Work Group relationship with Student's Success in Movement Mechanisms Projects

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Article info

Abstract

The relationship between the work group and a student's success is crucial for creating an environment that is conducive to learning and growth. When students are part of a supportive and collaborative work group, they are more likely to be motivated and engaged in their studies. This positive interaction within the group facilitates the sharing of ideas, knowledge, and resources, thereby enhancing the students' understanding of the subject matter. Additionally, participating in a work group helps students develop crucial interpersonal skills such as communication and teamwork, which are essential for their future careers. Ultimately, a strong relationship between the work group and the student is a crucial factor in fostering academic success and personal development. The study utilized quantitative research methods and a correlational research design to examine the impact of the variables. The study involved 64 high school students from various schools as participants. The data collection tools consisted of two standard questionnaires. Descriptive statistics were used for data analysis to present the variables. Since the assumptions of normality and linearity were satisfied for the relationships between these variables, Pearson's correlation coefficient was used for further analysis. Findings with 99% confidence indicate a significant relationship between teamwork (commitment, trust, responsibility, constructive approach, and purposefulness) and student success in movement mechanisms projects.

1-Introduction

Group work is used as a means for learning at all levels in most educational systems, from compulsory education to higher education. The overarching purpose of group work in educational practice is to serve as an incentive for learning. For example, it is believed that the students involved in the group activity should "learn something." This prerequisite has influenced previous research to predominantly focus on how to increase efficiency in group work and how to understand why some group work turns out favorably and other group work sessions result in the opposite. The review of previous research shows that in the 20th century, there has been an increase in research about

students' cooperation in the classroom (Lou et al., 1996; Gillies and Boyle, 2010, 2011; Hammar Chiriac, 2014).

These adages speak to the potential groups have to be more productive, creative, and motivated than individuals on their own. Group projects can help students develop a host of skills that are increasingly important in the professional world (Caruso & Woolley, 2008; Mannix & Neale, 2005). Positive group experiences, moreover, have been shown to contribute to student learning, retention and overall college success (Astin,1997; Tinto, 1998; National Survey of Student Engagement, 2006).

There are two approaches concerning learning in group are of interest, namely *cooperative learning* and *collaborative learning*. There seems to be a certain amount of confusion concerning how these concepts are to be interpreted and used, as well as what they actually signify. Often the conceptions are used synonymously even though there are some differentiations. Cooperative group work is usually considered as a comprehensive umbrella concept for several modes of student active working modes (Johnson and Johnson, 1975; Webb and Palincsar, 1996), whereas *collaboration* is a more of an exclusive concept and may be included in the much wider concept cooperation (Hammar Chiriac, 2011).

Working in groups in educational settings is a common occurrence. Instructors often require group work because it is such an important skill, particularly moving forward into the workplace. Working on labs together, group project work, group assignments, even online group work with classmates who are all over the world, are all standard situations. Getting along is important, but working effectively together can make a better project when each team member contributes according to their strengths, resulting in a better project than each could have done on their own. This study has done to examining the relationship between the work group and the success of students in movement mechanisms projects.

2-Group work

A learning environment that encourages student involvement in the discovery and sharing of knowledge through the learning activities and continuous assessments has been endorsed as an emerging trend in higher education. In this learner-cantered approach, the role of a teacher has become more of a mentor or a guide who facilitates this dynamic process of learning. Nevertheless, the curriculum should be designed to support the active process of knowledge discovery and developing skills for future employability. In a recent survey report, Australian Association of Graduate Employers has rated teamwork in the top three skills required by Australian employers (AAGE 2014; Shermin et al, 2019). Learning and working effectively as part of a team or group is an extremely important skill, and one that you will refine and use throughout your working life. Group projects should be among the most valuable and rewarding learning experiences. For many students, however, they are also among the most frustrating (Gibbs, 1994).

Group work or cooperative learning is a method of instruction that brings students together to work in groups. Employers value a person's ability to work cooperatively. Indeed, studies show that they value it more highly than the ability to work independently. This is because, in most contemporary workplaces, people work in teams, which are often cross-disciplinary and quite diverse (Wong et al, 2022). The value to students of cooperative learning has long been well recognized.

Advantages: There are six advantages to working in a group: (Burke, 2011)

1. Groups have more information than a single individual. Groups have a greater well of resources to tap and more information available because of the variety of backgrounds and experiences.

2. Groups stimulate creativity. In regard to problem solving, the old adage can be applied that "two heads are better than one."

