high school"* (reviewed what has been forgotten in high school). As mentioned earlier, the Program was administered to the then 1st year students of SY 2005-2006. Based on their response on the FGD, the Program helped them in remembering lessons learned in their basic education. Another theme that arose in relation to the positive effects of the Program was the enhancement of knowledge. *"Mapractice ang Math, mas masabtan ang concepts and know strategies to solve"* (Mathematics can be better practiced; there is more understanding of the concepts and strategies that can be used to solve problems.)

Further, the students also considered the Program as an opportunity to proceed to the next level of education. Those who do not pass the Nursing Series Test are either advised to transfer to other schools or to stay at Brokenshire College and pursue another course other than nursing. The Enrichment Program was provided for those who did not meet the standards of the Nursing Series Test. These students were given another chance to take the Nursing Series Test after undergoing enrichment.

The students also considered the Enrichment Program as being relevant to their minor subjects. This response may be brought about by the fact that the lessons discussed in the Enrichment Program are more related to their minor subjects.

Another theme that arose in the focus group discussion is that students became motivated to study. With the goal of passing the Nursing Series Test posttest and a chance to continue studying nursing, the students were in a situation that motivated them to study.

The Enrichment Program has its positive effects on its participants. Though like other things, it was not taken fully in a positive sense as some students had a negative perception towards the Program. Some of the students view the Program as bringing additional expenses to them. They felt that they are being used for moneymaking (*"gipangwartahan lang mi").* They shared that the Program brought additional units in their tuition and they also have to spend for their meals during the duration of the Program. Others also consider the Enrichment Program as an additional stressor and cannot find meaning in it. The lessons for them were unchallenging in addition to their perception of having inefficient teachers assigned in the Program. Students also mentioned that being included in the Enrichment Program caused negative perception to oneself as they came up with thoughts of being incompetent and not being mentally capable.

Table 7
Factors that contributed to the student's knowledge in English/Math/Science during the Enrichment Program.

	Positive	Negative
English	• Quality teachers • Teaching strategy	• No significant impact
Mathematics	• Good personality of teacher	• No significant impact
Science	• Efficient teachers	• Inconsistent teaching style • Less motivated teachers
Other Factors	• Willingness to learn • Time management • Availability of resource materials for learning reinforcement	• Uncooperative students because they are forced to take the Enrichment Program

Table 7 reveals that participants consider the teacher aspect as an important factor that contributed to their knowledge in English, Mathematics and Science. *"Teacher factor"* is what they often reiterate. Specifically, in English, they believed that quality teachers and teaching strategy helped in their learning. Most of the students mentioned *"ok kaayo ang teacher"* which implies that the teacher has been successful in conveying the lessons. In Science, efficient teachers make the

difference. Good personality of teachers was the factor that helped in contributing knowledge in Mathematics. However, some students also believed that in their Science subject, inconsistent teaching style and less motivated teachers were the negative factors in their learning. Other factors that contributed to their knowledge in the Enrichment Program as mentioned by the students were their willingness to learn, their time management and the availability of resource materials for learning reinforcement. Handouts and activities given by the teacher contributed to the students' knowledge.

Table 8

Factors that contributed to the increase/decrease of the student's Weighted Point Average (WPA) during the Enrichment Program

Factors that contributed to increase of WPA	Factors that contributed to decrease of WPA
• Efficient teachers	• Conflict of schedule
• Student's self help efforts	• Ineffective teaching methodology
• Presence of support groups	• Insignificant enrichment program
	• Other's expectations

When asked what contributed to the increase of their Weighted Point Average (WPA) during the Enrichment Program, the students, as shown in Table 8, responded that efficient teachers and student's self help efforts were the top factors. With those students whose WPA decreased during the Enrichment Program, they considered the conflict of schedule and ineffective teaching method. *"Sa kadaghan sa subjects, matunga ang oras kay pati free time kuhaon sa Enrichment Program"* (Considering the number of subjects, time is always divided, even the free time is spent for the Enrichment Program). Some students perceived the Program as insignificant and even considered it as the cause of the decrease in WPA.

Table 9

Factors that contributed to the increase/decrease of the student's WPA after the Enrichment Program

Year Level	Factors that contributed to increase of WPA	Factors that contributed to decrease of WPA
Second year	• Teacher • Less complicated subject • Lenient schedule	No Response
Third year	• Encouragement of teacher	• Increase academic demands • Conflict of schedule because of duties
Fourth year	No Response	• Increase academic demands • Conflict of schedule because of duties

Table 9 presents that the students believed that there are several factors that contributed to the increase/decrease of their WPA after going through the Enrichment Program specifically in their sophomore to senior years. In their second year of the nursing degree, all respondents have improved WPA. They attributed the increase to the teachers that facilitated their classes. The subjects that they took were also less complicated and the schedule in their second year was lenient. According to the students, they only have return demonstration and no exposure yet in the clinical area, *"RD pa lang, wala pa duty."* During their third year, those with increased WPA considered the factor of having encouraging teachers as one of the reasons of their improved academic performance. With those who have a decrease in their grades, the additional academic demands played a role in their lowered WPA. Conflicting schedules of their class and hospital duties was also considered a reason in their decreased WPA. They mentioned about *"mas nagfocus sa major subjects mao napabayaan ang minor"*, focusing more on the major subjects while giving less attention to minor subjects. Same reasons for the decrease in WPA during the third year were expressed by the respondents in their senior years. Though it should be noted that in their fourth year of schooling, all respondents have decreased WPA.

Table 10
School's contribution in improving the student's academic performance

Factors contributed by the school
• Efficient teachers • Training and skills enhancement • Availability of facilities • Conducive learning environment • Established affiliation to other agencies • Provision of quality education

- Approachable and efficient staff

In the conduct of Enrichment Program, Table 10 shows that students acknowledge that the school made a lot of contribution in improving academic performance. The combination of human and material resources helped in students' learning. Students view that efficient teachers and approachable staff have a contribution in creating a learning environment. *"Dynamic ang learning; mga C.I gaundergo og further studies"* (Learning is dynamic; Clinical Instructors pursue further studies). The school exerts effort in ensuring quality education through research, instruction, and extension. Quality education can mean stricter retention policies in order to have a good number of students who can perform well academically and carry out the skills and competencies expected in their chosen field. According to the students, there were allowed to do more hands-on training, *"mas daghan hands-on nga training"*. Learning was made easier with the availability of facilities. The school's affiliation with other agencies is also important because these become venues for application of learning. *"Proritized ang BC sa hospital"*, Brokenshire College is given priority in hospitals.

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