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Opportunities and Challenges of Collaborative Learning Activities in the New TVET program: the Case of St. Mary's University College

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Abstract

As per the Higher Education Proclamation of Ethiopia (2003) teaching is required to be student-centred and practice-oriented through hands-on training at different levels of the higher education program. In this regard, collaborative learning activities have become important instructional strategies in many colleges and universities across the country. The objectives of this study are two fold: 1) assessing opportunities and challenges of collaborative learning activities in the new TVET program based on the perception of students and 2) examining the impact of personality styles and group dynamics on the perception of students about collaborative learning. Using questionnaires administered to a total of 116 randomly selected students of the extension division at St. Mary's University College, primary data were analyzed using different statistical techniques such as frequencies, descriptive, Chi-Square and ANOVA. Results suggest that not only is a collaborative learning activity important for the students' personal development, but also vital for their professional career. At its weakest, however, collaborative learning activity is subject to slacking-a situation of idling and a short-cut and easy access to better marks, which not only lowers the enthusiasm of diligent students but also impedes collaborative learning activities from achieving their goals. This suggests that instructors should avoid lenience in forming the appropriate grouping type beforehand. They should also consistently follow up their students and employ fair evaluation scheme for group projects. Last but not least, findings of this study suggest that encouraging positive collaborative learning experiences through team learning methods (such as effective communication activities, process learning exercises and graded feedback) is essential in order to attain the best out of collaborative learning activities.

Key words: collaborative learning, TVET, personality style, group dynamics, St. Mary's University College

INTRODUCTION

In order to make students become problem-solving professional leaders in their fields of study and in overall societal needs, the Higher Education proclamation of Ethiopia, which was approved by the parliament in 2003, is required to be student-centred, society-focused, and practice-oriented through hands-on training at diploma, degree and graduate levels (Yizengaw, 2003). In this regard, collaborative learning activities (group project works) have become important instructional strategies in many colleges and universities of the country. Given the higher number of students in one class and the demanding nature of the work for instructors to check all the activities of students, group projects are usually preferred (instead of individual assignments) with the assumption that students learn from each other. For instance, Watson (1992:84) argues that group projects allow "*students to learn by doing rather than listening*."

As the major objective of the TVET program is to provide students with fundamental skills and prepare them for the work environment outside colleges and universities, 70% of the teaching-learning activity constitutes practical work by students, while the remaining 30% is theoretical part offered in class by teachers. Course-based group projects (collaborative learning, in this study) are and parcel of

the practical activities, which are recently becoming increasingly an important teaching-learning strategies of higher education institutions.

Blowers (2003) is of the opinion that group projects are often pre-requisites for employment, in which graduates should be well-trained. Research works also indicate that employers significantly value skills in team work (Luca and Torricone, 2001). As a result, they prefer students who have team spirit and are ready to join groups. In Ethiopia, in order to be able to harness this advantage of group projects, it has become essential to foster effective collaborative learning activities in colleges and universities. In fact, several course-based projects have been offered to students at a college and university level including St. Mary's University College. However, to what extent these collaborative learning activities enhance students' team work skills is still an issue worth studying. Empirical studies are also scanty to suggest that group projects have met their intended purposes. Therefore, this study is envisaged to fill what is an important gap in the literature by assessing the perception of students (taking those enrolled in the extension program as a case study) about the role of collaborative learning activities in enhancing their education in general and team spirit skills, in particular. Therefore, the objectives of this study are two fold: 1) to assess the merits and demerits of group projects of the TVET program based on the perception of students, 2) to examine the impact of personality styles and group dynamics on the perception of students about collaborative learning.

Why collaborative learning?

