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Organizational Climate Management in the Context of Initial Mathematics Teacher Education

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Abstract

Objective: This study aims to analyze the impact of organizational management on motivation, satisfaction and commitment in teacher training in the context of Chilean quality assurance policies that emphasize a positive school climate and good coexistence. *Methods:* Using a Likert scale with a Cronbach's alpha of 0.957, we surveyed 62 students in a mathematics teacher education program. A multiple linear regression analysis was conducted to examine how motivation, satisfaction, and engagement were related to organizational management and climate. *Findings:* The results show that motivation and satisfaction are significant predictors, explaining 61.5% of the variance in organizational management, while commitment also influences climate, but to a lesser extent. These results underscore the importance of motivation and satisfaction for effective organizational management and suggest that these factors may be more important than commitment in shaping a positive organizational climate. *Novelty/Improvement:* This study contributes to the literature by highlighting the need for management additional variables that influence organizational climate in higher education to improve our understanding of the factors that influence educational environments.

1- Introduction

In the Chilean educational context, measures to ensure the quality of education play an important role, which also aim to ensure that the teaching and learning process takes place in a context of a good climate and healthy coexistence in the school [1]. The school climate takes into account various norms and values that regulate the quality of life, interpersonal relationships and social interactions as well as the organizational processes and structures in educational institutions [2]. According to Berkowitz et al. [3], a positive school climate is essential for the achievement of learning outcomes and for the general development of students.

In terms of leadership for climate management, there is a framework for good management, a ministerial proposal that sets out various criteria for the performance and professional development of teachers. Specifically, it states that part of the director's responsibility is to fulfill the task of leading and carrying out institutional educational projects, with responsibilities in different areas such as leadership and management, in the pedagogical, administrative and financial areas [4]. In this way, the director and his management team are responsible for the organizational climate in the

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educational institutions through decentralized leadership. Exercising this leadership role is key to the success of educational organizations and the achievement of educational goals [5]. Therefore, managerial leadership is essential for the educational function, the development of a good climate and the interaction of all members of the community [6]. Moreover, teachers' leadership and pedagogical management influence students' academic outcomes [7]. Organizational climate is key to the mental health of members of educational organizations [8].

A healthy environment and collaboration are important factors in the management of educational contexts [9, 10]. The environment is comparable to what is called the climate. The process of managing the members of the school community is crucial because it is precisely the perception of the latter that configures the so-called organizational climate [11]. This climate has a direct impact on the development and results of an organization. Organizational climate is an intangible element that is perceived by the members of an organization but is crucial to its functioning, as it can change the culture and the achievement of goals. In the field of organizational psychology, the term "climate" is used to describe the environment, especially in institutional contexts [11]. Understanding organizational climate requires an understanding of the concept of organizational culture, which also refers to aspects that identify an organization. However, organizational climate is more stable over time and can contribute to or hinder organizational culture [12]. In contrast to climate, culture is more stable and enduring, whereas climate is more dynamic and can change over time [7, 12]. Just as climate can influence organizational culture, organizational culture also influences climate. On the other hand, organizational climate and the management of teamwork are fundamental to the success of educational organizations. This is shown by a study that examined the relationship between these concepts in students and teachers [13].

Organizational climate in school education has already been researched, but it is an under-researched topic in higher education. In universities, organizational climate management is applied at different levels of educational administration [14]. For example, the college community does not always have a direct relationship with the highest authority, the rector. Therefore, the people who perform the role of directive leadership are mainly the dean and department heads who lead the directive management and are responsible for the perception of organizational climate. When comparing the organizational climate of government-funded teacher education institutions with those that are self-funded, and when evaluating the spatial difference in terms of organizational climate and teacher job satisfaction, differences are found [15]. Studies on the impact of decision-making in governance mechanisms influenced by organizational culture and compensation systems of public universities have shown that these factors indirectly affect the efficiency of universities through decision-making [15].

Management is directly related to organizational climate, which in turn influences organizational culture, which in turn is directly related to short-, medium-, and long-term success [5]. Organizational climate in higher education has been little studied by the academic and research community. In this context, research on organizational climate to be conducted in continuing education programs is expected to make an important contribution to andragogy, higher education, and especially initial teacher education. In Chile, continuing education programs are presented as an educational alternative that allows people with previous educational experiences and certifications to obtain a bachelor's degree in pedagogy and the qualification of professor in a specific field, providing employment opportunities and continuous development [16]. Nowadays, more and more people are entering the teaching profession through alternative certification programs, which have the characteristic of being more limited. This is an important means of addressing the teacher shortage that has become a global problem [17].

