Collaborative Learning and its Impact on the Resilience Quotient and Academic Performance of Maritime Students

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Major components of the STCW 78/95 convention were modified during the last revision made in June of 2010 and one of these changes focus on "training in leadership and teamwork," cited by Ungureanu-Chirea & Constantinescu (IAMU AGA 14) in their paper "Ways to Implement STCW Manila for Training in Leadership and Teamwork." In relation to this, STCW 2010 provides among its requirements to non-technical skills the Application of Leadership and Team Working Skills (Reg. A-II/I, A-III/I and A-III/6). John B. Lacson Foundation Maritime University, recognized as a pioneering institution for the development of maritime education and training in the Philippines and known for its contribution to global manpower, continues to find ways to enhance its role of providing quality maritime education and training. On top of the university's goal is to train maritime students to develop higher order thinking skills which move beyond mere acquisition of knowledge and comprehension to higher dimensions such as application, analysis, synthesis and evaluation. These dimensions are seen at the peak of Bloom's (1956) Taxonomy, revised by Anderson (1990). Development of skills at the higher level allows a student to develop judgment not just in the context of his own self but in relation to others. To develop such mindset requires a good sense of personal vision, flexibility, social connectivity, and interpersonal competence among others, skills which are considered very important in producing competent future seafarers. To propel the students towards this direction, the university forms as part of its culture the development of resilience, excellence, agility, and leadership. Hence, continuous experiments have been explored with the aim of determining which teaching approaches and strategies could work best to train students to imbibe this culture. This quasi-experimental investigation was aimed to determine the impact of Collaborative Learning (CL) in Small Group Discussions (SGD) on the students' Resilience Quotient (RQ) as well as on their academic performance in Maritime English. The design of this paper is anchored on the concept that resilience can be learned, measured, and have lasting effects on academic performance (Waxman & Huang, 1999) and that it is closely connected to learning in a collaborative environment (Rutter, 1990).To measure the students' RQ, a standardized instrument designed by Russell Consulting, Inc. (2009) was adopted in the study while academic performance was measured by administering a pretest and post-test as well as a summative test to the control and the experimental group. Using various statistical tools such as *mean* and *standard deviation* and *t-test for dependent and independent means*, the study revealed that exposing students to collaborative learning through small group discussions has a significant impact on their academic performance and on the development of certain components of their RQ. The study recommends that further research must be done on resilience of seafarers with particular attention to the following components: interpersonal competence, social connectedness, proactive attitude, self-assurance, personal vision, flexibility, ability to organize, and problem-solving skills as all of these components play a very crucial and functional role onboard ship.

Keywords: Maritime English, collaborative learning, small group discussion, Resilience Quotient, academic performance

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This study was conducted in collaboration with Dr. Lourdes C. Arañador, Academic Director of John B. Lacson Maritime University. Dr. Arañador also handled the statistical component of this paper.

1. Introduction

Major components of the STCW 78/95 convention were modified during the last revision made in June of 2010 and one of these changes focus on "training in leadership and teamwork," cited by Ungureanu-Chirea & Constantinescu (IAMU AGA 14) in their paper "Ways to Implement STCW Manila for Training in Leadership and Teamwork." In relation to this, STCW 2010 provides among its requirements to non-technical skills the Application of Leadership and Team Working Skills (Reg. A-II/I, A-III/I and A-III/6).

John B. Lacson Foundation Maritime University, recognized as a pioneering institution for the development of maritime education and training in the Philippines and known for its contribution to global manpower, continues to find ways to enhance its role of providing quality maritime education and training. On top of the university's goal is to train maritime students to develop higher order thinking skills which move beyond mere acquisition of knowledge and comprehension to higher dimensions such as application, analysis, synthesis and evaluation. These dimensions are seen at the peak of Bloom's (1956) Taxonomy, revised by Anderson (1990). Development of skills at the higher level allows a student to develop judgment not just in the context of his own self but in relation to others. To develop such mindset requires a good sense of personal vision, flexibility, social connectivity, and interpersonal competence among others, skills which are considered very important in producing competent future seafarers. To propel the students towards this direction, the university forms as part of its culture the development of resilience, excellence, agility, and leadership. Hence, continuous experiments have been explored with the aim of determining which teaching approaches and strategies could work best to train students to imbibe this culture.

