
MANAGEMENT, MARKETING, ECONOMIC INFORMATICS
AND CYBERNETICS

SUBSTANTIAL VERSUS FUNCTIONAL PRINCIPAL AND THEIR INFLUENCE ON THE SUCCESS OF THE IMPLEMENTATION PROCESS OF ALTERNATIVE LEARNING TEACHING AND ASSESSMENT IN HIGH SCHOOLS IN ISRAEL

Sofy AMNONY

West University of Timisoara, Timisoara, Romania – Faculty of Economics and Business
Administration
sofyam100@gmail.com

Abstract: *The article deals with two main types of school principals, a substantial principal and a functional principal, which were discovered during research, conveying the influence of principals' different management styles on alternative learning, teaching and assessment processes in high schools in Israel. The full research was a two-phase research, a quantitative phase and a qualitative phase, carried out in 30 schools throughout Israel and included 30 principals, 340 teachers and 337 students. The main findings of the research indicated that a principal of an substantial type prominently and significantly promotes alternative learning and evaluation processes, while a functional principal does not bring a significant contribution, and even hinders this process. This can be clearly seen by examining the relationships between the different variables of the research, when, for example, strong, significant and positive relationships were found between a variable such as an substantial management style and variables such as teaching and learning using alternative methods or assessment using alternative methods, as opposed to strong, significant, but negative relationships between those last two variables, and a variable of functional management style of the school principal. The article also includes conclusions as well as recommendations for exposing school principals to their strengths, which must be preserved, and also indirectly to their weaknesses, which make it difficult to implement alternative assessment processes, in order to additionally train themselves in diverse management habits.*

Keywords: Substantial manager; functional manager; alternative assessment;

JEL Classification: I21, J53

1. Introduction

The current research combines quantitative research methods with qualitative research methods, in two phases. The integrative method is defined as the collection or analysis of data, simultaneously or sequentially, in a qualitative and quantitative research method (Creswell, J. W. 2014).

The purpose of combining the methods in this research is to enrich the explanations of the findings that will be obtained in the quantitative part of the research and to obtain a broad and deep picture of the application of the alternative assessment in the classroom and the factors influencing this application. According to Johnson (2019), the combination of

methods may provide a comprehensive and useful answer to the research questions, more than using one method.

The first phase of the research was only the quantitative part(pilot). In this part of the research, school principals, teachers and students of different age groups, from high schools throughout Israel, were sampled (23 school principals, 281 teachers and 279 students).

From the first phase of the research, it was found that there are several mixes of different management styles of the high school principals, where each style that makes up the mix, has a different weight (prominence). The management style mixes found according to Yitzhak Calderon Adiges' "Management Styles" model were actually divided, according to the nature of the respondents' answers to the questions/statements, into two main categories, where in each category there are minor changes between the prominence of the management styles (P, A, I, E).

The registration of the management styles was carried out from left to right, this is in accordance with the dominance of a certain style, for example, the registration of the PAEI management style for a certain school principal indicates that this school principal has a main style prominence of type P, less style prominence than the previous type A, less style prominence than the previous type E and less style prominence than all the previous ones Type I.

The first category includes the following management style mixes: PAEI, APIE, PAIE, And the second category includes the following management style mixes: EIPA, EIAP, IEPA.

The second phase of the research was an expansion of the previous quantitative research to 30 schools (30 school principals, 340 teachers and 337 student, total), and in addition, qualitative research which included interviews with 5 school principals and 10 parents of students.

2. Research hypotheses, variables, research model

My research is partially based on the model described above and examines the relationship between management style and the implementation of alternative assessment in high schools in Israel.

2.1. Research hypothesis

H1. There is a correlation between the variable "school management" and the variable 'teaching and learning using alternative methods".

H2. There is a correlation between the variable "school management" and the variable "assessment using alternative methods".

H3. There is a correlation between the variable "school principal management style" and the variable "teaching and learning using alternative methods".

H3.1. There is a correlation between the variable "functional/technical management styles" and the variable "teaching and learning using alternative methods".