Educational management and leadership are terms that are generally used as synonyms, although they are technically different because a manager does not necessarily act with leadership qualities or skills, or a leader holds a management position. However, a manager must develop leadership skills to ensure the success of an organization [5]. Transformational and distributed leadership that enables appropriate management of organizational climate and teamwork has gained importance as all members of an organization can be potential leaders [18]. Educational planning and management must be well structured so that both teachers and students understand the goals and feel the support of leaders [19]. Educational leaders are essential to the success of educational organizations [20]. As can be seen, organizational climate is something that is better known as environment in the educational context. The environment perceived by the members of an organization is crucial. A negative environment can have a detrimental effect on students' academic performance [21].

Organizational climate is an intangible construct that includes several variables, and its determination depends on the objectives of the research. In this study, the following variables are considered: Organizational management, satisfaction, motivation, and commitment. Motivation related to the satisfaction of needs is essential in organizational psychology [8, 22]. There are extrinsic and intrinsic motivations that affect people's willingness [23]; both are relevant when it comes to organizational climate and teamwork. Furthermore, the combination of both can maintain lasting motivation [24]. Satisfaction perceived by teachers and students is fundamental to interaction within the educational community [25, 26], organizational climate, and collaboration. Teacher satisfaction is associated with commitment and motivation [7]. Organizational commitment is achieved through active participation in the organization [27]. Management influences teachers' organizational climate [28]. However, teachers sometimes avoid getting involved for fear of failure or retaliation [28].

According to Sotelo & Figueroa [29], there is a positive and significant relationship between organizational climate and quality of work. This trend continues in other studies, which have also found a positive correlation between teaching performance, satisfaction, and motivation [30]. The study by Akram et al. [31] also clearly shows that there is a positive correlation between satisfaction, commitment, and motivation. Job satisfaction is not only mediated by intrinsic motivation; it also has a high component of extrinsic motivation, such as recognition and reward, and job satisfaction has an impact on teacher burnout [32]. Considering the above empirical references, it can be concluded that there is a positive and significant correlation between organizational management, satisfaction, motivation, and commitment. However, this relationship has been studied in administration rather than education, especially in the context of initial teacher education in higher education. This study aims to contribute to the understanding of these relationships in an under-researched educational context.

The hypotheses of the study are that the organizational climate variables—motivation, satisfaction, commitment, and organizational management—will correlate positively and significantly with each other. The second hypothesis is the assertion that the variables of satisfaction, motivation, and commitment form a multiple linear regression model that predicts the variable of organizational management.

2- Research Methodology

2-1-Description

This study takes a quantitative approach as it focuses on data collection in an associative paradigm. The working methodology uses correlation analysis, as we will work with covariance hypotheses [33, 34].



Figure 1. Flowchart summarizing the methodology

2-2-Design

The research design is non-experimental and cross-sectional [35]. The representative sample of the study consisted of college students in a continuing education program at a Chilean college. A survey was used that was validated by specialists using the same variables for organizational climate management.

2-3-Population and Sample

According to Hernandez et al. [36], the population is defined as the set of individuals that share common characteristics. The sample in research corresponds to a representative set of the population. In this study, 62 students participated in a teacher training program in mathematics, which corresponds to a continuation of studies at a Chilean university. This program is aimed at professionals and/or graduates of mathematics-related professions who have developed a late vocation for the teaching profession or who want to redesign their professional careers. The curriculum is divided into four quarterly sections, each with 13 weeks of instruction and a total duration of 52 weeks. The teachers in training surveyed were students who had completed 1 or more study periods. The survey was conducted on a Likert scale, and the selection of participants was based on an intentionally non-probabilistic criterion [37], as the results are not generalizable and obey the process of preparation and validation of the instrument or scale to develop the research.

2-4- Techniques and Instruments

We used an instrument for the group of students of the pedagogical training program in mathematics. We used a Likert scale that was validated in a rigorous procedure [38]. Finally, we performed an internal consistency validation using Cronbach's alpha coefficient to assess the reliability of the scale. We obtained a value of 0.957, which is characterized as high reliability (see Table 1).