Along with this aim of developing the right values is the goal of sustaining a high level of academic performance among students. Because of this, continuous experiments have been explored on teaching strategies which could work best but because there is no prescriptive method tailored to different groups of students, teachers and those in the academe continue to investigate on what conditions could work best to enhance their students' academic performance. But much as the maritime industry considers the importance of academic performance, those in the field also give importance to resilience as basic in training future cadets. Resiliency is the capacity to cultivate strengths to positively meet the challenges of living; the ability to bounce back from adversity while maintaining personal and corporate integrity[1]. Parallel to this, the university considers the development of resilience as a crucial element in preparing its cadets for the realities that go with their profession and work environment.

Research experiments have revealed strong evidence connecting resilience and academic success. Resilience is also believed to be a key component of social emotional learning and as being a critical facet of education. It is believed that a highly resilient person has the ability to succeed in school despite adverse conditions such as poverty or abuse. He appears more confident, has a good sense of well-being, is positively motivated, and is able to set goals and accomplish these goals despite adverse situations. A resilient person relates well with others, and is able to deal with stressful situations. Research shows that resilience can significantly affect school and life outcomes for youth, including academic success, even for students who are faced with great adversity and that these skills can be learned, measured, and have lasting effects on academic performance. For instance, Waxman and Huang [2] found out that students who ranked in the 90th percentile on the standardized tests in mathematics were highly resilient, reporting significantly higher levels of task orientation and satisfaction, social self-concept, achievement motivation, and academic self-concept than their counterparts who ranked below the 10^{th} percentile. In another study by Scales et al. [3], it was found out that higher levels of resiliency traits are strongly correlated with higher grade point averages (GPAs) among middle and high school students. Hanson and Austin [4], in their own investigation, gathered that nearly every measure of resilience was positively related to concurrent test scores. The highest increases in test scores occurred in schools where the students reported high levels of resilience. Highlighting on the importance of resilience and academic performance, this experimental study was conducted to find out the effect of small group discussion as a collaborative strategy on the resilience quotient (RQ) and academic performance of students in Maritime English.

1.1 Theoretical Framework

Resilience is a significant factor in enhancing academic performance.Waxman and Huang [5]believe that this ability can be learned, measured, and have lasting effects on academic performance. Supporting this notion, Rutter [6] tries to propose a connection between collaborative learning and resilience. He claims that students learn best when they are actively involved in the process of learning. In addition, researches made by Beckman [7]; Cooper and Associates [8]; Goodsell, et al.[9]; and Johnson and Johnson [10]; report that, regardless of the subject matter, students working in small groups tend to learn more of what is taught and retain it longer than when the same content is presented in other instructional formats. Students who work in collaborative groups also appear more satisfied with their classes.

The theory of collaborative learning (also referred to as cooperative learning) assumes that learning is facilitated when direct instruction is removed from the classroom and when students are placed in small groups to work as a team on an assignment or project. Collaborative learning changes the traditional classroom structure by reducing competition and increasing cooperation among students. Tension and possible hostility between students is diminished, thus raising academic achievement. Bernard [11], in his own investigation, concluded that classrooms in which students are given an opportunity to respond, engage in cooperative learning environment, and participate in setting goals are more likely to learn and achieve better. All of these characteristics help students develop a sense of belonging and involvement and help reduce the feelings of alienation and disengagement. With that kind of connection in school, students will have more of a protective shield against adverse circumstances as they face life difficulties.