Definition of collaborative learning

Several authors define collaborative learning (group projects) in different ways. According to Colbeck, et al. (2000), group projects are collaborative and active learning activities that enable students work together so that they can be able to solve problems together or create a project based on realities on the ground. They define collaborative learning as an instructional practice that encourages "students to work together as they apply course material to answer questions, solve problems, or create a project''. Millis and Cottell (1998) on the other hand, consider collaborative learning as "more structured" and "more focused" learning activities, which according to Watson (1992:84) allow "students to learn by doing rather than listening (p.4)." In this study, collaborative learning activity and group project are used synonymously.

The role of collaborative learning

From collaborative learning activities (group projects), a convincingly high quality learning outcome could be attained provided that teachers and students have good knowledge about factors to be considered while forming groups. According to an article by the University of Wollongong assessment policy (2002), "Group work, under proper conditions, encourages peer learning and helps students acquire knowledge. If students get an opportunity to learn from each other in group projects and collaborative learning approach, they will get a better opportunity to learn."

As indicated in the introductory part, many colleges consider group projects as a central feature of their teaching strategy. Several studies suggest that there are multiple rationales for engaging students in group activities. For instance, CSHE (2002) indicates that group projects promote leaning and help

students acquire knowledge beyond the traditional subject specific information, as all rounded knowledge is not some thing that could be acquired in the traditional teacher dominated classroom. Thus, group projects which are conducted by students both inside and outside the classroom serve significant educational purpose in terms of scaling up students' all rounded knowledge and social interaction skills. These skills could help them much even in their after school life. As Morris (2004) puts it, group projects promote innovation, research and push the boundaries of pedagogical practice.

On the other hand, Christon (1990:146) asserts that creating cooperative setup among students in the final analysis "showed a significant positive effect on student learning''. Apart from promoting meaningful peer learning and pushing the traditional boundaries of the pedagogical norm, group activities are recognized to be opportunities which build up students' self-esteem, according to researchers such as Blaney et al. (1997), Geffaer (1978), Slavin and Karweit (1979), and Dickie (1980) as cited in Christison (1990). This is because since group members in the process of collaborative learning will have a meaningful contribution to the group without any direct instructor's involvement or other authority's imposition, their self-esteem gets enough ground to prosper.

Cooperative learning opportunities in this regard can be opportunities which can boost the psychological strength of learners, as students will feel that they have got something worthwhile to contribute to the educational process at large which can, in turn, give them confidence in their own potential.

On the other hand, as Cohen (1986:1) states, in group activities,

> …students learn to depend on one another rather than depending exclusively on the authority of the teacher. They learn to construct knowledge as it is constructed in the academic disciplines and professions-the knowledge communities that students aspire to join when they attend colleges and universities. And they learn the craft of interdependence.

Panitz (1982) describes the external imposition of an authority for the formation of concepts as passive information channel which often promotes helplessness and reliance upon others on students.

Major problems of collaborative learning

The effectiveness of group projects can be deterred by several factors. According to Camp (1997), the difference among the paces of group members as well as possible attempt by one or few group member(s) to dictate the entire group is a threat which negatively influences the effectiveness of group projects. According to the Natural Institute for Science and Education (1997:1) "sometimes nothing gets done because everyone is talking about everything but what they are supposed to be doing!" In situations of this type, the freedom group members enjoy in group activities may lead them to abuse their freedom, making unnecessary and irrelevant talk that adds no value to the duty at hand. As a result, some group members will naturally tend to develop such a negative attitude towards the reliability and fairness of the very idea of group assignment or collaborative learning, in general.

Not only these, the writer also considers personality barriers which restrict a participant from getting along with the group, and the presence of a slacker-lazy member in a group, to contribute a lot to the mal-effectiveness of collaborative learning and group projects. As it is well-known, group projects are

meant to create chances of collaborative learning where fairness and proportional contribution among group members is expected. Otherwise, the underlying objective of such an educational setup could go in astray-become unfair, mal-effective as well as a waste of time. According to National Institute for Science Education (1997:1) "Sometimes people just do not get along; no matter how hard they try, their personalities clash"

Basic considerations to be made in group activities

Good cooperative learning atmosphere is not something to be acquired for granted. In order to attain a high-quality learning outcome from collaborative learning, students and teachers should be very careful in considering all factors required to form effective study group. Marcus (2009) considers these factors as 'subtle' which require instructors' careful consideration so as to create a successful collaborative learning setup.