Table 1. Reliability statistics

Cronbach's alpha	Cronbach's alpha based on the typed items	N of items
0.957	0.959	22

3- Results

In this section, we will analyze the collected data. Specifically, the study was conducted using the statistical software SPSS 23, version 12.1.1.0 Linux x86 (64 bits). This software runs on the Intel® Core i3-9100 CPU platform, 3.60 GHz 4.

In examining the data, multiple linear regression analysis is performed to predict the dependent variable organizational management and to understand the total variance. Multiple linear regression analysis is a technique widely used in statistics to estimate the relationship between the dependent variable and the independent variables [39, 40]. In this study, the independent variables were coded as follows: Commitment (C), Satisfaction (S), and Motivation (M). Based on the analyzed results, we will propose an explanatory model that can address the real problems of managing organizational climate in higher education. We will test the assumptions of multilinear regression analysis (normality, linearity, etc.).

3-1-Normality Test

Parametric statistical methods are based on the observance of distribution assumptions (usually normality). The probability distribution of the population from which we draw the sample is not known, so we check that the assumptions are met. To do this, we use graphical methods that compare the empirical distribution with the theoretical distribution. These include the histogram, the P-P plot and the Q-Q plot. Finally, we see a curve with a behavior that is as similar as possible to the theoretical distribution, so that the histogram resembles the theoretical distribution.

Our hypotheses for testing normality: H0: The sample comes from a normal population. H1: The sample does not come from a normal population.

The most commonly used probabilistic tests for testing a normal distribution include Kolmogorov-Sminov (KS) and Shapiro-Wilkor (SW). Otzen & Manterola [37] describes the conditions that determine the sample to be used, considering cases in which n is greater than 50 (n>50) or n is equal to or less than 50 (n \leq 50). In the study, the sample is n=62 students from the continuing education program in initial teacher education. This sample represents more than 50% of the total number of students in the program. We were able to determine a significance value that is well above 0.05, so that the null hypothesis is confirmed, and the data therefore has a normal distribution (KS).

3-2-Correlation

In this study, we want to assess the correlation between all our quantitative variables. The statistical tests used to examine the correlation are Spearman's and Pearson's Rho. To perform the Spearman's Rho statistical test, the variables do not always have to be normally distributed, unlike Pearson's correlation test. However, we perform both tests and assess the linear relationship between the variables by calculating the correlation coefficient. All our variables show a high positive correlation with each of the other variables. We illustrate the results of the Spearman's Rho statistical test in Table 2.

Correlations							
			G	Μ	S	С	
		Correlation coefficient	1.000	0.746**	0.656**	0.640**	
	G	Sig. (bilateral)	•	M S C 0.746** 0.656** 0.640** 0.000 0.000 0.000 62 62 62 1.000 0.794** 0.812** 0.000 0.000 0.000 62 62 62 0.794** 1.000 0.751** 0.000 . 0.000 62 62 62 0.794** 1.000 0.751** 0.000 . 1000 62 62 62 0.812** 1.000 0.000 62 62 62 0.812** 0.751** 1.000 0.000 0.000 .			
		Ν	62	62	62	62	
		Correlation coefficient	0.746**	1.000	0.794**	0.812**	
	М	Sig. (bilateral)	0.000		0.000	0.000	
Second and the Disc		Ν	62	62	62	62	
Spearman's Kno		Correlation coefficient	0.656**	0.794**	1.000	0.751**	
	S	Sig. (bilateral)	0.000	0.000		0.000	
		Ν	62	62	62	62	
		Correlation coefficient	0.640**	0.812**	0.751**	1.000	
	С	Sig. (bilateral)	0.000	0.000	0.000		
		Ν	62	62	62	62	

Table 2. Correlat	ion between	variables
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** The correlation is significant at the 0.01 level (bilateral).

3-3-Studies on Possible Explanatory Models

If we analyze Tables 3 and 4, we see that we have 7 models that can solve the existing problems. In our study, model 3 with two independent variables is the most effective model to explain the variance: Satisfaction and Motivation. The R-squared reaches 0.628, and the corrected R-squared reaches 0.615. Normally, in regressions, it is recommended to consider the corrected R-squared value because this value adjusts the R-squared based on the number of independent variables in the model. However, in our analysis, all models have a similar R-squared value and corrected R-squared value. Therefore, to make our study more representative, we consider the smallest difference of all models between the two elements of the regression. Finally, Model 3 (S and M) is the one that meets the requirements and has a standard error of 2.68850, the lowest of all models.