1.2 Conceptual Framework

This investigation anchors itself on the framework of Collaborative Learning (CL) [12] particularly in using small group discussions (SGD) as a useful tool in promoting resilience which is believed to be a significant factor in enhancing academic performance. The concept of the study is shown in the following paradigm:

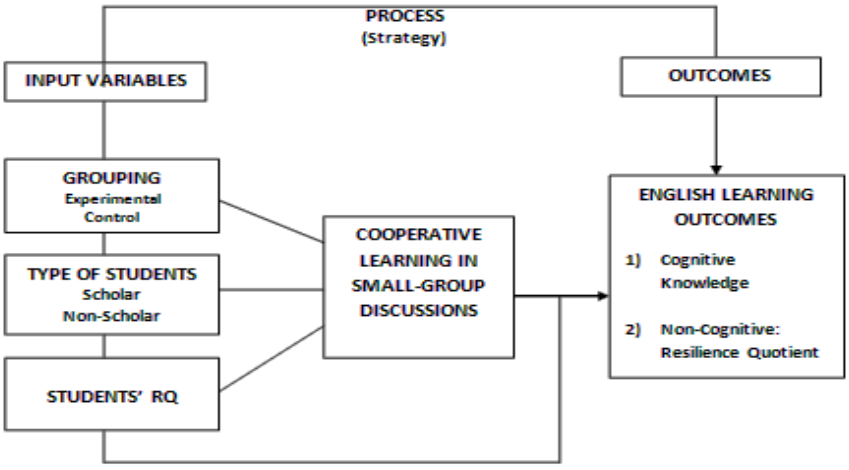

Fig. 1 The research paradigm showing the input, process, and outcome variables

The teaching and learning environment in the present study is seen as a process or strategy which shows the input variables on one end and the output variables on the other. The input variables are composed of grouping where the classes are divided into experimental groups that are exposed to CL in SGD environment and control groups that are taught using the traditional method of instruction; the type of students categorized as scholars and non-scholars; and their Resilience Quotient which was determined before the experiment. With these input variables, the intervention, when administered, is deemed to promote better learning. In this intervention, the collaborative learning environment, specifically the application of small group discussions, is employed with the experimental groups while the usual traditional method is to be used with the control groups. As an

outcome, the intervention is expected to create an impact on the students' cognitive knowledge as measured by their academic performance and non-cognitiveskill, particularly their resilience quotient which comprises the following components: self-assurance, personal vision, flexibility and adaptability, organizing skills, problem-solving skills, interpersonal competence, social connectedness, and proactive skills.

1.3 Objectives of the Study

This study advances the use of collaborative learning insmall group discussions as an intervention to develop resilience among students and to improve their academic performance specifically in Maritime English.Specifically the study was conducted to answer the following questions:

1. What are the scores of the control group and the experimental group in the eight components of Resilience Quotient before and after the intervention on the basis of the following groupings?

    a. between groups of scholars
    b. between groups of non-scholars

2. Is there a significant difference in the scores of the control group and experimental group in the eight components of Resilience Quotient before the intervention on the basis of the same groupings(between groups of scholars, and between groups of non-scholars)?

3. Is there a significant difference in the scores of the control group and experimental group in the eight components of Resilience Quotient after the intervention on the basis of the same groupings(between groups of scholars, and between groups of non-scholars)?

4. Is there a significant difference in the mean scores of the control group and experimental group in the pretest and posttest andin the summative test on the basis of the same groupings (between groups of scholars, and between groups of non-scholars)?

1.4 Hypotheses

The following were the hypotheses of the study: (1) There is no significant difference in the scores of the control group and experimental group in the eight components of Resilience Quotient before the intervention on the basis of the same groupings (between groups of scholars, and between groups of non-scholars); (2) There is no significant difference in the scores of the control group and experimental group in the eight components of Resilience Quotient after the intervention on the basis of the same groupings (between groups of scholars, and between groups of non-scholars); and (3) There is no significant difference in the mean scores of the control group and experimental group in the pretest and posttest and in the summative test on the basis of the same groupings (between groups of scholars, and between groups of non-scholars).

2. Methodology

2.1 Research Design

This study employed the quasi-experimental method using the pretest-posttest control group design. In this design, all four groups were given the RQ Test and the pretest prior to the experiment. The experiment lasted eight (8) weeks during which the experimental groups were taught using cooperative learning in small group discussions while the control groups were taught following the traditional method. After the 8-week intervention, the same groups were given the post-test using the same instrument used in the pretest with some modifications. The RQ test was again administered to record their scores in the eight components after the experiment. Scores taken from the summative test were also used to further describe the impact of the intervention on the students' cognitive skills.