3. People remember group discussions better. Group learning fosters learning and comprehension. Students working in small groups tend to learn more of what is taught and retain it longer than when the same material is presented in other instructional formats (Barkley, Cross & Major, 2005; Davis, 1993; Burke, 2011).

4. Decisions that students help make yield greater satisfaction. Research suggests that students who are engaged in group problem solving are more committed to the solution and are better satisfied with their participation in the group than those who were not involved.

5. Students gain a better understanding of themselves. Group work allows people to gain a more accurate picture of how others see them. The feedback that they receive may help them better evaluate their interpersonal behavior.

6. Team work is highly valued by employers. Well-developed interpersonal skills were listed by employers among the top 10 skills sought after in university graduates (Graduate Outlook Survey, 2010; Freeman & Greenacre, 2011; Burke, 2011).

3-Group Work in Education

Group work is frequently used in higher education as a pedagogical mode in the classroom, and it is viewed as equivalent to any other pedagogical practice (i.e., whole class lesson or individual work). Without considering the pros and cons of group work, a non-reflective choice of pedagogical mode might end up resulting in less desirable consequences. A reflective choice, on the other hand, might result in positive experiences and enhanced learning (Galton et al., 2009; Gillies and Boyle, 2011; Hammar Chiriac and Granström, 2012; Hammar Chiriac, 2014).

Group work refers to learning experiences in which students work together on the same task. Group work can help build a positive and engaging learning community through peer learning and teaching. Promoting peer interactions can positively affect learning experiences by preparing students for work beyond the classroom. According to Constructivism, when students work together to solve problems, they construct knowledge together, rather than passively absorbing information. Students learn more effectively working cooperatively in diverse groups as opposed to working exclusively in a heterogeneous class, working in competition with other students, or working alone (Hattie, 2008). Some benefits include:

*   Collaborating to break apart and solve complex tasks

*   Deepening understandings and clarifying misconceptions with peer support

*   Improving 21st century skills such as:

    *   self-regulation and self-reflection

    *   communication and time management

    *   project management and conflict resolution

Assigning tasks that foster genuine teamwork and simulate real-life scenarios can help to prepare students for professional situations that will require collaboration. To design an engaging and community-oriented classroom, it is necessary to create opportunities for students to work together in your course (Loes et al, 2018).

It is difficult for teachers to design and implement group work effectively, and it is difficult for students to foster the group process, especially if they do not have the skills to make effective use of group work. Many students have never worked in a group before or lack the skills to work with others. Instructors cannot assume that students know how to work together, structure time, or delegate tasks. There are several ways that instructors can help.

First, the instructor should make certain that each student understands the assignment. Students should know the purpose of the project, the learning objective, and the skills that need to be developed through group work (Davis, 1993; Burke, 2011).

Second, the instructor needs to reinforce listening skills and the proper methods to give and receive constructive criticism (Fiechtner & Davis, 1992; Burke, 2011).

Third, the instructor needs to help the students manage conflict and disagreements (Davis, 1993; Burke, 2011).

4-Student's Success

Increasing student retention or persistence is a long-term goal in all academic institutions. The consequences of student attrition are significant for students, academic and administrative staff. The importance of this issue for students is obvious: school leavers are more likely to earn less than those who graduated (Kovacic, 2010).

Success is "The accomplishment of aim or purpose", but is this definition universal? Can it be applied to each and every one living on this planet? Success is a very unique concept and a powerful word. We live in a society where people compare and compete with each other's success or we could say that we live in a success-driven society. A person is judged on his or her success but what does this word imply? Many students new to school do not know what it takes to be successful in the school environment. They understand good and bad grades in a general way, and they sense that they should attend classes, but that is where their knowledge begins and ends. Most instructors know what a good student is – and is not. For one thing, a good student is not necessarily the most intelligent individual in the class. The following is a list of some characteristics of good students. This list is a description of what a hard-working student does and what a teacher likes to see. By learning these characteristics, you may better understand the day-to-day and class-to-class behavior of successful students. The idea is to provide you with guidelines you can follow which will help you get down to the business of becoming a serious, successful student.

- Successful students attend classes regularly.
- Successful students take advantage of extra credit opportunities when offered.
- Successful students are attentive in class.
- Successful students see their instructors before or after class or during office hours about grades, comments on their papers, and upcoming tests.
- Successful students turn in assignments that look neat and sharp.

Successful students know how to focus on their studies when it matters while also taking breaks when they need them. They can manage their time wisely, stick to meaningful study schedules, and make the most of their time in the classroom. In the process, successful students also know how to have a good time, and love gaining knowledge as much as they enjoy getting stellar grades (Alexander, 2023).