Model	Variables Introduced	R	R squared	Corrected R square	Typical error of the estimate
	S				
1.	С	0.793ª	0.630	0.610	2.70457
	М				
2.	М	0.788ª	0.622	0.609	2.70957
	С				
3.	S	0.792ª	0.628	0.615	2.68950
	М		0.028		2.00030

Table 3. Summary of key models 1, 2 and 3

 Table 4. Summary of key models 4, 5, 6 and 7

Model	Variables Introduced	R	R squared	Corrected R square	Typical error of the estimate	
4	С	0.7894 0.622		0,600	2 70057	
4.	М	0.788*	0.022	0.009	2.70937	
5.	С	0.690ª	0.476	0.467	3.16175	
6.	М	0.785ª	0.617	0.611	2.70359	
7.	S	0.719ª	0.516	0.508	3.03839	

3-4-Evaluation of the Regression Model

To create a multiple linear regression model, some assumptions such as linearity, independence of errors and collinearity need to be checked. For these, we can confirm that it fulfils the assumptions of linearity (see Figure 2).



Figure 2. Analysis of linearity: This figure analyzes the linearity of the selected multiple correlation model

Another fundamental assumption in statistical studies is the independence of errors, which means that the errors of the model predictions are independent of each other. The Durbin-Watson statistical test can help us to detect autocorrelation in the errors. Table 5 shows that this test yields a value of 1.554. In order to assume the independence of the errors, the value must therefore be between 1.5 and 2.5. Therefore, the model fulfils the assumption.

	Table 5. Durbin Watson test							
Model	R	R squared	Corrected R square	Typical error of the estimate	Durbin-Watson			
3.	0.792ª	0.628	0.615	2.68850	1.554			
a. Predictor	a. Predictor variables: (Constant),S, M							

b. Dependent variable: G

In the collinearity test according to the most flexible parameters, it must have a Variance Inflation Factor (VIF) of less than 10 and more demanding values of less than 4. It turns out that the model has a value of 3.490 and fulfils the requirement of non-multicollinearity (Table 6). (t: 4.664, 4.199, 1.294; p<0.001).

	Table 6. Collinearity Test									
	Madal	Unstandar	dized coefficients	Coefficients typify dos	4	6 :	Collinearity	statistics		
_	widdel	В	Error típ.	Beta	t sig.		Tolerance	FIV		
	(Constant)	8.477	1.818		4.664	0.000				
3.	М	0.667	0.159	0.623	4.199	0.000	0.287	3.490		
	S	0.210	0.163	0.192	1.294	0.201	0.287	3.490		

a. Dependent variable G

The model significantly improves the prediction of the organizational Management variable (F:49.712; p<0.001 (Table 7)).

Table 7. Al	NOVA
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	Model	Sum of squares	gl	Root mean square	F	Sig.
	Regression	718.642	2	359.321	49.712	0.000^{b}
3	Residual	426.454	59	7.228		
	Total	1145.097	61			
_		-				

a. Dependent variable: G

b. Predictor variables: (Constant). S. M

4- Discussion

This study found a positive and significant correlation between all organizational climate variables (satisfaction, motivation, commitment and organizational management). This result is consistent with previous studies such as that of Sagredo Lillo & Castelló Tarrida [7], which found a positive correlation between management, satisfaction, commitment and teacher motivation, confirming a similar trend in different contexts. Ali et al. [30] also found consistent results in fields other than education, such as manufacturing, suggesting that the relationship between organizational management and motivation is robust and transferable to other fields.

The linear regression analysis conducted in this study showed that motivation and satisfaction predicted 61.5% of organizational management. Similarly, the variable 'commitment' represents the third component of the model, which although less significant, highlights the importance of these variables in predicting organizational management. This is based on the results of positive and significant correlation with all organizational climate variables considered in this research. This result is consistent with the studies of Davis & Wilson [41], who also found a significant correlation between teachers' motivation and commitment, the latter being associated with management processes, although it must be pointed out that the variables are not grouped as precisely as in this study. Likewise, it is important to emphasize that 38.5% of the variance in organizational management is unexplained, which is consistent with the research of Sagredo et al. [42], who also found a significant proportion of unexplained variables that may influence organizational management and were not considered in the present study. Interestingly, the results of the survey of teachers in the professional development program differed slightly from those reported by early childhood education students, because in the former, the variables motivation and satisfaction contributed the most to the multiple regression model regarding management, whereas in early childhood education students, the model that best predicts management is the one that includes all variables [13, 42]. The situation is similar for teachers, where the engagement variable is the most significant.