2.2 Participants

The participants in this study were first year students enrolled in the Bachelor of Science in Marine Transportation Program of JBLCF-Bacolod. Four intact sections were selected prior to the experiment where two were randomly assigned as the control groups representing both scholars and non-scholars. The control groups were composed of 19 students (scholars) and 38 students (non-scholars) respectively. Another two classes were assigned as the experimental groups. The first group was composed of 36 students (scholars) and the second having 38 students (non-scholars). The selection was made in such a way that the experimental groups match with their control group counterparts in terms of mental ability. This was done on the basis of their weighted average during their first semester with the school.

2.3 Instruments

The instrument on Resilience Quotient by Russell and Consulting[13] was used to determine the RQ of the participants. The instrument has eight components namely: self-assurance, personal vision, flexible and adaptable, organized, problem solver, interpersonal competence, socially connected, and proactive. The maximum score for each of the components of RQ is 24. In addition, the instrument used for the pretest and posttest was a form of an achievement test prepared by the experimental teacher and validated by three other experts in the field. It was intended to measure the academic performance of the participants before and after the intervention. The other instrument used was a summative test consisting of a total of 60 multiple-choice items.

2.4 Statistical Tools

Mean was used to determine and compare the scores of the students in the eight components of RQ as well as their performance in the pretest, post-test, and summative test. To compare the scores of the experimental and control groups in the eight components of resilience, the t-test for dependent and independent samples were used.

3. Results and Discussion

Figure 1 compares the RQ scores of the control group of scholars before and after they were taught using the traditional method.

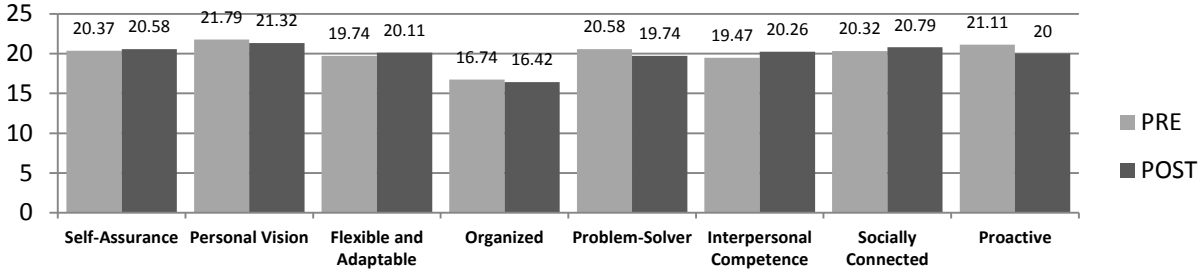

Figure 1 *RQ* Scores of the Control Group (Scholars)

Among the eight components, the control group of scholars who were taught using the traditional method improved their scores in only four components: self-assurance, flexible and adaptable, interpersonal competence, and socially connected. Their scores for personal vision, organized, problem-solving, and proactive declined after the intervention. It is surmised that since they were taught using the teacher-dominant mode of instruction where the teacher ruled the floor for most of the activities, their skills on these aspects were not maximized and activated. Too much reliance and dependence on the teacher could have created a passive attitude on their part in the teaching-learning process thereby affecting their level of resilience especially on the said components. Figure 2 compares the RQ scores of the experimental group of scholars before and after they were exposed to the intervention, that is, the use of collaborative learning in small group discussions.