H3.2. There is a correlation between the variable "substantial/essential management styles" and the variable "teaching and learning using alternative methods".

H4. There is a correlation between the variable "school principal management style" and the variable "assessment using alternative methods".

H4.1. There is a correlation between the variable "functional/technical management styles" and the variable "assessment using alternative methods".

H4.2. There is a correlation between the variable "substantial/essential management styles" and the variable "assessment using alternative methods".

H5. There is a correlation between the variable "school management" and the variable 'school principal management style".

H5.1. There is a correlation between the variable "functional/technical management styles" and the variable "school management".

H5.2. There is a correlation between the variable "substantial/essential management styles" and the variable "school management".

H6. There is a correlation between the variable "teaching and learning using alternative methods" and the variable "academic results of students".

H7. There is a correlation between the variable "assessment using alternative methods" and the variable "academic results of students"

H8. There is a correlation between the variable "support from parents" and the variable "school management".

H9. There is a correlation between the variable "municipal and school inspectors' support" and the variable "school management".

2.2. The research model and variables

Independent variable: School principal management style

Independent variable: School management

Independent variable: Parents' support

Independent variable: Municipal and school inspector support

Dependent variables: Teaching and learning with alternative methods

Dependent variables: Assessment of performance using alternative methods

Dependent variables: Academic results of students

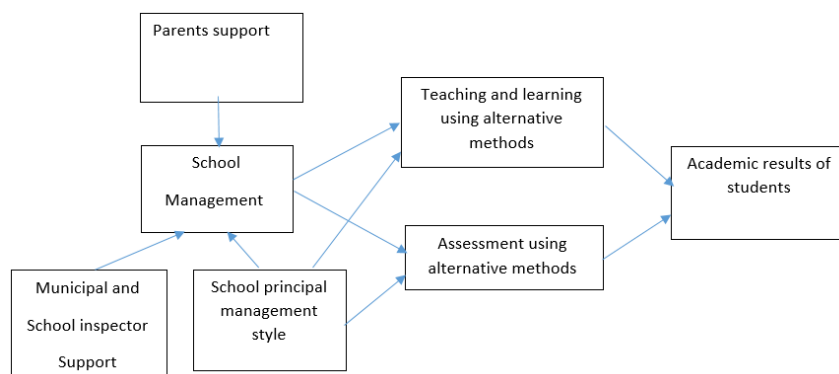


Figure 1: The research model

3. The tools for analyzing the research findings

3.1. The Pearson tool

The Pearson tool is a statistical method for examining the relationship between two quantitative variables. The origin of the name is from the measuring tool of Carl Pearson, an English statistician who developed the method at the end of the 19th century (Mukaka, M. M. ,2022). The tool calculates Pearson's correlation coefficient, usually denoted r (r), which ranges from -1 to 1. Values close to 1 or -1 indicate a strong relationship (positive or negative, respectively) between the variables, while a value close to zero indicates the absence of a linear relationship between them (Schober, P., Boer, C., & Schwarte, L. A. ,2018).

3.2. Linear Regression

Linear regression is a simple and common statistical method for analyzing the relationship between two variables. It is used to predict the value of one variable, called a dependent variable, based on the value of another variable, called an independent variable (James, G., Witten, D., Hastie, T., & Tibshirani, R. ,2021).

Linear regression tries to find the best straight line that describes the relationship between the two variables. This line allows us to predict future values of the dependent variable given new values of the independent variable (Cohen, J., Cohen, P., West, S. G., & Aiken, L. S., 2020).

