Article **Journal High School**
June 2022, Vol.6 No.15 9-15

Group cohesiveness measurement in college students as a tool to monitor dropout strategies

Medición de cohesión grupal en alumnos universitarios como herramienta para monitorear estrategias de deserción estudiantil

GARZA-MOYA, Luis Roberto†*, TOVAR-ROSAS, Claudia Rocio, ARREOLA-BURCIAGA, Josué Mizraim and RODRÍGUEZ-ALANIS, Francisco de Borja

Universidad Politécnica de Gómez Palacio, México.

ID 1st Author: *Luis Roberto, Garza-Moya* / **ORC ID:** 0000-0002-5740-1476, **CVU CONACYT ID:** 68866

ID 1st Co-author: *Claudia Rocio, Tovar-Rosas* / **ORC ID:** 0000-0002-8238-7493, **CVU CONACYT ID:** 745074

ID 2nd Co-author: *José Mizraim, Arreola-Burciaga* / **ORC ID:** 0000-0002-2722-1386, **CVU CONACYT ID:** 769055

ID 3rd Co-author: *Francisco de Borja, Rodríguez-Alanis* / **ORC ID:** 0000-0002-2949-1785, **CVU CONACYT ID:** 719064

DOI: 10.35429/JHS.2022.15.6.9.15 Received January 15, 2022; Accepted June 30, 2022

Abstract

This article shows the design of a measurement instrument for group cohesion and the results of implementing it in a group of study, the analysis presented shows the level of cohesion before and after applying group cohesion techniques and based on the results, the appropriate interaction among students is reflected, correlating the cohesion with the school dropout rate. Likewise, strategies are presented to improve group cohesion based on monitoring through the proposed measurement instrument. The group activity and the adequate organization of work groups, facilitates the approach and fulfillment of objectives, promoting a harmonious interaction and distribution of responsibilities aligned to common interests. In this way, it promotes the cohesion, the sense of belonging and, consequently, the identity generation through recognition in a social sense among the classroom members. Additionally, it is considered if the lack of group cohesion in higher education students motivates them to make school drop-out decisions.

Group cohesion, Terminal efficiency, Student retention

Resumen

El presente artículo, muestra el diseño de un instrumento de medición para la cohesión grupal y los resultados de implementarlo en un grupo de estudio, el análisis presentado denota el nivel de cohesión antes y después de aplicar técnicas de cohesión grupal y con base en los resultados, se reflexiona la adecuada interacción entre alumnos, correlacionando la cohesión con el índice de deserción escolar. Así mismo, se presentan estrategias para mejorar la cohesión grupal con base en el monitoreo a través de un instrumento de medición propuesto. La actividad grupal y la adecuada organización de grupos de trabajo facilitan el planteamiento y cumplimiento de objetivos, impulsando una interacción armoniosa y distribución de responsabilidades alineadas a intereses en común. De esta manera se favorece, entre los miembros del aula la cohesión, el sentido de pertenencia y por consiguiente la generación de identidad desde el reconocimiento en un sentido social. Adicionalmente se reflexiona si la carencia de cohesión grupal en los estudiantes de educación superior les motiva a tomar decisiones de abandono escolar.

Cohesión grupal, Eficiencia terminal, Retención estudiantil

Citation: GARZA-MOYA, Luis Roberto, TOVAR-ROSAS, Claudia Rocio, ARREOLA-BURCIAGA, Josué Mizraim and RODRÍGUEZ-ALANIS, Francisco de Borja. Group cohesiveness measurement in college students as a tool to monitor dropout strategies. Journal High School. 2022. 6-15:9-15.

* Correspondence from the Author: (E-mail: lgarza@upgop.edu.mx)
† Researcher contributing as first author.

Introduction

From the Latin cohaesum, cohesion is the action and effect of things adhering or joining together. Cohesion, therefore, implies some kind of union or link. Cañizares (2004), referring to group cohesion in the book Psicología y Equipo deportivo, defines it as "... the expression of closeness and coincidence of opinions, of points of view, of equality in the affective, evaluative plane of the joint activity that a team carries out".

Morris describes group cohesion as "a product of the integration of team members in the development of the joint activity, as a consequence of their affective, evaluative and action unity" (Morris, 2016).

For both Morris and Cañizares, group cohesion includes an affective element among its ingredients, which is highlighted as a key component in the design of strategies to be implemented to improve group cohesion among students belonging to the same classroom.

Likewise, Lázaro highlights that there are studies where groups with a high degree of cohesion are identified, their members cooperate more effectively, are more predisposed to abide by the rules and are focused on achieving group objectives (Lázaro, 2021).