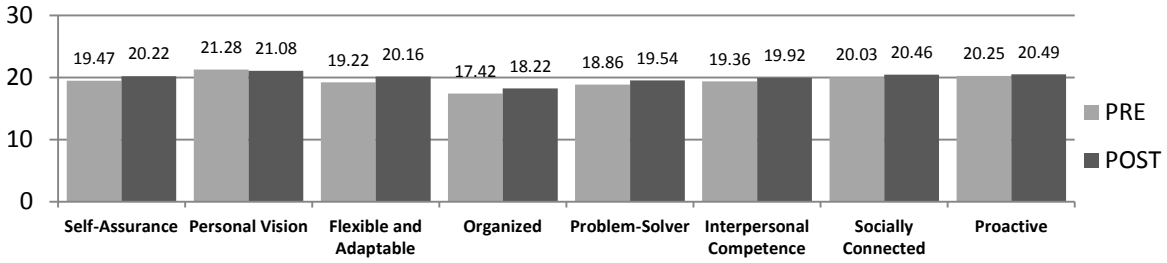

Figure 2 *RQ* Scores of the Experimental Group (Scholars)

Except for personal vision, the group of scholars who were exposed to the intervention showed improvement in all the other seven components of the *RQ*. This could mean that the intervention has created a positive impact on their level of resilience. The decline in their score for personal vision could possibly be due to their experience in working with their groups. As they began to work as a team, their perspective could have changed in that they were thinking more in line with their group's goals rather than just their personal interest in the learning process.To examine further, results were compared between the control groups and experimental groups of non-scholars. More interesting observations were noted in the data. Figure 3 compares the *RQ* scores of the control group of non-scholars before and after they were taught using the traditional method.

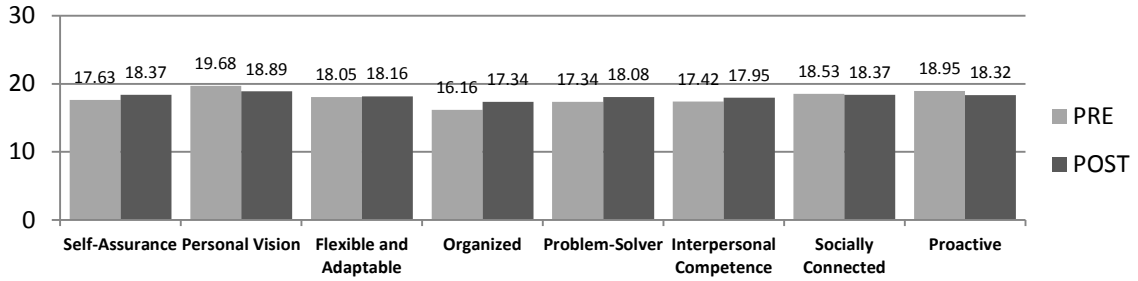

Figure 3 *RQ* Scores of the Control Group (Non-Scholars)

Among the eight components of RQ, the control group of non-scholars improved in terms of self-assurance, flexible and adaptable, organized, problem-solver, and interpersonal competence. This means that exposing them to the traditional method has positively improved their level of resilience in these components. A decline however was noted in terms of personal vision, socially connected, and proactive. The control group of non-scholars showed some improvement on the aspects of problem-solving and organization. This could imply that since the approach was more teacher-oriented rather than student-centered, each student was left to cope with the lessons presented while tapping his own resources; hence, becoming more organized and analytical in the whole process of learning. It is also possible that the teacher could have used other strategies which could have influenced the development of these aspects of their *RQ*.

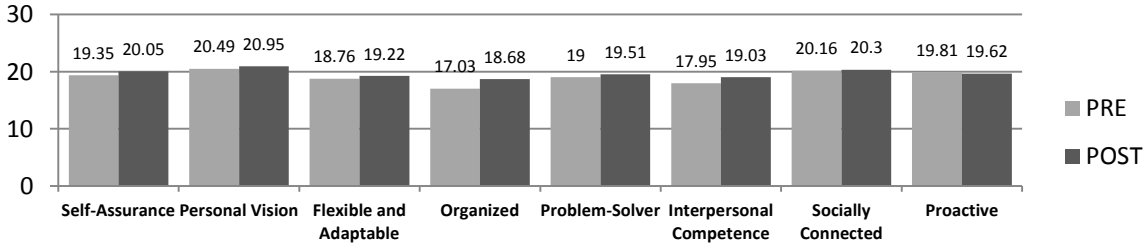

Figure 4 *RQ* Scores of the Experimental Group (Non-Scholars)

The experimental group of non-scholars who were exposed to the intervention showed improvement in the seven components of their *RQ* except on being proactive where a slight decrease was noted. Figures 3 and 4 also reveal that both control and experimental groups of non-scholars have declined in their level of proactive involvement. This lower level of assertiveness could be due

to their not being scholarly. In the classroom, whatever the teaching method is, low-performing classes are normally quiet and dependent on the cues given by the teacher especially when exposed to very challenging tasks and in the present study, even the intervention did not really effect a positive change on this aspect.