4. The results of the quantitative part

4.1. The results of the quantitative part (Pearson tool)

- There is a correlation between the variable "school management" and the variable "teaching and learning using alternative methods". The relationship was found to be strong, positive and significant, meaning that the higher the "school management" variables, the higher the "teaching and learning using alternative methods" variables.
- There is a correlation between the variable "school management" and the variable "assessment using alternative methods". The relationship was found to be strong, positive, and significant, meaning that the higher the "school management" variables, the higher the "alternative method assessment" variables.
- As shown in tables 1 and 2 below, there is a correlation between the variable "functional/technical management styles" and the variable "teaching and learning using alternative methods". There is a correlation between the variable "substantive/essential management styles" and the variable "teaching and learning using alternative methods". The findings are consistent with the research hypotheses. The management styles "producer" and "administrator" are strongly associated, pronounced and negative with the variable "teaching using alternative methods" (according to the principal, also teachers and students). That is, the higher the variable "teaching using alternative methods", the less functional/technical the manager's management style. In contrast, the management styles "integrator" and "entrepreneur" are associated with the variable "teaching through alternative methods" (according to the principal, also the teachers and students). That is, the higher the variable "teaching using alternative methods", the more substantive/essential the manager's management style.

Table 1: H3 and sub-hypotheses(school principals-teachers)

Teachers-Principals	S.P: management style (Producer)	S.P: management style (Administrator)	S.P: management style (Entrepreneur)	S.P: management style (Integrator)	Teacher: Teaching and learning with alternative methods
Teacher: Teaching and learning with alternative methods	-.717**	-.575**	.639**	.677**	
S.P: Teaching and learning with	-.907**	-.796**	.837**	.889**	.699**

alternative methods					
---------------------	--	--	--	--	--

Table 2: H3 and sub-hypotheses(school principals-students)

Students-Principals	S.P: management style (Producer)	S.P: management style (Administrator)	S.P: management style (Entrepreneur)	S.P: management style (Integrator)	S.P: Teaching and learning with alternative methods
S.P: Teaching and learning with alternative methods	-.909**	-.794**	.838**	.894**	
Students: Teaching and learning with alternative methods	-.879**	-.712**	.806**	.812**	.863**

- As shown in tables 3 and 4 below, there is a correlation between the variable "functional/technical management styles" and the variable "assessment using alternative methods". There is a correlation between the variable "substantive/essential management styles" and the variable "assessment using alternative methods." There is a correlation between the variable "substantive/essential management styles" and the variable "assessment using alternative methods." That is, the higher the variable "assessment by alternative methods", the less functional/technical the manager's management style. In contrast, the management styles "integrator" and "entrepreneur" are associated with the variable "assessment using alternative methods". That is, the higher the variable "assessment using alternative methods", the more substantive/essential the manager's management style.

Table 3: H4 and sub-hypotheses (school principals-teachers)

Teachers-Principals	S.P: management style (Producer)	S.P: management style (Administrator)	S.P: management style (Entrepreneur)	S.P: management style (Integrator)	Teacher: Assessment of performance using alternative methods
Teacher: Assessment of performance using alternative methods	-.860**	-.701**	.785**	.800**	
S.P: Assessment of	-.815**	-.734**	.794**	.760**	.794**

performance using alternative methods					
---------------------------------------	--	--	--	--	--

Table 4: H4 and sub-hypotheses (school principals-students)

Students-Principals	S.P: management style (Producer)	S.P: management style (Administrator)	S.P: management style (Entrepreneur)	S.P: management style (Integrator)	S.P: Academic results of students
S.P: Academic results of students	-.807**	-.719**	.790**	.745**	
Students: Assessment of performance using alternative methods	-.900**	-.736**	.839**	.820**	.791**

- There is a correlation between the variable "functional/technical management styles" and the variable "school management". There is a correlation between the variable "substantive/essential management styles" and the variable "school management." The management styles "producer" and "administrator" are strongly related, significant and negative with the variable "school management".). In contrast, the management styles "integrator" and "entrepreneur" are associated with the variable "school management".
- There is a correlation between the variable "teaching and learning using alternative methods" and the variable "academic results of students". The relationship was found to be strong, positive and significant, meaning that the higher the "teaching using alternative methods" variables, the higher the "academic results of students" variable.
- There is a correlation between the variable "assessment using alternative methods" and the variable "academic results of students". The relationship was found to be strong, positive, and significant, meaning that the higher the "assessment using alternative methods" variables, the higher the "academic results of students" variables.
- There is a correlation between the variable "support from parents" and the variable "school management". the relationships between "parental support" and "school management", both in each group separately and between the groups, are positive, strong, and significant.
- There is a correlation between the variable "support for municipal inspectors and schools" and the variable "school management." there is a positive and significant, albeit relatively weak, relationship between school management and "support of municipal and school inspectors" according to the teachers' opinion. However, this relationship, according to the managers' opinion, does not exist. The relationship is very weak and insignificant.