For his part, Nervi (2015) identifies integration problems in the student environment as one of the types of causes of desertions, and also relates student desertion to the curriculum, personal interests, motivations, study habits and academic regulations; he also describes that desertion tends to be more frequent during the first cycle of studies. For Nervi, affective interpersonal relationships play an important role as a cause of dropout, so that improving group cohesion would reduce the reasons for dropping out of school.

Morris considers that communication and interpersonal relationships are indicators that allow expressing the development of group cohesion (Morris, 2016). Likewise Morris identifies that group cohesion is of vital importance to the adolescent in their need to belong to a social group.

One of the main concerns of the Polytechnic University of Gomez Palacio (UPGOP), as well as that of other institutions of higher education, is to keep students who are pursuing a career within the institution, until the completion of their university studies.

Since 2013, in an article entitled Problems related to terminal efficiency from the perspective of university students, whose objective was to identify the factors that affect terminal efficiency in chemical engineering students at the Universidad Juárez Autónoma de Tabasco in Mexico, motivational and personal reasons such as student disinterest and non-attendance among other reasons are mentioned as causes of a decrease in terminal efficiency (Domínguez, 2013). The interpersonal relationships originated as a consequence of improving group cohesion in a school group, motivate students to continue cohesively in common school and personal activities, dissipating one of the motivational reasons as a factor for decreasing terminal efficiency described by Domínguez.

Other authors such as García, Quevedo and Cuenca (2015), have identified factors such as group activity as a strategy to promote cohesion, sense of belonging and self-identity in students from the recognition of their social significance. Group activity favors the creation of affective bonds among participants, individual participation and interaction with other members of a group, generates a sense of belonging and identity in students. This is accentuated in universities where the common denominator among students is the lack of affective ties from their families.

Jornet warns of a series of dimensions for the evaluation model towards Social Cohesion (Social Welfare, Sustainability, Equity and Integration and Participation), all of them being necessary to be able to face the teaching-learning process from a holistic approach of educational systems (Jornet, 2020). For now we will only analyze disintegration, as a component that could cause a student to drop out of school; in this sense, improving group cohesion is the initial obligatory path to catalyze this factor. But how to identify that cohesion is of greater or lesser degree in a group of students?

ISSN-2523-0336

Due to what has been identified by the aforementioned authors and in virtue of having tools to measure group cohesion that facilitate the establishment of strategies to reduce school dropout at UPGOP, this paper shows the design of a measurement instrument to identify the level of group cohesion in a group of students, It also describes the results of an intervention carried out with students of the Information Technologies career at the same university, where the students' personal and motivational interests of integration, among others, are highlighted and correlated with group cohesion, thus decreasing school dropout and contributing to improve the terminal efficiency index.

Materials and methods

The study group was composed of a group of 29 students of the information technology career of the UPGOP, where 21 of them were men and eight were women. An intra-group longitudinal quasi-experimental design was implemented. The application of the measurement instrument was carried out before implementing group cohesion techniques. The first application of the measurement instrument shown in Table 1 was used at the beginning of the first four-month period, and later, at the end of the four-month period, the same measurement instrument was applied to monitor the degree of cohesion existing in the study group.

The initial stage of application of cohesion techniques to the study group was considered from its entry into the first four-month period of the university when implementing innovative school retention strategies, according to the chronological execution of the following set of activities:

1. First day of class:

Collaboratively designate in the classroom some student(s) to form the group's social networks, one of the social networks should include the teachers who teach them and another one that does not consider adding teachers.

2. First week of classes:

Motivate the students to have a get-together at the beginning of the semester where only students without teachers attend.

3. Within the first two weeks of classes:

   a) Students should receive reflection talks that include aspects related to: improving their self-esteem, creating social awareness, visualizing themselves as future professionals and explaining to them what possible positions and in which probable companies they could work, guiding them to be positive and proactive leaders, explaining how they should contribute as good citizens, etc. The above talks are given during the non-classroom hours already scheduled in their class schedules.

   b) In the classroom, dynamics should be carried out to improve group bonding and encourage fellowship.

4. It is proposed that the Academic Program Director (DPA) or a full time Professor be a teacher of the students in the first training cycle to directly monitor their behavior.

5. Constantly mention success stories of students and alumni.

6. Third week of classes:

A student should be collaboratively appointed among the classroom members guided by the academic program director to be assigned the role of group leader.