To test if there is a significant difference in the scores of the control groups and experimental groups in the eight components of RQ before the experiment, a comparison was made between groups of scholars and between groups of non-scholars using the t-test for independent samples.

Table 1*T-test showing the means and standard deviation in the eight components of RQ of the control group and experimental group before the intervention (between groups of scholars)*

Components of*RQ*	N	Mean	sd	t	df	Sig. value
Experimental	36	19.47	2.26			
Self-Assurance				1.45	53	.153
Control	19	20.37	2.01			
Experimental	36	21.28	1.98			
Personal Vision				1.161	50.76	.251
Control	19	21.79	1.27			
Experimental	36	19.22	1.71			
Flexible & Adaptable				.710	24.76	.484
Control	19	19.74	2.90			
Experimental	36	17.47	2.82			
Organized				.874	53	.386
Control	19	16.74	3.23			
Experimental	36	18.86	2.88			
Problem Solver				2.27	53	**.027***
Control	19	20.58	2.19			
Experimental	36	19.36	2.31			
Interpersonal Competence				.171	53	.865
Control	19	19.47	2.37			
Experimental	36	20.03	2.58			
Socially Connected				.388	53	.700
Control	19	20.32	2.69			
Experimental	36	20.25	2.43			
Proactive				1.38	53	.175
Control	19	21.11	1.63			

α< .05, significant *

Between the groups of scholars (Table 1), the control group significantly appeared to be better problem-solvers than the experimental group. For the rest of the components, the two groups showed comparable results. Between the groups of non-scholars (Table 2), a significant difference in scores in favor of the experimental group was notedin terms of self-assurance, problem-solver, and socially connected.

Table 2*T-test showing the means and standard deviation in the eight components of RQ of the control group and experimental group before the intervention (between groups of non-scholars)*

Components of *RQ*	N	Mean	sd	t	df	Sig. value
Experimental	37	19.35	2.21			
Self-Assurance				3.11	73	**.003***
Control	38	17.63	2.55			
Experimental	37	20.49	2.24			
Personal Vision				1.33	73	.189
Control	38	19.68	2.94			
Experimental	37	18.76	1.59			
Flexible & Adaptable				1.55	65.86	.127
Control	38	18.05	2.30			
Experimental	37	17.03	2.32			
Organized				1.40	69.24	.166
Control	38	16.16	3.02			
Experimental	37	19.00	2.33			
Problem Solver				2.68	73	**.009***
Control	38	17.34	2.97			

Experimental	37	17.95	3.56			
Interpersonal Competence				.719	73	.474
Control	38	17.42	2.72			
Experimental	37	20.16	2.77			
Socially Connected				2.66	73	**.010***
Control	38	18.53	2.54			
Experimental	37	19.81	2.20			
Proactive				1.64	73	.106
Control	38	18.95	2.37			

α< .05, significant *

After the 8-week intervention, a retest on RQ was administered and the following results were revealed.