Hanne (2012) focuses on the experience of participating in a reflection group and how it can help individuals return to work more effectively. Thornton (2004) emphasizes the importance of ensuring effective group work in the classroom. Seton-Rogers (2014) discusses the therapeutic benefits of group work in occupational therapy, highlighting its potential for community building and skill development. Ackermann and Gert-Jan (2011) explores the challenges and advancements in designing group decision and negotiation processes. Overall, these papers highlight the diverse applications and benefits of group work in various contexts. These papers provide different perspectives on group work.

5-Research Framework

The research framework of this study is depicted in Figure 1, in which independent variables (Group Work) and one dependent variable (Students Success), were included.
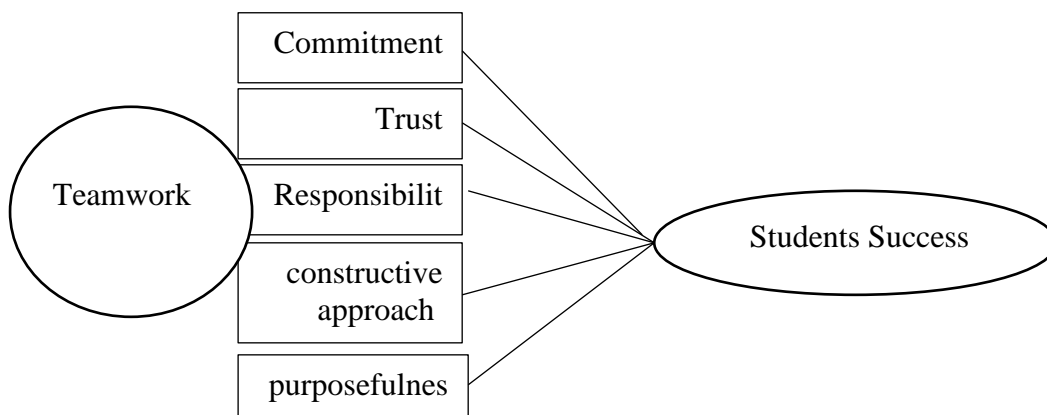

Figure 1: Research Framework

6-Methodology

The study applied quantitative research methods to examine the variables. The correlational research design was used in this study to examine the effect of the variables.

The study was conducted with 64 high School students in Pars Abad as participants from different schools. Since the study was designed within the scope of courses delivered by the researchers, convenience sampling was employed of the 64 participants. A considerable number of participants had project design experience, and all were provided with feedback by their instructor.

Data collection tools were two standards Questionnaires. Teamwork Scale (GAS) by Lencioni (2004) with It has 5 components (commitment, trust, responsibility, constructive approach and purposefulness) and 19 Scale and Academic Success Scale (ASA) by Erçetin et al. (2020) with 35 Scale.

Data analysis was in descriptive statistics for the variables were presented. Since the assumptions of normality and linearity were met for the relationships between these variables, Pearson's correlation coefficient was used for further analysis (Field, 2009).

7-Findings

Table 1 presents the descriptive data on the variables of teamwork and students' success. With regard to "teamwork," the participants were found to have a positive affect about the following factors: commitment (M = 4.58), trust (M = 4.25), responsibility (M = 4.84), constructive approach (M = 3.89), and purposefulness (M = 4.15). Finally, student's success is (M = 3.55).

Table 1: descriptive data on the variables

variables	Means	SD
teamwork	4.25	0.85
student's success	3.55	0.64

The model was tested based on the relationships between the variables and the researchers'

observations.

In this paper we have one main hypothesis and five secondary hypotheses. We have two statistical way of analysis of hypotheses, H_1 is acceptance of hypothesis and H_0 is rejecting of hypothesis. According table 2 the test distribution is normal so, we can use Pearson Correlation test.

Table 2: normality of test distribution

variables	Z	Sig.
teamwork	0.930	0.265
student's success	0.845	0.084

Very high values for R is the most evident sign for identification of collinearity but none of regression variables coefficients should be statistically significant or correlation between each two variables is greater than the square root of determination coefficient. In this research by examining these two factors it was demonstrated that there is not any collinearity among variables. Independent variables teamwork was tested by Pearson Correlation. The results of testing research hypotheses are as the following:

There is a significant relationship between teamwork (commitment, trust, responsibility, constructive approach and purposefulness) and student success in movement mechanisms projects.