7. Throughout the first quarter:

a) Conduct an effective tutoring intervention making the teachers assigned for this activity aware of the proper role they should play as tutors of the students.

b) Constantly mention to the students informative capsules of real projects carried out by teachers and students of the specialty as well as success stories of teachers, students and alumni.

c) Motivate the creation of collaborative learning groups generating positive synergies that contribute to perform as good students.

ISSN-2523-0336

d) Designate academic support pairs, among students in the same classroom, where high performing students are in charge of explaining to low academic profile students the concepts addressed by their teachers in class.

e) Close and individualized follow-up for students by the DPA in support of tutoring teachers.

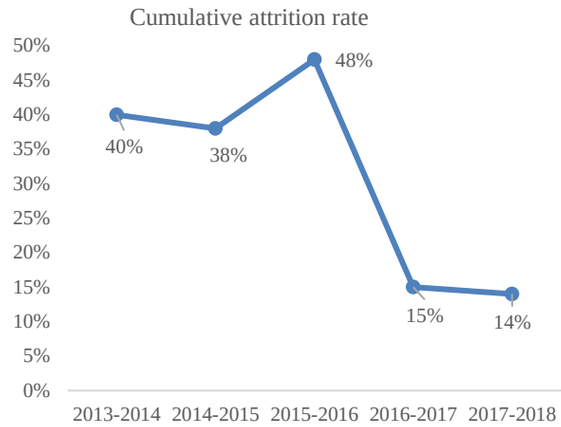
8. At the end of the term:

Motivate them to hold an end-of-course get-together where only students without teachers attend. During the last week of class, the group cohesion measurement instrument (Table 2) should be applied to monitor the level of cohesion that exists among the members of the study group.

Results and discussion

The results presented below are based on the implementation and analysis of the measurement instrument for group cohesion shown in the section on materials and methods. The instrument was applied at two different times: the first intervention was carried out before implementing group cohesion techniques and the second application was made after the cohesion techniques had been applied to the study group.

To contextualize the results, it is important to point out that, statistically, it was identified that traditionally at UPGOP the highest dropout rate was located in the first year of academic training, made up of the first, second and third semesters for the academic program of information technology engineering at UPGOP (Graphic 1).



Graphic 1 Cumulative academic dropout rate in the first cycle of the generations that entered in the academic cycles from 2013 to 2017 in information technologies at UPGOP
Source: UPGOP School Services Department

After applying group cohesion strategies, a considerable decrease in the dropout rate is identified, it is observed in Figure 1 that in the first year of training for the generations that entered in the years 2013 and 2014, eight out of 20 students dropped out in the first year of university training, for the generation entered in 2015, one out of two students dropped out in the first academic year. It should be noted that in the previous statistics, group cohesion techniques were not yet implemented. For students who entered in 2016 and 2017, group cohesion techniques were implemented and a decrease in dropouts is observed where for both years, only three out of 20 students decided to abandon their university studies in the first academic year. It is attributed that this notable difference is due to the group cohesion strategies applied in the two generations entered in the aforementioned years. Likewise, Figure 1 shows a lower dropout rate for both the generation entered in 2016 and the one identified in 2017 in relation to the 2015 generation. The results shown in Figure 1, denote a clear trend towards a decrease in the dropout rate, so an improvement in terminal efficiency is predicted, associated with the group cohesion strategies applied to the object of study. However, for the following generations of students entering from 2019 onwards, the pandemic did not allow the application of techniques to improve group cohesion and a higher dropout rate is identified. It is expected that from the year 2022 onwards, the dropout indicators will improve again by allowing the application of social integration techniques with the return to classes.

ISSN-2523-0336

In the instrument designed to measure group cohesion, the response items were quantified (Table 1) for statistical analysis purposes.

Answer questions	Quantification
a) Always	5
b) Almost always	4
c) Sometimes	3
d) Rarely	2
e) Never	1

Table 1 Quantification of items for the responses of the measurement instrument in the independent and dependent variables
Source: Department of Information Technologies

The first application of the instrument was carried out within the first week of entering the university for the 2016 generation and the second application of the instrument was carried out at the end of the first year of academic training for this same generation.

The results obtained when applying the measurement instrument in the 2016 generation before applying group cohesion techniques, indicated a low level of cohesion since in the questions related to measure this independent variable (from question 1 to 19 shown in the materials and methods), the mode for the answers oscillates between the categories of "rarely" and "sometimes", interpreting these answers as low cohesion, the mean in the questions of this category results in an average of 2.68 with an average variance of 1.02 and an average standard deviation of 1.18.

On the other hand, after applying group cohesion techniques, the results showed that group cohesion improved notably and a trend is identified in the answers "almost always" and "sometimes", which establishes a greater cohesion in relation to the first application for this same study group, the mean in questions of this category results in an average of 3.52 with an average variance of 0.97 and an average standard deviation of 1.05.