4.2. The results of the quantitative part (Linear Regressions)

The regressions presented are intended to predict the main dependent variable, the student's success in his studies, using all the variables – management style, school management, parental and municipal support, use of alternative teaching and assessment

using alternative tools. The regressions were performed on each population of respondents individually.

The result of the first regression, based on principals' data, shows that the general model predicts very strongly (0.80) and significantly ($F=169.55$, $p < 0.000$) the predictive variable that is student success.

The result of the second regression, based on teachers' data, also shows that the general model is a very strong and significant predictor of the predicted variable – which is student success ($F=413.8$, $p < 0.000$).

The result of the third and final regression, based on student data, also shows that the general model is a very strong and significant predictor of the predicted variable - student success ($F=585.29$, $p < 0.000$).

5. The results of the research in the qualitative part

5.1. Results of the analysis of interviews of the school principals

The findings of the interviews support the findings of the quantitative research in a large number of points

A school principal who is more substantial, holds joint team meetings on alternative learning and assessment, makes sure to train the staff and hold meaningful and relevant trainings, further training and seminars, this in order to provide the tools and knowledge needed to implement alternative assessment in the school, for the benefit of the students' success. In addition, this school principal supports the students' participation in the assessment and learning processes using the alternative assessment method, which significantly increases their motivation for learning and their desire to succeed.

There are also assessment and control processes regarding learning and assessment in the alternative method, the purpose of which is to draw lessons and build and promote programs to improve processes, together with the professional staff that includes professional teachers, subject coordinators, an assessment and measurement coordinator, a pedagogical consultant, and vice school principals in the high school during the school year. The findings of the interviews with the school principals reinforce the findings from the quantitative research, which indicates that learning and assessment using the alternative assessment method has a distinctly positive effect on the students' achievements and their motivation to succeed. A vast majority of the school principals, who also according to the results of the quantitative research were found to be substantial school principals, claim that there has been a considerable improvement in student achievement over the past few years, since the alternative assessment method was implemented in their school.

Another point - from the findings of the qualitative research, we can summarize and say that a school principal who is considered substantial, who regularly shares the students' parents in the learning and evaluation processes that take place in the school and takes their opinion into account, helps raise the students' achievements during the school year.

5.2. Results of the analysis of interviews of the students' parents

According to the results of the quantitative research, the parents in schools whose school principals are substantial, indicate that they prefer the alternative assessment method over traditional assessment, because according to them an alternative assessment method is more significant for their children, increases their motivation for learning, is more intriguing, in-depth and answers. Realize the natural diversity that exists between the students so that they can reach the maximum of the ability that lies in each and every one of them. A school principal who is more substantial allows the professional staff a wider choice of alternative assessment tools and alternative teaching and learning methods adapted to the needs of the students.

We can summarize and say that in the schools whose management style is more fundamental, there is a wider use of the alternative learning and assessment method, the

participation of the parents' management in the different types of activities that take place in the school, allows the teaching staff to choose different and varied tools for learning and assessment, which increases the students' achievements and the motivation and desire to achieve high achievements.