In this sense, the engagement variable also shows a high correlation, which is why it is not ranked first in the multiple linear regression prediction model. This high correlation between organizational management and commitment observed in this study is supported by research such as that of Sotelo Asef & Figueroa González [29], which highlights the importance of service quality and management processes in the development of commitment. Similarly, Köse & Uzun [27] reported positive correlations between organizational management and educational commitment or between leadership and commitment. These findings are consistent with the existing literature and strengthen the validity of the current results. For this reason, we have included the commitment variable in our proposal for organizational climate management (see Figure 3). Ruiz Quiles et al. [43] have emphasized the correlation between leadership and commitment, suggesting that effective management can promote greater teacher commitment.



Figure 3. Model for managing organizational climate

Furthermore, it is important to consider the importance of organizational climate and how it is managed, not only in the educational context, but in all types of organizations. Organizational climate is crucial and fundamental to the management of leadership and organizational culture. The results of other studies, such as that of Nabella et al. [44], examine the influence of leadership and organizational culture through organizational climate in school leadership. These authors found that organizational climate significantly mediates the relationship between leadership and governance, supporting the idea that organizational climate plays a critical role in the effective management of educational institutions.

As a projection, there are other relevant areas to consider in research on organizational climate in the 21st century. For example, the findings of Zafar et al. [45] on the promotion of pro-environmental behaviors through green organizational climate and organizational identity also provide an interesting perspective. Although this study focused on green human resource practices, the results highlight the importance of a positive organizational climate in promoting desired behaviors within an organization, which can also be transferred to the educational context.

This study is part of a larger investigation; the team has previously researched organizational climate in other educational contexts. In this case, we wanted to investigate higher education. The fact that they come from the field of pedagogy in mathematics education is nothing special, but the context of higher education and initial teacher training is important as there is little research on this topic. The fact that they come from mathematics is rather incidental and is more related to the inclusion criteria. In the future, we want to continue research in this area in order to expand the sample and better generalize the results. In addition, we intend to propose a model based on applied mathematics to contribute directly to leadership and organizational management, even if understanding the importance of the study variables is useful for the development of educational leadership and the figure of the leader [45]. In terms of educational projections, we will advance in the inclusion of environmental variables to adapt to the 21st century generation and to organizations that need to consider sustainability as an essential aspect.

5- Conclusion

Hypothesis 1, which states that the organizational climate variables of motivation, satisfaction, commitment, and organizational management are positively and significantly correlated with each other, is accepted because there is indeed a positive correlation with a significance of .001. The second hypothesis is partially accepted because the multiple linear regression model that best predicts organizational management is the union of motivation and satisfaction, even when commitment is added as a third underlying variable.

To continue with the conclusions, it is necessary to point out that the results of this study confirm a positive and significant correlation between the variables of organizational climate (satisfaction, motivation, commitment, and organizational management). Particularly noteworthy is the influence of motivation and satisfaction, which together predict 61.5% of organizational management. An important aspect is the significance of motivation within an organization and especially in education. Satisfaction is also of fundamental importance. Interestingly, commitment tends to be rated lower in various studies. This could be due to the fact that achieving commitment requires more than just aspects mediated by extrinsic motivation; a sense of belonging and loyalty must also be fostered. This hypothesis will be tested in later studies by the same group.

It should be noted that there are differences in the prediction of organizational management between different populations, e.g., between student teachers in higher education and those in early childhood education, as well as between teachers. These differences suggest that models of organizational management need to be adapted to specific contexts in order to optimize their effectiveness. Undoubtedly, these types of studies are crucial as they underline the fact that contexts are very relevant.