The Cronbach's alpha obtained to measure the reliability of the scale for the questions designed to obtain the independent variable "group cohesion" is 0.83, which reflects an acceptable level that allows accepting the hypothesis of reliability in the scale.

In the measurement instrument described above, from questions 20 to 31, the student's perception is measured in relation to academic compliance and performance, as well as the student's attachment to the information technology specialty. From these results, greater compliance and academic performance is identified when there is greater group cohesion. Likewise, the student has a greater attachment to the specialty when he feels more cohesive with his fellow students.

The preliminary results shown in Figure 1, show a tendency to decrease the dropout rate, so an improvement in terminal efficiency is predicted, associated with the group cohesion strategies applied to the object of study. The proposed research should continue in its maturation process in order to demonstrate the following hypothesis Group cohesion is a key factor that contributes to improve university terminal efficiency?

Conclusions

Terminal efficiency is an indicator that Higher Education Institutions (HEI) must urgently address in order to increase the number of graduates in Mexico, and although strategies are being implemented to improve it, they are not massively obtaining convenient results.

Group cohesion is an element that HEIs do not consider fundamentally in a generalized way, as a technique to reduce school dropout and consequently improve terminal efficiency, so they should consider this technique as a guiding principle to reduce school dropout in addition to constant and adequate tutoring.

The sense of belonging generated as part of group cohesion favors an increase in terminal efficiency.

With group cohesion, the affective relationships of the young students are improved, which leads to the generation of collaborative work groups, potentiating the results in their objectives and promoting participatory synergies, which consequently allow them to perform jointly, as better professionals in their specialty of graduation.

ISSN-2523-0336

For the information technology career at UPGOP, group cohesion rescued the last two generations entered in 2016, 2017 and 2018 from being victims of a massive dropout by students, as has happened statistically in previous generational cuts, so it is expected to continue applying this type of techniques to improve group cohesion, within the first school cycle for future generations of students. However, the prohibition of classroom attendance for the generations entering in the years 2019 to 2021 made it difficult to apply the techniques to improve group cohesion, resulting in a higher dropout rate.

In the first cycle of university education, students greatly value the testimonies that students from previous generations can provide them, thus mitigating the possible lack of academic dedication and facilitating the establishment of professional goals, focusing efforts on the fulfillment of both academic objectives and established professional goals.

As part of the strategies established in the methodology described above, the individual awareness talks for the students provide them with a fundamental channel to establish personal goals and behaviors in their lives, motivating them to generate intrinsic codes of conduct for their daily activities, thus encouraging them to behave little by little as better professionals.

Subsequently, in a second stage, once the strategy has been validated, it will be implemented in other specialties within the same educational institution to test its effectiveness. It is expected to participate in a third stage, where group cohesion will be implemented at a national level in all the Polytechnic Universities of Mexico, as a core part of collaborative tutoring.

Instructions: Answer anonymously by selecting only one item for each of the following questions, your answers must be honest and true to your own reality according to the following scale: a) Always b) Almost always c) Sometimes d) Rarely e) Never					
Ask	Reply				
1. I generally enjoy being part of the school group I am enrolled in.	a	b	c	d	e
2. I tend to get close to my classmates to talk.	a	b	c	d	e
3. The friendships and relationships I have with my classmates are very important to me.	a	b	c	d	e
4. If given the opportunity, I would switch to another group in the same career.	a	b	c	d	e
5. If the school group is planning a social activity for everyone, I automatically feel part of it.	a	b	c	d	e
6. I would like to repeat in the future the experience of living with my classmates in another environment different from school.	a	b	c	d	e
7. When I need advice on a personal situation, I can freely turn to my colleagues.	a	b	c	d	e
8. I agree with most of my peers regarding what is important in life.	a	b	c	d	e
9. Me siento leal a mis compañeros de grupo del salón de clases.	a	b	c	d	e
10. I am willing to work together with others to improve our coexistence.	a	b	c	d	e
11. I like to think that I have a lot in common with my classmates.	a	b	c	d	e
12. Regularly one of my classmates comes up to me to talk.	a	b	c	d	e
13. I regularly take the initiative to approach a classmate to talk.	a	b	c	d	e
14. All the people in this room feel part of the same team.	a	b	c	d	e
15. Attending and studying in this classroom, I have a feeling of fellowship.	a	b	c	d	e
16. I have the confidence to approach my classmates to ask them something I didn't understand about my classes.	a	b	c	d	e
17. There are conflicts between classmates	a	b	c	d	e
18. I live with my classmates outside of school	a	b	c	d	e
19. I enjoy studying and doing homework together with my classmates.	a	b	c	d	e
20. I comply with the punctual delivery of evidence according to the dates requested by the teachers	a	b	c	d	e
21. It is common for me to fail at least one subject at the end of the term.	a	b	c	d	e
22. I continually take special examinations	a	b	c	d	e
23. When I take a special exam I fail it.	a	b	c	d	e
24. It is common that when a re-course is opened, I enroll because I failed the subject that corresponds to that re-course.	a	b	c	d	e
25. I have failed a re-test.	a	b	c	d	e
26. I participate actively and positively in class.	a	b	c	d	e
27. I turn in individual evidence commissioned by teachers.	a	b	c	d	e
28. I turn in evidence per team commissioned by teachers.	a	b	c	d	e
29. The specialty I am studying is the one I choose to enter on my own.	a	b	c	d	e
30. I like the career I am studying and I feel identified with it.	a	b	c	d	e
31. I visualize myself in the future working in something related to the career I am studying.	a	b	c	d	e