Instructors should obviously play their own vital role in creating the appropriate study team whose groups are industrious and duty-oriented. They can ensure that the group members of a certain assignment are logically organized. Marcus (2009), states that there are three major types of grouping for collaborative learning-homogeneous, heterogeneous and random.

Ford and Morice (1995) recommend instructors to collect information such as a mini Cv from their students which highlight their skills, experiences or interests. This type of information could give a meaningful clue for the instructor regarding as to how he could best help the productivity of his students' grouping.

Forming a homogeneous study team for instance could help to meet the fundamental purposes of group work- getting the group activity done duly. For instance, students who have got a special interest in Auto Mechanics can form a group and prepare a group presentation that can demonstrate the major components of an Auto-mobile. However, the issue of forming a heterogeneous study team could also be an important issue in the realm of collaborative learning. Group members could be heterogeneous in terms of their area of interest or academic level.

Creating a homogeneous group with respect to students' academic competence, according to Marcus (2009), could help students negotiate social interaction as this type of group has students who belong to different level of academic competence.

Marcus (ibid) states that both homogeneous and heterogeneous study groups have their own disadvantages. For instance, if a certain class has homogeneous study group in terms of the group members' academic potential, those groups which have homogeneous competent members could utterly outshine their opposites. That would very likely create dissatisfaction on the part of the homogeneous groups which have less academically competent members. This intern degrades the self-esteem of students and can be a cause for embarrassment and restricts students' effort in collaborative learning.

When we come to the disadvantage of a heterogeneous group, the fast learner in such a group might feel impatient to put up with that of the slow learner and take up the lion share of the group activity all by himself. Here, it has to be noted that this type of learner couldn't manage to get the benefit of collaborative learning as he has essentially engaged himself in an individual activity. Likewise, the slow learner will have to go idle and miss important learning opportunities which could be acquired along the process of collaborative learning.

Probably, even the least systematic and demanding approach, random grouping could also have its own advantage in that students may feel relaxed about their group as it is not imposed by their instructors(Marcus 2009) .This seems to be the reason why CSHE (2002) underscores that the best grouping model depends much on the context as one approach might be fit for a specific context while it might prove failure for the other. Nevertheless, the fact that this universal grouping model is non-existent cannot be an excuse for instructors' overlooking their involvement in their students grouping process. Close and critical scrutiny of students would be quite essential in order to form any of the three types of groups for a group activity. This type of grouping could be considered as logical study team which can exploit the benefits of collaborative learning to the maximum level.

MATERIALS AND METHODS

The data we used for this study stem from primary source. Questionnaires were used to collect the data from a total of 116 randomly selected students from four departments of the extension division at St. Mary's, namely; SSOM, Marketing, IT and Law. 35 students from each department were randomly picked totalling 140, but 116 valid cases were obtained for the final analysis.

Once the data were collected, they were entered into SPSS and were analyzed using different statistical techniques such as frequencies, descriptive, Chi-Square and ANOVA. The first two are used to identify the number of respondents or the amount of value students attach to a particular question. On the other hand, Chi-Square test is used to statistically measure the difference in the association between variables of interest, whereas ANOVA is used to gauge mean differences among values respondents indicate.