Table 3*T-test showing the means and standard deviation in the eight components of RQ of the control group and experimental group after the intervention (between groups of scholars)*

Components of *RQ*	N	Mean	sd	t	df	Sig. value
Experimental	37	20.22	2.33			
Self-Assurance				.548	54	.586
Control	19	20.58	2.36			
Experimental	37	21.08	2.22			
Personal Vision				.363	54	.718
Control	19	21.32	2.43			
Experimental	37	20.16	2.25			
Flexible & Adaptable				.091	54	.928
Control	19	20.11	2.13			
Experimental	37	18.22	2.94			
Organized				2.15	54	**.036***
Control	19	16.42	2.99			
Experimental	37	19.54	2.95			
Problem Solver				.242	54	.809
Control	19	19.74	2.70			
Experimental	37	19.92	2.17			
Interpersonal Competence				.558	54	.579
Control	19	2026	2.23			
Experimental	37	20.46	1.95			
Socially Connected				.552	54	.583
Control	19	20.79	2.42			
Experimental	37	20.49	2.12			
Proactive				.793	54	.431
Control	19	20.00	2.86			

α < .05, significant *

A significant difference in favor of the experimental group was noted in the scores of the groups of scholars in terms of organizing skills. This means that their exposure to the intervention has significantly improved this component of their *RQ*. It should be recalled that before the intervention, the two groups scored comparably in this particular component. Another interesting observation is that before the intervention, it was found out that the control group significantly appeared to be better problem-solvers than those in the experimental group. After the intervention, the difference is not anymore significant. This is a remarkable progress because it appears that as problem-solvers, the experimental group has leveled up with the control group where before they appeared inferior.

For the groups of non-scholars, results of the retest on RQ after the intervention as shown in Table 4 reveala significant difference in terms of the following components: self-assurance, personal vision, problem-solver, socially connected, and proactive. For the rest of the components their scores are comparable. It should be remembered that before the intervention, the experimental group of non-scholars significantly scored better than the control group in terms of self-assurance, problem-solving skills, and social connection. After the intervention, they were able to maintain this advantage and in addition, significantly did better than the control group in terms of personal vision and pro-active skills. It is clear that the intervention has improved the extent of their resilience.

Table 4*T-test showing the means and standard deviation in the eight components of RQ of the control group and experimental group after the intervention (between groups of non-scholars)*

Components of *RQ*	N	Mean	sd	t	df	Sig. value
Experimental	37	20.05	2.24			
Self-Assurance				2.96	73	**.004***
Control	38	18.37	2.67			
Experimental	37	20.95	2.08			
Personal Vision				3.09	73	**.003***
Control	38	18.89	3.48			
Experimental	37	19.22	2.08			
Flexible & Adaptable				1.75	65.26	.085
Control	38	18.16	3.07			
Experimental	37	18.66	2.79			
Organized				1.79	73	.077
Control	38	17.34	3.59			
Experimental	37	19.51	2.74			
Problem Solver				2.24	73	**.028***
Control	38	18.08	2.79			
Experimental	37	19.03	2.46			
Interpersonal Competence				1.58	73	.119
Control	38	17.95	3.38			
Experimental	37	20.30	2.23			
Socially Connected				3.33	73	**.001***
Control	38	18.37	2.75			
Experimental	37	19.62	2.38			
Proactive				2.20	73	**.031***
Control	38	18.32	2.73			

α< .05, significant *

Tables 5 and 6 present the scores of the control and experimental groups in the pretest, posttest, and summative test between the groups of scholars and non-scholars.

Table 5*T-test showing the means and standard deviations in the pretest, posttest, and summative test of thecontrol group and the experimental group (between groups of scholars)*

Group	N	Mean	sd	t	df	Sig. value
Experimental	38	39.61	4.51			
Pretest				2.82	55	**.007***
Control	19	43.42	5.37			
Experimental	38	47.42	3.53			
Posttest				4.06	55	**.000***
Control	19	51.53	3.75			
Experimental	38	39.92	4.79			
Summative				.019	55	.985
Control	19	41.32	3.15			

α < .05, significant *

It can be observed in Table 5 that the control group has significantly scored higher in both the pretest and post-test. Data further reveal that their scores in the summative test did not significantly differ. One possible explanation to this is that because the number of students in the control group was much smaller, a semi-individualized form of instruction could have been made possible in a teacher-controlled class setting. Students could have been given ample time to interact and to clarify the lessons with the teacher. The comparability of their scores in the summative test could be an indication that the initial advantage on mental ability of both groups of scholars is a big factor in determining their success in class.