6. Conclusions from the research

- In the first category of schools, there are infrequent meetings regarding alternative assessment, while the second category has frequent meetings on this subject.
- The first category prioritizes high achievements even at the cost of educational processes, whereas the second category strives for high achievements without compromising education.
- Competition among teachers for student results is significantly higher in the first category.
- Principals in both categories claim their schools address field-specific issues effectively, but teachers' responses suggest otherwise for the first category.
- Flexibility in teaching subjects is limited in the first category, but allowed in the second category.
- While both claim to support teacher initiatives and innovations, teacher responses indicate issues in the first category.
- Teachers' opinions on management's efforts to build a team are divided in the first category.
- Teachers' input in decision-making and conflict resolution is less considered in the first category.
- Incentives for teachers are primarily non-material in the second category, while in the first category, material incentives are minimal.
- Academic results in the second category show improvement attributed to innovative teaching methods, while the first category's results remain inconsistent.
- Planning and control of alternative assessment processes are more decentralized in the second category.
- Teachers in the second category have more autonomy in choosing assessment tools.
- Alternative assessment tools are used more extensively in the second category compared to the first category.
- Students in the second category feel like partners in the learning process, while this feeling is limited in the first category.
- Learning with alternative assessment methods is more engaging and motivating in the second category.
- Both students and teachers prefer alternative assessment over traditional tests.
- Teachers in the second category are better equipped and trained for alternative assessment implementation.
- Resources for alternative assessment are more accessible to teachers in the second category.
- Students in the second category have more freedom to choose evaluation tools and topics compared to the first category.

7. Recommendations

- Conduct frequent meetings between school management and teachers to discuss alternative assessment.
- Foster an ongoing dialogue between teachers and students for feedback, enhancing student participation, interest, motivation, and success.
- Find a balance between educational achievement and maintaining effective educational processes.

- Strengthen the relationship between school administration and teaching staff to address field-specific issues and streamline decision-making and development plans.
- Collaboratively construct and control the annual work plan for alternative assessment involving the entire teaching staff.
- Grant teachers more autonomy in choosing assessment tools and subjects, considering student input, to improve academic results.
- Enhance support for teachers' innovative initiatives and projects.
- Develop a comprehensive program for building a cohesive school team.
- Promote negotiation as a conflict resolution tool at the team level.
- Streamline professional training, teacher registration for extracurricular training, and teacher evaluation to reflect their activities fairly.
- Cultivate a culture of professional cooperation among teachers, encouraging sharing of teaching materials.
- Identify and secure resources needed for teaching and evaluation activities.
- Explore creative options for material incentives for teachers using alternative assessment methods, along with non-material incentives.
- Improve transparency with the teaching staff regarding support from local authorities and supervision, involving teachers in discussions to enhance support for alternative assessment methods and student achievements.

8. Acknowledgments

I would like to thank my supervisor Professor Maria Madela Abrudan, Professor Nicola Bibu, for the support and help with the research, as well as my dear family.

References

1. Altman, N., & Krzywinski, M. (2022). Linear regression. *Nature Methods*, 19(2), 167-168.
2. Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2020). *Applied multiple regression/correlation analysis for the behavioral sciences*.
3. Creswell, J. (2013). *Qualitative Inquiry and Research Design: Choosing among Five Approaches*. Sage Publications.
4. Creswell, J. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Sage Publications.
5. Ernst, M.D. & Palazzo, J. (2022). Comparing correlation coefficients: A review and some new results. *Statistical Methods in Medical Research*, 31(9), 1692-1721
6. Ernst, M.D. (2004). Permutation methods: A basis for exact inference. *Statistical Science*, 19(4), 676-685
7. Galili, T., & O'Connell, M. (2023). *Linear Regression in R: A Modern, Tidy Approach*. Chapman and Hall/CRC
8. James, G., Witten, D., Hastie, T., & Tibshirani, R. (2021). *An introduction to statistical learning: With applications in R*. Springer.
9. Johnson, A. (2018). *An Analysis of Semi-Structured Interviews in Educational Research*. *Educational Studies Journal*, 30(4), 567-584.
10. Johnson, L. (2019). *Research Methods: Integrating Quantitative and Qualitative Approaches*. New York: Oxford University Press.
11. Mukaka, M.M. (2012). A guide to appropriate use of correlation coefficient in medical research. *Malawi Medical Journal*, 24(3), 69-71
12. Schober, P., Boer, C., & Schwarte, L.A. (2018). Correlation coefficients: Appropriate use and interpretation. *Anesthesia & Analgesia*, 126(5), 1763-1768