RESULTS AND DISCUSSION

Personality Styles

There are several personality styles one may need to consider. Tracom's Social Style Model (2006) identifies two types of human behaviour: assertiveness and responsiveness. For our study purpose, based on the extent to which students are assertive or responsive, four types of personality styles are identified, namely; analytical, driving, expressive and amiable. Analytical students are less assertive and less responsive, whereas students with driving personality style are more assertive and less responsive. On the other hand, while expressive students are more assertive and more responsive, amiable students are less assertive but more responsive. Snyder and McNeil (N.D) indicate that less assertive students always ask their group members the type of activities they should do. But students who are more assertive dictate their group members which direction they should take. By the same

token, to be able to control emotions has something to do with responsiveness. Thus, less responsive students can be able to control their emotions, while more responsive students usually fail to control their emotions.

Students were asked which personality styles they have. Results of descriptive statistics reveal students' personality type as acquired through the questionnaire administered to them. Here, we can see that the majority of respondents (57.8 %) fall under the category of Expressive personality styles. This shows that, the majority of the respondents are more responsive, i.e., quick in reacting in the way that is needed and willing enough in responding to questions. In other words, they are able to react and defend their viewpoints with confidence.

Results further indicate that the number of respondents who have driving personality (more assertive and less responsive), is the second biggest, that is 17.4%. Students in this range are not quick enough in giving responses, which might reflect their modesty. This might show that these students are not easily manipulated or do not let their important ideas go and are not highly sociable and expressive. They might also be economical in their verbal responses but not as such reserved when they have got a point to assert. The implication is that the type of personality styles students exhibit determines the success of a group project work.

Group dynamics

Whether groups were dynamic or not were assessed using three criteria: 1) whether group members were cohesive, 2) whether members could work in harmony without instructor's direct support and 3) whether groups were heterogeneous (in terms of age, academic performance, social background and dedication). They were analyzed using simple frequency distribution and ANOVA. Results of ANOVA (Annex 1) show that the observations of students are not all positive with regard to group dynamics. While asked to indicate a value ranging from 1 (strongly disagree) to 5 (strongly agree), the mean values fall between 3.41 and 3.85 for all students taken together. But disaggregated data indicate that students with expressive personality style report a more positive observation. Respondents of this personality style agree that groups to which they belonged were cohesive (4.08) and heterogeneous (3.98). On other hand, descriptive statistics draw information regarding the degree of cohesion student respondents have in the group projects they usually find themselves in. Results reveal that the vast majority of the respondents (about 68.8 %), indicated that they usually become partner of a group project that is cohesive- a type of group with strong cooperative work sprit. This shows that most of the students are usually satisfied with the cohesive nature of the group they usually belong to while doing group projects.

Like the information we have in the level of group cohesiveness, the majority respondents (53.4%) label the type of groups they usually find themselves in to be harmonious. Yet, 25 % respondents, the second in this category, labelled the size of harmony their groups usually have at a medial level. This response seems to mismatch with the one we have for the cohesiveness of their group. Only 14.7 % respondents labelled the group cohesiveness of their group projects at a medial level, giving it three grades. This shows that although respondents appear to be satisfied with the cohesion of the group, they do not seem to be as such satisfied with their group's harmony.

The significant majority of respondents (68.1%) in this category agree that the group they find themselves in collaborative learning to be heterogeneous. As the majority of the respondents indicated their groups are usually cohesive and harmonious which reflects the healthiness of the grouping, heterogeneity seems to be the ingredient for the aforementioned categories. The fact that the groups are usually heterogeneous in multiple dimensions might have created harmony and cohesion in most of the group works students involved in. That intern may show that heterogeneous group could be students' favorite grouping strategy.

IMPORTANCE OF GROUP PROJECTS BASED ON STUDENT'S PERCEPTION

Importance of group projects for education

Results of frequency distribution tables provide useful information whether students agree that group activities help them for their education. A very interesting result is that although the majority of students are convinced in the opinion that group activities are more of time wastages, they are not ruling out the educative power these types of activities possess. The majority of respondents, more than 76% of them, believe that group projects usually serve the purpose of their education. Only the significant minority respondents, (less than 10 %) argue otherwise. This result corroborates with findings of Colbeck *et al* (2000).