6- Declarations

6-1-Author Contributions

Conceptualization, E.S. and J.Z.; methodology, E.S.; software, E.S. and J.Z; validation, E.S., Y.P., E.L., and J.Z.; formal analysis, E.S., Y.P., E.L., and J.Z.; investigation, E.S., Y.P., E.L., and J.Z.; resources, E.S., Y.P., E.L., and J.Z.; data curation, E.S., Y.P., E.L., and J.Z.; writing—original draft preparation, E.S., Y.P., E.L., and J.Z.; writing—review and editing, E.S., Y.P., E.L., and J.Z.; visualization, E.S., Y.P., E.L., and J.Z.; supervision, E.S.; project administration, E.S.; funding acquisition, E.S., Y.P., E.L., and J.Z. All authors have read and agreed to the published version of the manuscript.

6-2-Data Availability Statement

The data presented in this study are available on request from the corresponding author.

6-3-Funding and Acknowledgements

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6-4-Institutional Review Board Statement

The study was conducted in accordance with the Declaration of Helsinki and approved by the Ethics Committee of the Universidad Católica de la Santísima Concepción (protocol code 04/2022).

6-5-Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

6-6- Conflicts of Interest

The authors declare that there is no conflict of interests regarding the publication of this manuscript. In addition, the ethical issues, including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancies have been completely observed by the authors.

7- References

- [1] Ministerio de Educación. (2011). Law No. 20529, of August 11, 2011. National System for Quality Assurance in Preschool, Primary and Secondary Education and its Supervision. Diario Oficial de la República de Chile, Santiago, Chile. (In Spanish).
- [2] Longobardi, S., Pagliuca, M. M., & Regoli, A. (2022). School climate and academic performance of Italian students: the role of disciplinary behaviour and parental involvement. Statistical Methods and Applications, 31(5), 1355–1373. doi:10.1007/s10260-022-00632-7.