- **Null**: There is not a significant relationship between teamwork (commitment, trust, responsibility, constructive approach and purposefulness) and student success in movement mechanisms projects.
- **Alternate**: There is a significant relationship between teamwork (commitment, trust, responsibility, constructive approach and purposefulness) and student success in movement mechanisms projects.

Table 3 shows the results of Pearson Correlation test for teamwork (commitment, trust, responsibility, constructive approach and purposefulness) as independent variable and student success as dependent variable.

Table 3: results of hypotheses

Independent variable	Dependent variable	r	Sig
Teamwork	Student Success	0.553	0.000
Commitment	Student Success	0.526	0.000
Trust	Student Success	0.585	0.000
Responsibility	Student Success	0.469	0.000
Constructive Approach	Student Success	0.550	0.000
Purposefulness	Student Success	0252	0.002

Regarding the significance level of teamwork and student success which is 0.000<1%, it is proved that with 99% confidence. So, we can accept Alternate hypothesis and say that There is a significant relationship between teamwork (commitment, trust, responsibility, constructive approach and purposefulness) and student success in movement mechanisms projects.

8-Discussion and Conclusion

The results of hypotheses show that there is a significant relationship between teamwork (commitment, trust, responsibility, constructive approach and purposefulness) and student success in movement mechanisms projects. Johnson and his colleagues claim that the use of cooperative learning methods eliminates at least two possible difficulties: the drop in academic progress and the increase of isolation, alienation, aimlessness and discomfort in group activities and this method It adds to the positive attitude towards school, increases self-confidence and improves personal relationships between students.

In order to avoid the isolation of learning groups, it is necessary for the groups to communicate with each other, show their work to each other, and if necessary, see each other's work and take a role model.

Group activities make them learn more than expected because teaching others helps one to better understand what they have learned. People become mutually responsible for each other and social skills are learned directly. Since in this type of cooperation, the more successful ones help the unsuccessful ones, so giving and helping is promoted.

Doing group work in school requires teaching and practicing different skills, and at the same time, by reviewing and doing different things as a team, students learn how to interact with others to achieve a common result. Although it may be easier for teachers to do work individually and creating individual competition plays a more prominent role in the educational system, it is not bad to have a look at the advantages of group work in school so that you don't hesitate to use it for a moment:

- Learning and practicing expressing opinions in the form of clear sentences and statements
- The formation of self-confidence in children
- Establishing favorable social relations with peers
- Learning and practicing good listening
- Paying attention to the opinions of others
- Active teaching and learning
- More responsibility for learning and achieving group results

- Promote helping others
- flexibility
- Respect for individual differences
- Achievement
- Increase motivation to be active in class
- Developing cooperation skills
- Cultivating critical thinking and discussion ability
- Greater ability in self-control and emotion management
- Strengthen planning skills
- Increasing the sense of trust in others
- Increase intimacy and friendship
- Create a sense of belonging
- Strengthening emotional intelligence skills
- Strengthen conflict resolution skills
- Increased ability to take risks
- Increasing creativity and generating new ideas
- Strengthen management and leadership ability
- Strengthen the power of analysis

References

Ackermann, Fran and Gert-Jan de Vreede. "Special Issue on 'Advances in Designing Group Decision and Negotiation Processes'." Group Decision and Negotiation 20 (2011): 271-272.

Alexander, Sean (June 21, 2023) Developing the Qualities of a Successful Student, ducation and Communications Studying, https://www.wikihow.com/Be-a-Successful-Student

Astin, A. (1993). What matters in college? Four critical years revisited. San Francisco: Jossey-Bass.

Australian Association of Graduate Employers [AAGE]. 2014. AAGE Employer survey: Survey report. Melbourne, Australia: High Flyers Research.

Barkley, E. F., Cross, K. P., & Major, C. H. (2005). Collaborative learning techniques: A handbook for college faculty. San Francisco; Jossey-Bass Publishers.

Burke Alison (2011) Group Work: How to Use Groups Effectively, The Journal of Effective Teaching, Vol. 11, No. 2, 2011, 87-95

Caruso, H.M., & Wooley, A.W. (2008). Harnessing the power of emergent interdependence to promote diverse team collaboration. Diversity and Groups. 11, 245-266.

Citation: Hammar Chiriac E (2014) Group work as an incentive for learning – students' experiences of group work. Front. Psychol. **5**:558. doi: 10.3389/fpsyg.2014.00558

Davis, B. G. (1993). Tools for Teaching. Jossey-Bass Inc., San Francisco: California.