Results of ANOVA also reveal similar patterns. With a mean value of 4.4 and 4.0, respondents with expressive and amiable personality styles agreed that group projects are helpful to their education. In fact, students with analytical and driving personality styles were somehow neutral to this question with a mean score of 3.6 each in a Likert scale measurement.

The mean difference among these values is statistically significant at 5% level ($P < 0.05$). Results from Chi-Square tests also offer similar observations. While 80.9% and 83.3% of respondents with expressive and amiable personality styles, respectively, give high values for the importance of group projects for their education, 60% and 63.1% indicate that collaborative learning activities are important for their education.

Respondents also believe that group projects are identical ways of collecting easy marks. About 40 % of them are in favour of this opinion, while 19% of them moderately agree with the opinion mentioned. This might be a good indicator that there are many students who might not exert the level of effort that is expected to be spent on collaborative learning environment.

From these findings, we are disposed to make varieties of deductions. Does the value students give for group projects depend on the type of personality they belong to? Yes it does. As indicated above, students with expressive and amiable personality styles give more value to group projects importance to their education than their counterparts. Probably, students with analytical and driving personality styles might have expected group activities to be more educative than that of the level they appear to be now. That means, although they agree with the opinion that group projects are usually educative, they might not have found them to be as much productive as they expected them to be. For instance,

the time it takes to get a specific knowledge in group activities might not be economical compared with the knowledge acquired according to the respondents' discretion.

Importance of group projects for socialization

The overwhelming majority of student respondents (more than 80%) are of the opinion that group projects have a significant positive contribution to their study experience. This shows that the majority of respondents consider group activities, as opportunities in which they can experience a distinctive study approaches. The fact that heterogeneous groups are usually favoured by students might have contributed much to the good study experience group members get during collaborative learning activities. Because of group heterogeneity, they might have been encouraged to ask questions from members who have better academic potential, have distinctive specialty or interest as well as possess different personality type. Given the cooperative nature, the positive spirit to help each other, and the group harmony of the respondents is sound, according to the findings we have thus far, it would be meaningful to deduce that these heterogeneous group members are free to share ideas in a way that could create sound study experience. This was confirmed by a mean score of 4.3 (for expressive students) and 4.0 (for pooled data). This is a very important impact of collaborative learning activities to enhance students' interpersonal and communicative skills, which are vital in this competitive and dynamic world. The result of this study is in line with the findings of Synder and McNeil (N.D).

With regard to students' response whether collaborative learning is helpful to their after work life, more than 68% of respondents indicated a positive response. Results from ANOVA also corroborate with the aforementioned findings (for instance, a mean value of 4.06 for students with amiable personality styles). On the other hand, the overwhelming majority of respondents (more than 70 %) strongly agree that group projects enable them help each other. These results bear out with findings of Payne and Mok-Turner (2006).

Chi-Square tests also depict that 66.6%, 77.8% and 61.8% of respondents with analytical, expressive and amiable personality styles agree (or strongly agree) that group projects help them socialize with other students, but 42.1% of respondents with driving personality do not agree that the case is so. This might emanate from the behaviour of the students themselves in that they are more reserved and hence, are less likely to socialize. These differences are statistically significant at 5% level ($P < 0.05$). When we consider the pooled data, we observe that 69.4% of the respondents highly value the importance of group projects for socialization.

Problems students encounter while doing group projects

There are several problems students may face while doing group projects. According to the findings obtained from our study, we have learnt that students' responses depend on their personality styles. For instance, while the vast majority of respondents with amiable personality (75%) and half of the respondents with expressive personality trait grumble that they have usually found themselves in groups where slackers prevail, only 40% and 36.9% of respondents with analytical and driving personality styles agree that the case was so. This throws clear picture as to the extent to which personality styles influence the way students evaluate their group from the perspective of how evenly and fairly group members share responsibilities in group projects. These differences are statistically

significant at 5% level ($p < 0.05$) in a Chi-Square test. The results of this study support the findings of Payne and Monk-Turner (2006).