- [3] Berkowitz, R., Iachini, A., Moore, H., Capp, G., Astor, R. A., Pitner, R., & Benbenishty, R. (2017). School Climate. Oxford Research Encyclopedia of Education, Oxford University Press, Oxford, United Kingdom. doi:10.1093/acrefore/9780190264093.013.89.
- [4] Ministerio de Educación Chile. (2015). Framework for Good Management and School Leadership. Ministerio de Educación Chile, Santiago, Chile (In Spanish).
- [5] Fullan, M., & Hargreaves, A. (2014). Capital professional. Morata, Madrid, Spain.
- [6] Cabrera, Ó. M., & Garay, S. (2019). Hacia la medición de la distribución del liderazgo en escuelas efectivas y vulnerables en Chile. Perfiles Educativos, 41(166), 141–159. doi:10.22201/iisue.24486167e.2019.166.58718.
- [7] Sagredo Lillo, E., & Castelló Tarrida, A. (2019). Gestión directiva y clima organizacional en la educación de personas adultas en Chile. Actualidades Investigativas En Educación, 19(2), 1–23. doi:10.15517/aie.v19i2.36895. (In Spanish).
- [8] Chiavenato, I. (2001). Administración de Derechos Humanos. Editorial McGraw-Hill, Quinta edición, México City, Mexico. (In Spanish).
- [9] Yiming, L., Yan, L., & Jinsheng, Z. (2024). Effects of organizational climate on employee job satisfaction and psychological well-being: the role of technological influence in Chinese higher education. BMC Psychology, 12(1), 536. doi:10.1186/s40359-024-01992-3.
- [10] Sagredo-Lillo, E., Salamanca-Garay, I., Espinoza, J., Raby, M. D., Sagredo-Concha, I., & Soto-Fuentes, A. (2023). Trabajo colaborativo para la inclusión educativa en tiempos de pandemia por Covid-19, mediante TIC. Revista Ibérica de Sistemas e Tecnologias de Informação, (E63), 120-133. (In Spanish).
- [11] Sagredo-Lillo, E., Salamanca-Garay, I., Sagredo-Concha, I., Espinoza, J., & Soto-Fuentes, A. (2024). Collaborative Work and Co-teaching as 21st Century Skills for Educating from an Inclusive Perspective in Face-To-Face and Virtual Contexts. Information Technology and Systems, ICITS 2024, Lecture Notes in Networks and Systems, 933, Springer, Cham, Switzerland. doi:10.1007/978-3-031-54256-5_31.
- [12] Schein, E. H. (2010). Organizational culture and leadership (Volume 2). John Wiley & Sons, Hoboken, United States.
- [13] Sagredo-Lillo, E., Salamanca-Garay, I., Castro-Cáceres, R., & Soto-Fuentes, A. (2024). A proposal for organizational climate management in the educational field, based on collaboration in both face-to-face and virtual environments. Revista Ibérica de Sistemas e Tecnologias de Informação, E66, 436-448. (In Spanish).
- [14] de González, M. M., & de Maldonado, I. P. (2007). Organizational climate management: a desirable action in the university. Laurus, 13(24), 290-304. (In Spanish).
- [15] Nasrallah, W. B. F., & Zouari, G. (2024). Organizational culture, compensation systems, decision-making, and efficiency of public higher education institutions: case study of the University of Sfax. Decision, 51(1), 33–56. doi:10.1007/s40622-024-00377-0.
- [16] Maturana, D., y Castillo, E. (2023). Continuing education programs for teacher training. A sample analysis. Un análisis muestral. Comisión Nacional de Acreditación CNA, Santiago, Chile. (In Spanish).
- [17] Lucksnat, C., Richter, E., Henschel, S., Hoffmann, L., Schipolowski, S., & Richter, D. (2024). Comparing the teaching quality of alternatively certified teachers and traditionally certified teachers: findings from a large-scale study. Educational Assessment, Evaluation and Accountability, 36(1), 75–106. doi:10.1007/s11092-023-09426-1.
- [18] Lusquiños, C. S. (2019). Prácticas de Liderazgo distribuido y Mejora Escolar. Evaluación de un ciclo de capacitación de directores. Profesorado, Revista de Currículum y Formación Del Profesorado, 23(2), 131–151. doi:10.30827/profesorado.v23i2.9298. (In Spanish).
- [19] Amanchukwu, R. N., Stanley, G. J., & Ololube, N. P. (2015). A review of leadership theories, principles and styles and their relevance to educational management. Management, 5(1), 6-14.
- [20] Miranda Beltrán, S. (2016). La gestión directiva: un concepto construido desde las comprensiones de los directivos docentes de las escuelas públicas bogotanas. RIDE Revista Iberoamericana Para La Investigación y El Desarrollo Educativo, 7(13), 562-589. doi:10.23913/ride.v7i13.245. (In Spanish).
- [21] Leithwood, K., & Mascall, B. (2009). Effects of collective leadership on academic achievement. Cómo liderar nuestras escuelas, 59-95, Área de Educación Fundación Chile, Santiago, Chile. (In Spanish).
- [22] Schilling-Vacaflor, A., & Gustafsson, M. T. (2024). Towards more sustainable global supply chains? Company compliance with new human rights and environmental due diligence laws. Environmental Politics, 33(3), 422-443. doi:10.1080/09644016.2023.2221983.
- [23] Atkinson, R. C., & Shiffrin, R. M. (2024). Reprint of: Human memory: A proposed system and its control processes. Journal of Memory and Language, 136, 104479. doi:10.1016/j.jml.2023.104479.