Table 6*T-test showing the means and standard deviations in the pretest, posttest, and summative test of thecontrol group and the experimental group (between groups of non-scholars)*

Group		N	Mean	sd	t	df	Sig. value
Experimental		38	34.53	5.53			
Pretest					1.93	76	.057
	Control	40	31.93	6.31			
	Experimental	38	42.21	6.36			
Posttest					2.37	76	**.020***
	Control	40	38.73	6.63			
	Experimental	38	36.76	4.99			
Summative					4.10	76	**.000***
	Control	40	32.45	4.84			

$\alpha < .05$, significant *

Results in Table 6 show that both control and experimental groups of non-scholars have started off on the same level before the intervention. This was revealed by their scores in the pretest. It is interesting to note however that after the intervention, the scores of the experimental group appeared significantly higher compared to those in the control group both in the posttest and the summative test. This raises a point that the intervention has significantly improved not only the level of resilience of the students but also their academic performance.

4. Conclusion

Students who have high resilience quotienthave their own way of coping with the lessons, so they could readily adapt to the absence or the inclusion of any form of instructional intervention. When compared to the traditional method where the teacher plays a major role as the lead actor in the teaching and learning process, using the collaborative learning approach in small group discussions can strengthen the students' resilience and can be an effective approach in developing specific components such as organizing skills, self-assurance, problem-solving skills, social connectedness, and proactive skills.The method can also create a significant impact on test scores of students particularly among those who are not academically advanced. Initial evidence from this study however revealed that some aspects of resilience, specifically on organizing skills and problem-solving skills, take some time to develop. It is possible though that given a longer span of time for the intervention, they could also hone these skills to a higher level. Too much dependence on the teacher as the main source of learning in the traditional approach could lead to some decline in personal vision. Since students are dependent on the instruction that takes place and not much is really expected on their part, they tend to develop a passive attitude thereby lowering their sense of personal vision. Moreover, it was also noted that attaining a high RQ can also be related to other factors, one of which is the teacher.This was evidenced by the improvement of the control group in some components of the RQ even without exposure to the intervention. Findings of this study supported the earlier assumptions that using the Collaborative Learning approach by engaging the students to small group discussions could significantly improve not only the level of resilience of the students but also their academic performance.

5. Recommendations

Findings from the study have highlighted several pedagogical issues. First, it is important to capitalize on tapping the affective domain in the teaching and learning process by providing a protective work climate between and among the teacher and the students. This means establishing a connection which nurtures a caring and supportive relationship to promote a more effective learning process. Second, it is important to emphasize that instructors must be role models of resiliency. They should help create an atmosphere which promotes expression of ideas by all members of the class who perform their complementary roles for the attainment of group goals. This sense of assertiveness and spirit of working together is paramount in preparing the cadets for the actual nature of their job and work environment. This focal turn on "training in leadership and teamwork" is supported by one of the changes in the major components of the STCW 78/95 convention made in June of 2010 that was also highlighted by Ungureanu-Chirea & Constantinescu [14] in their paper "*Ways to Implement STCW Manila for Training in Leadership and Teamwork"*(IAMU AGA 14). STCW 2010 provides

among its requirements to non-technical skills the application of "leadership and team working skills"(Reg. A-II/I, A-III/I and A-III/6). It is also recommended that the university should underscore thevalue of meeting the standards of expectation of the maritime industry.In helping the students achieve this, they must hold a strong belief on their students' innate capacities, provide them more challenging tasks, offer them support when needed, focus on strengths instead of weaknesses, and promote a student-centered instruction to encourage individual participation in a collaborative atmosphere. Instructors should empower their students to take responsibility by allowing them to work interactively with others in the class, reflect, think critically, and express their opinions openly.

While a multitude of studies on collaborative learning have been conducted over the years, it is recommended that this method should be further explored in different contexts across disciplines. Further research must be done on resilience of seafarers with particular attention to the following components: Interpersonal competence, social connectedness, proactive attitude, self-assurance, personal vision, flexibility, ability to organize, and problem-solving skills as all of these components play a very crucial and functional role onboard ship.

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