Results of descriptive statistics show that while there was a group member who usually assumes the lion's share of the group activity, there was an individual in that group who usually sits back and relaxes while the rest of the members are toiling, though to various levels of effort. This is unhealthy to an effective collaborative learning environment. Thousand *et al.* (1994) indicate that the effectiveness of group projects highly depends on whether each member considers its contribution to the group to be crucial for the success of the group.

The majority of respondents (more than 51 %) unpleasantly reveal that the lion's share of the activities usually goes to one group member only. In fact, this was supposed to be taken evenly among group members. This might indicate that students might not be duly aware of what is meant by helping each other in collaborative learning activities. Some may assume that their mere physical presence in a scheduled meeting may help. But, if their contribution to the actual work is very limited, then they are slackers. Others may also merely coordinate group tasks without directly involving into the business. This is also another aspect of being a slacker. According to Payne and Monk-Turner (2006), this kind of "pulling weight" dampens other group members' enthusiasm in working hard in collaborative learning environments.

Another problem worth mentioning is whether instructors duly correct group projects and assign 'fair' values. Although about 23 % respondents gave average mark for the opinion that those teachers usually correct group projects properly, the majority of respondents (51.7%) of them indicated that they disfavour the idea that group projects are corrected well by their instructors. This reveals that this could be one reason, coupled with teachers' lenience in correcting group activities properly, which lead the majority of students to believe that group activities are identical ways of collecting easy marks.

According to the data we have, 45 % of respondents indicate that they lack confidence while engaging in collaborative study activities and/or group projects. However, the findings we have here do not match with the type of personality styles the majority of students exhibit. It is to be recalled that about 58 % of respondents in the previous discussion stated that they are more assertive and more expressive, which reflects their confidence. From these findings, however, we might conclude that apart from the personality type the majority of students naturally have, we might see some other factors working against the confidence of students while involving in group activities. It would be important to stress once again that lack of confidence during group activities appears to be a typical to the majority of students' behaviour (expressive-more assertive and more expressive).

CONCLUSIONS

Not only is a collaborative learning experience important for the students' personal development, but is also vital for their professional career. In this regard, as supported by findings of this study, encouraging positive collaborative learning experiences through team learning methods (such as effective communication activities, process learning exercises and graded feedback) is essential in

order to prepare students for real-world team work environments. Also, results of this study reveal that group projects (collaborative learning activities) have several merits such as enhancing students' education ,developing their interpersonal , communicative and team work skills their by helping them to socialize. At its weakest, however, collaborative learning is subject to slacking-a situation of idling but is a short-cut and easy access to better marks. It should be noted that when students consider group activity as a means of easy access to better marks, it could make them prefer the activity no matter how valid it could turn out to be to their education in general. This definitely not only lowers the enthusiasm of diligent students but also impedes collaborative learning activities from achieving their goals. This suggests that instructors should avoid lenience in forming the appropriate grouping type beforehand. They should also consistently follow up their students along the way. At the same time, they should employ fair evaluation scheme of group projects.

REFERENCES

Blowers, P. (2003). Using Student Skill Assessments to get balanced groups for group projects. *College Teaching*, 51(3): 106-110.

Center for the study of Higher Education (2002).Assessing Group Work, http:/group.html

Christison, M.A(1999). "Cooperative Learning in the EFL Classroom" *Journal of* Selected Articles from the English Teaching Forum,1983-1993, 139-147

Cohen, L, Manion, L and Morrier, K (2004) A Guide to Teaching practice-5th edition, Great Britain :St. Emundsuby Press Ltd

Colbeck, C.L, S.E. Cambell, and S.A. Bjorkland (2000). "Grouping in Dark." *Journal of Higher Education*, 71: 60-78.