Erçetin,Ş.Ş., Güngör,H. & Hamedoğlu,M.A. (2020). Academic success scale: Second-order confirmatory and exploratory factor analysis. International Journal of Educational Research Review,5(3),178-189

Evans, N. J., & Jarvis, P. A. (1986). The Group Attitude Scale: A Measure of Attraction to Group. Small Group Behavior, 17(2), 203-216. https://doi.org/10.1177/104649648601700205

Fiechtner, S. B., & Davis, E. A. (1992). Why some groups fail: A survey of students' experiences with learning groups. In A. Goodsell, M. Maher, V. Tinto, and Associates (eds.), Collaborative Learning: A Sourcebook for Higher Education. University Park: National Center on Postsecondary Teaching, Learning, and Assessment, Pennsylvania State University.

Freeman, L., & Greenacre, L. (2011). An examination of socially destructive behaviors in group work. Journal of Marketing Education, 33(1) p. 5-17. Graduate Outlook Survey (2010). University of Canterbury. http://content.yudu.com/A1qpzf/GoAustralia2011/resources/index.htm?referrerUrl=http%3A%2F%2Fwww.graduateopportunities.com%2F

Gibbs, G. (1994). Learning in Teams: A student Manual. Oxford: The Oxford Centre for Staff Development.

Gillies, R. M., and Boyle, M. (2010). Teachers' reflections on cooperative learning: Issues of implementation. Teach. Teach. Educ. 26, 933–940. doi: 10.1016/j.tate.2009.10.034

Gillies, R. M., and Boyle, M. (2011). Teachers' reflections on cooperative learning (CL): a two-year follow-up. Teach. Educ. 1, 63–78. doi: 10.1080/10476210.2010.538045

Hammar Chiriac, E. (2011). "Research on group work in education," in Emerging Issues in Compulsory Education [Progress in Education. Volume 20], ed R. Nata (New York: Nova Science Publishers, Inc.), 25–44.

Hammar Chiriac, E., and Granström, K. (2012). Teachers' leadership and students' experience of group work. Teach. Teach. Theor. Pract. 3, 345–363. doi: 10.1080/13540602.2012.629842

Hanne Cecilie. (2012). "Modige møter i en refleksjonsgruppe." Psychology

Hattie, J. (2012). Visible learning for teachers (1st ed.). Routledge.

Johnson, D. W., and Johnson, R. T. (1975). Learning Together and Alone. Cooperative, Competitive and Individualistic Learning (Englewood Cliffs, NJ: Prentice Hall).

Kovacic, Z. (2010). Early prediction of student success: Mining students' enrolment data. In Informing Science + Information Technology Education Joint Conference, Cassino, Italy.

Loes, C., Culver, K., & Trolian, T. (2018). How collaborative learning enhances students' openness to diversity. The Journal of Higher Education (Columbus), 89(6), 935–960. https://doi.org/10.1080/00221546.2018.1442638

Lou, Y., Abrami, P. C., Spence, J. C., Poulsen, C., Chambers, B., and d'Apllonia, S. (1996). Within-class grouping: a meta-analysis. Rev. Educ. Res. 66, 423–458. doi: 10.3102/00346543066004423

Mannix, E., & Neale, M.A. (2005). What differences make a difference? The promise and reality of diverse teams in organizations. Psychological Science in the Public Interest, 6(2), 31-55.

National Survey of Student Engagement Report. (2006). http://nsse.iub.edu/NSSE_2006_Annual_Report/docs/NSSE_2006_Annual_Report.pdf.

Seton-Rogers, Sarah E. (2014) "Working in groups." Nature Reviews Cancer 14: 645 - 645.

Shermin, Akther, De Silva Buddhima, Wesumperuma Ashini, (2019) Groupwork Assessment Development (GAD): A framework for developing an effective group work assessment, Australasian Conference on Information SystemsAt: Fremantle, Western Australia , December 2019

Thornton, Stephanie. (2004). "Turn your group work into great work." 5 to 7 Educator, Vol. 2004, No. 2 Managing Behavior

Tinto, V. (1987). Leaving college: Rethinking the causes and cures of student attrition. Chicago: University of Chicago Press.

Webb, N. M., and Palincsar, A. S. (1996). "Group processes in the classroom," in Handbook of Educational Psychology, eds D. C. Berliner and R. C. Calfee (New York: Macmillan), 841–873.

Wong, F. M. F., Kan, C. W. Y., & Chow, S. K. Y. (2022). From resistance to acceptance in small group work: Students' narratives. Nurse Education Today, 3, 105317. https://doi.org/10.1016/j.nedt.2022.105317