- [24] Ruiz, C. (2002). Educational research instruments. Fedupel, Caracas, Venezuela. (In Spanish).
- [25] Sun, R. C. F. (2015). Student Misbehavior in Hong Kong: The Predictive Role of Positive Youth Development and School Satisfaction. Applied Research in Quality of Life, 11(3), 773–789. doi:10.1007/s11482-015-9395-x.
- [26] Baños, R., Ortiz-Camacho, M. del M., Baena-Extremera, A., & Tristán-Rodríguez, J. L. (2017). Satisfacción, motivación y rendimiento académico en estudiantes de Secundaria y Bachillerato: antecedentes, diseño, metodología y propuesta de análisis para un trabajo de investigación. Espiral. Cuadernos Del Profesorado, 10(20), 40–50. doi:10.25115/ecp.v10i20.1011.
- [27] Köse, A., & Uzun, M. (2018). The Relationship between Work Engagement and Perceived Organizational Justice. Educational Administration: Theory and Practice, 24(3), 42–52. doi:10.14527/kuey.2018.012.
- [28] Kitratporn, P., & Puncreobutr, V. (2016). Quality of Work Life and Organizational Climate of Schools Located along the Thai-Cambodian Borders. Journal of Education and Practice, 7(11), 134-138.
- [29] Sotelo Asef, J. G., & Figueroa González, E. G. (2017). The organizational climate and its correlation with the quality of service in a higher education institution. RIDE Revista Iberoamericana Para La Investigación y El Desarrollo Educativo, 8(15), 582– 609. doi:10.23913/ride.v8i15.312.
- [30] Ali, Y., Abdulkadir, M., & Jidka, T. (2016). Teacher Motivation and School Performance, the Mediating Effect of Job Satisfaction: Survey from Secondary Schools in Mogadishu. International Journal of Education and Social Science, 3(1), 24–38.
- [31] Akram, M., Malik, M. I., Sarwar, M., Anwer, M., & Ahmad, F. (2015). Relationship of teacher competence with professional commitment and job satisfaction at secondary level. The AYER, 4(2015), 58-70.
- [32] Malander, N. M. (2016). Síndrome de Burnout y Satisfacción Laboral en Docentes de Nivel Secundario. Ciencia & Trabajo, 18(57), 177–182. doi:10.4067/s0718-24492016000300177. (In Spanish).
- [33] Borges del Rosal, Á. (2017). Metodología observacional. Personalidad, Evaluación y Tratamiento Psicológico, Barcelona, Spain. (In Spanish).
- [34] Arnau Grass, J. (1995). Methodology of psychological research. Síntesis, Madrid, Spain. (In Spanish).
- [35] Monje, C. (2011). Metodología de la Investigación Cuantitativa y Cualitativa, Guía Didáctica. Colombia: Universidad Sur Colombiana. Social Communication and Journalism Program, Facultad de Comunicaciones Humanas, Programa de Comunicación Social y Periodismo, Bogotá, Colombia. (In Spanish).
- [36] Hernandez, R., Fernandez, C., & Baptista, P. (2010). Research methodology. McGraw-Hill, Mexico City, Mexico. (In Spanish).
- [37] Otzen, T., & Manterola, C. (2017). Técnicas de Muestreo sobre una Población a Estudio. International Journal of Morphology, 35(1), 227–232. doi:10.4067/S0717-95022017000100037.
- [38] Valles, M. (1999). Qualitative social research techniques. Reflexión metodológica e investigación social. Síntesis, Madrid, Spain. (In Spanish).
- [39] Keskin, S., Daskiran, I., & Kor, A. (2007). Factor analysis scores in a multiple linear regression model for the prediction of carcass weight in akkeci kids. Journal of Applied Animal Research, 31(2), 201–204. doi:10.1080/09712119.2007.9706664.
- [40] Saldaña, M. R. (2016). Goodness-of-fit tests for a normal distribution. Revista Enfermería del Trabajo, 6(3), 114. (In Spanish).
- [41] Davis, J., & Wilson, S. M. (2000). Principals' Efforts to Empower Teachers: Effects on Teacher Motivation and Job Satisfaction and Stress. The Clearing House: A Journal of Educational Strategies, Issues and Ideas, 73(6), 349–353. doi:10.1080/00098650009599442.
- [42] Francescato, D., Porcelli, R., Mebane, M., Cuddetta, M., Klobas, J., & Renzi, P. (2006). Evaluation of the efficacy of collaborative learning in face-to-face and computer-supported university contexts. Computers in human behavior, 22(2), 163-176. doi:10.1016/j.chb.2005.03.001.
- [43] Ruiz Quiles, M., Moreno-Murcia, J. A., & Vera Lacárcel, J. A. (2018). Del soporte de autonomía y la motivación autodeterminada a la satisfacción docente. European Journal of Education and Psychology, 8(2), 68. doi:10.30552/ejep.v8i2.150.
- [44] Nabella, S. D., Rivaldo, Y., Kurniawan, R., Nurmayunita, Sari, D. P., Luran, M. F., Amirullah, Saputra, E. K., Rizki, M., Sova, M., Sidik, M., Nurhayati, & Wulandari, K. (2022). The Influence of Leadership and Organizational Culture Mediated by Organizational Climate on Governance at Senior High School in Batam City. Journal of Educational and Social Research, 12(5), 119–130. doi:10.36941/jesr-2022-0127.
- [45] Zafar, H., Ho, J. A., Cheah, J. H., & Mohamed, R. (2023). Promoting pro-environmental behavior through organizational identity and green organizational climate. Asia Pacific Journal of Human Resources, 61(2), 483–506. doi:10.1111/1744-7941.12347.