Ford,M and Morice,J (2003). How fair are Group Assessments? A Survey of Students and Faculty and a Modest Proposal: Informing Science and IT Education Conference, Finland: Pori

Luca and Torricone, P. (2001). Does emotional intelligence affect successful teamwork? *Proceedings of the Annual Conference of the Australian Society for Computers in Learning in Tertiary Education*, 18(December 9-12).

Marcus,R.(2009).Observation on Cooperative –Learning Group Assessment, Department of Philosophy, Hamilton College

Camp, M. (1997). Teaching Stories, National Institute for Science Education-College Level

Millis, B.J. and P.G. Cottell (1998). A cooperative Learning for Higher Education Faculty. Westport, C.T: American Council on Education Series on Higher Education and Oryx Press.

Panitz, T. (1982). "Group Composition, Group Interaction, and Achievement in small groups". Journal of Educational Psychology, June, 74, 4, 475-484.

Payne, B.K. and Monk-Turner E. (2006). Students' Perception of group projects: the role of race, age, and slacking. College Student Journal.

Synder, L.G. and McNeil, K.R(N.D). Enhancing Students' Perception of Collaborative Projects With Pre-Group Instruction Methods. *Research in Higher Education Journal.*

Thousand J, Villa, A and Nevin A. (Eds.) (1994).*Creativity and Collaborative Learning*; Brookes Press, Baltimore.

Tracom (2006). Social Style Model. Retrieved on 25 July 2010 from the website: http://www.tracomcorp.com/products_services/social_style/model.html

University of Wollongong,(2002). Code of Practice-Teaching and Assessment http:www.uow.edu.au/abou/teaching/teaching code.html-group

Watson, S.B (1992). "The Essential Elements of Cooperative Learning." *The American Biology Teacher* 54: 84-86.

Yizengaw, T. (2003). Transformations in Higher Education: Experiences with Reform and Expansion in Ethiopian Higher Education System. Keynote paper prepared for a Regional Training Conference on *Improving Tertiary Education in Sub-Saharan Africa: Things That Work!* Accra, September 23-25, 2003

APPENDICES

Table 1: Personality styles of respondents

Personality types	Frequency	Percent	Cumulative Percent
Analytical	15	13.8	13.8
Driving	19	17.4	31.2
Expressive	63	57.8	89
Amiable	12	11	100
Total	109	100	

Table 2: Personality styles Vs projects' importance to socialize

Personality Style	Frequency	SD	D	N	A	SA	Total
Analytical	Count	2	2	1	2	8	15
	% within personality style	13.3%	13.3%	6.7%	13.3%	53.3%	100%
	% of Total	1.9%	1.9%	0.9%	1.9%	7.4%	13.9%
Driving	Count	2	6	4	2	5	19
	% within personality style	10.5%	31.6%	21.1%	10.5%	26.3%	100%
	% of Total	1.9%	5.6%	3.7%	1.9%	4.6%	17.6%
Expressive	Count	5	2	7	15	34	63
	% within personality style	7.9%	3.2%	11.1%	23.8%	54%	100%
	% of Total	4.6%	1.9%	6.5%	13.9%	31.5%	58.3%
Amiable	Count	0	1	1	6	3	11
	% within personality style	0%	9.1%	9.1%	54.5%	27.3%	100%
	% of Total	0%	0.9%	0.9%	5.6%	2.8%	10.2%
Total	Count	9	11	13	25	50	108
	% within personality 1	8.3%	10.2%	12%	23.1%	46.3%	100%
	% of Total	8.3%	10.2%	12%	23.1%	46.3%	100%

Chi-Square Tests	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	25.080[a]	12	0.014
Likelihood Ratio	23.339	12	0.025
Linear-by-Linear Association	2.638	1	0.104