Table 2 Annex 1
Source: Own elaboration

References

Benitez, Jaime, (1950). Razón de ser de la universidad. Puerto Rico: Universidad de Puerto Rico.

ISSN-2523-0336

Cañizares, M. (2004). *Psicología y Equipo Deportivo*. Ciudad de la Habana: Editorial Deportes.

De Fanelli, A. G., & de Deane, C. A. (2016). Abandono de los estudios universitarios: dimensión, factores asociados y desafíos para la política pública. Revista fuentes, (16), 85-106. https://doi.org/10.12795/revistafuentes.2015.i16.04

Domínguez Pérez, D., Sandova Caraveo, M. del C., Cruz Cruz, F., Pulido Téllez, A. del R. (2013). Problemas relacionados con la eficiencia terminal desde la perspectiva de estudiantes universitarios. Revista Reice. Revista Iberoamericana Sobre Calidad Y Cambio En Educación, 12(1), 25–34. https://doi.org/10.1017/CBO9781107415324.004

Fuentes, R. C., & Yáñez, A. M. (2016, Noviembre). Programa de inducción como estrategia de adaptación a la vida universitaria. In Congresos CLABES.

García Arias, N., Quevedo Arnaiz, N., Cuenca Díaz, M. (2015). Mikarimin. Revista Científica Multidisciplinaria ISSN 2528-7842 Consideraciones acerca del trabajo grupal para un aprendizaje desarrollador, 43–52.

Martínez, F. (2001). Estudio de la eficiencia en cohortes aparentes. En ANUIES, Deserción, Rezago y Eficiencia Terminal en las IES. Propuesta metodológica para su estudio. México: ANUIES.

Morris, L., A. (2016). Actividades para recuperar la cohesión grupal en el equipo de Karate-do escolar de la EIDE Héctor Ruíz Pérez de Villa Clara. Universidad Central "Marta Abreu" de Las Villas, 1, 68.

Nervi, C., Rodríguez, J., Osada, J. (2015). Deserción universitaria durante el primer año de estudios. FEM: Revista de la Fundación Educación Médica, 18(2), 93-93. https://doi.org/10.33588/fem.182.770

Vigotsky, L. S. (1996). El problema de la edad. Madrid: Aprendizaje Visor.

Jornet Meliá, J. M., Bakieva, M., & Sánchez Delgado, M. P. (2020). La Cohesión Social como objetivo de la Educación: ¿podemos especificar un modelo de calidad para realizar la evaluación de Sistemas Educativos?. Fronteiras, 2020, vol. 9, num. 3, p. 239-260. https://doi.org/10.12795/revistafuentes.2015.i16.04

Asociados Y Desafíos Para La Politica Pública. Revista Fuentes, 16, 85–106.

Lázaro, G. F. (2021) Cohesión grupal y rendimiento académico: Un estudio de caso en el entorno educativo de segundas lenguas.

García, A. Y., Adrogué, C., García De Fanelli, A., & Adrogué De Deane, C. (2015). Abandono De Los Estudios Universitarios: Dimensión, Factores. https://doi.org/10.12795/revistafuentes.2015.i16.04

Martínez, B. H. (2015). Causas del bajo rendimiento escolar origina un alto nivel de deserción escolar y habilidades para estudiar ayudan a mejorar el rendimiento escolar. Revista Iberoamericana para la Investigación y el Desarrollo Educativo ISSN: 2007-2619, (11).

ISSN-2523-0336