Table 3: Chi-square test for personality style versus slacker

		1	2	3	4	5	
analytical	Count	1	5	3	3	3	15
	% within person style	6,7%	33,3%	20,0%	20,0%	20,0%	100,0%
	% of Total	,9%	4,6%	2,8%	2,8%	2,8%	13,8%
driving	Count	6	0	6	6	1	19
	% within person styl	31,6%	,0%	31,6%	31,6%	5,3%	100,0%
	% of Total	5,5%	,0%	5,5%	5,5%	,9%	17,4%
expressive	Count	14	7	10	9	23	63
	% within person style	22,2%	11,1%	15,9%	14,3%	36,5%	100,0%
	% of Total	12,8%	6,4%	9,2%	8,3%	21,1%	57,8%
amiable	Count	0	1	2	3	6	12
	% within person style	,0%	8,3%	16,7%	25,0%	50,0%	100,0%
	% of Total	,0%	,9%	1,8%	2,8%	5,5%	11,0%
Total	Count	21	13	21	21	33	109
	% within person style	19,3%	11,9%	19,3%	19,3%	30,3%	100,0%
	% of Total	19,3%	11,9%	19,3%	19,3%	30,3%	100,0%

Chi-Square Test			
	Value	df	Assmp. Sig. (2-sided)
Person Chi-square	24,756[a]	12	,016
Likelihood Ratio	29,052	12	,004
Linear-by-Linear Association	3,537	1	,060
N f Valid Cases	109		

a. 14 cells (70, 0%) have expected count less than 5, the minimum expected count is 1, 43.

Table 4: ANOVA results

Collaborative Learning		N	Mean	Std. Deviation	Minimum	Maximum
Enhances education	1	5	3,6000	1,67332	1,00	5,00
	2	31	3,6452	1,27928	1,00	5,00
	3	52	4,4423	,87253	2,00	5,00
	4	17	4,0000	1,45774	1,00	5,00
	Total	**105**	**4,0952**	**1,18908**	**1,00**	**5,00**
Easy way of collecting marks	1	5	3,0000	1,87083	1,00	5,00
	2	31	2,9355	1,48179	1,00	5,00
	3	52	3,0962	1,38987	1,00	5,00
	4	17	2,8235	1,59041	1,00	5,00
	Total	**105**	**3,0000**	**1,45444**	**1,00**	**5,00**
Promotes socialization	1	4	3,5000	1,91485	1,00	5,00
	2	31	3,7097	1,48758	1,00	5,00
	3	52	3,8462	1,25846	1,00	5,00
	4	17	4,1176	1,26897	1,00	5,00
	Total	**104**	**3,8365**	**1,34461**	**1,00**	**5,00**
Is affected by slackers	1	5	4,0000	1,22474	2,00	5,00
	2	31	3,1613	1,59367	1,00	5,00
	3	52	3,1538	1,47375	1,00	5,00
	4	17	3,2353	1,60193	1,00	5,00
	Total	**105**	**3,2095**	**1,51083**	**1,00**	**5,00**
Members lack confidence	1	5	3,6000	1,34164	2,00	5,00
	2	31	3,6452	1,45025	1,00	5,00
	3	52	2,9423	1,56448	1,00	5,00
	4	17	2,4118	1,50245	1,00	5,00
	Total	**105**	**3,0952**	**1,55368**	**1,00**	**5,00**
Helps communicative skills development	1	5	3,6000	1,51658	2,00	5,00
	2	31	3,8387	1,39276	1,00	5,00
	3	51	3,8627	1,20033	1,00	5,00
	4	17	3,4118	1,50245	1,00	5,00
	Total	**104**	**3,7692**	**1,31630**	**1,00**	**5,00**
Helps students later in life	1	5	4,4000	,89443	3,00	5,00
	2	31	3,9032	1,39892	1,00	5,00
	3	52	4,3077	1,00075	1,00	5,00
	4	17	4,1176	1,45269	1,00	5,00
	Total	**105**	**4,1619**	**1,20195**	**1,00**	**5,00**