



The Effect of Workplace Climate on Psychological Capital and Informal Learning of Physical Education Teachers

Zahra Ghasemi¹  Nasser bai^{*2} ,

1. Department of Sport Management, Azadshahr Branch, Islamic Azad University, Azadshahr, Iran.
Zg703062@gmail.com
2. Department of Sport Management, Azadshahr Branch, Islamic Azad University, Azadshahr, Iran.
Nasser_bay@yahoo.com (Corresponding Author)

Article Info

Abstract

Article type: Research Article

Received:
13 December 2023

Accepted:
25 December 2023

Published online:
28 December 2023

Investigating the effect of workplace climate on psychological capital and informal learning of physical education teachers was the aim of this study. In order to carry out this research, a survey method was used. All physical education teachers of Golestan province constituted the statistical population of this research (575 Teachers). The number of samples required in this research was 231 teachers based on Cochran's formula. The sample was selected in a stratified manner. The required data were collected through the questionnaires of workplace climate (McMillan, 2016), psychological capital (Dudasova et al., 2021) and informal learning (Decius et al., 2019). After completing the distribution of the questionnaires and recording their data, the final analyses were performed with descriptive and inferential statistics. The results showed that the workplace climate has a positive and significant effect on the psychological capital of physical education teachers. Also, the effect of workplace climate on informal learning of physical education teachers was positive and significant. The results indicated that psychological capital has a positive and significant effect on the informal learning of physical education teachers in Golestan. Finally, it was determined that the workplace climate has a positive and significant effect on the informal learning of physical education teachers with the mediating role of psychological capital. It is suggested that managers should try to strengthen the positive components of their schools' climate such as participation, cooperation, and constructive competition.

Keywords:

Informal Learning, Job Training, Psychological Capital, Workplace Climate.

Cite this article:

Bai, N., & Ghasemi, Z. (2024). The Effect of Workplace Climate on Psychological Capital and Informal Learning of Physical Education Teachers. *Archives in Sport Management and Leadership*, 1(2), 82-90. doi: [10.22108/asml.2024.140085.1039](https://doi.org/10.22108/asml.2024.140085.1039)



Introduction

In recent years, administrators have increasingly called for improving the effectiveness of the teaching and learning process of students, and consider effective teacher learning to be a vital tool for achieving these goals (Korthagen, 2017). Despite this recognition for the importance of teacher learning, various studies have shown that formal professional programs aimed at promoting teacher learning are often ineffective, as this does not include a scientific understanding of how teachers learn in the workplace (Bakkenes et al., 2010). In addition, formal teacher training programs face critical challenges in determining how to motivate teachers to learn, involving teachers equally in the learning process, and how to help teachers integrate new ideas into their day-to-day actions and programs, which makes it necessary to review teacher empowerment processes and programs (Kyndt et al., 2016). At the same time, researchers are increasingly valuing informal learning in the working teacher environment, as there is a belief that informal learning evolves from teacher initiatives and searches, and is increasingly occurring and used in teachers' moment-to-moment working lives (Kyndt et al., 2016).

Many recent studies have confirmed the importance of informal learning not only for teachers in terms of increasing their skills and educational knowledge and developing their beliefs about education, but also to improve students' academic progress (Verberg et al., 2013; Louws et al., 2017). Informal learning in the workplace is defined as a type of unplanned learning that takes place outside the formal learning areas established within the organization and is mainly self-directed, self-initiating and curiosity-based, which can lead to empowerment of individuals (Cerasoli et al., 2018). Lohman (2006) also believes that informal learning can be characterized as ownership, learner, independent, and with informal timelines carried out away from formal educational contexts. Today, informal learning at work accounts for most of workplace learning, although the exact percentage cannot be stated (Clardy, 2018). Given the importance of informal learning for teachers in their workplace, there is an increasing interest in examining the factors influencing informal learning for teachers, and becoming aware of how teachers can better perform their informal learning activities in their workplace and what are the facilitators of it has become one of the important research areas in educational topics (Huang & Wang, 2021).

Because a significant part of informal teacher learning is done in the school environment, the school climate can be considered a factor in encouraging or limiting informal teacher learning (Huang & Lai, 2020). The school climate is considered one of the key components of social characteristics in terms of relationships between students and teachers, learning and teaching practices, values and norms (Thapa et al., 2013). The school climate can be considered all the characteristics within the school (including relationships, resources, rules, norms and structures) that affect people's behavior and distinguish it from other schools (Konold et al., 2018). The school climate perceived by teachers significantly affects their cognitive development, behavioral function and personal feelings (Malinen & Savolainen, 2016). The presence of a supportive climate in schools makes teachers develop their interactions with colleagues well, become more involved in participatory processes, communicate with students, be more motivated to search for knowledge and search information, and take every opportunity to develop their knowledge and abilities, which can help them learn more informally (Huang & Wang, 2021).

On the other hand, the proper use of capital within schools, such as psychological capital, can help improve the informal learning of teachers. Enkvick (2005) defines psychological capital as the ability of people to successfully reflect their economic, social and human capital to the organization with the aim of increasing productivity. In other words, positive psychological Capital focuses on the positive aspects and strengths of people rather than their negative aspects and weaknesses. Accordingly, psychological capital involves positive emotions that can have a wide impact on people's behavior by expanding the boundaries of consciousness, encouraging them to change their circumstances and explore different topics (Fredrickson, 2013). On the other hand, psychological capital increases employee flexibility and makes them struggle to perform better in different situations. Psychological capital also leads to increased extroversion of employees. Extroverted employees interact well with others and do better in group work, which can help them learn more informally. Therefore, it can be expected that with the improvement of the psychological capital of teachers, their involvement in informal learning processes will increase (Huang & Wang, 2021).

Because of the importance of learning in the career success of the human resources of different organizations, various studies have examined the factors that contribute to it. Choi et al. (2020) found in their research that psychological capital indirectly affects job performance through informal learning. In addition,

the indirect impact of psychological capital on employees' job performance through informal learning became stronger with low levels of individual-organization and individual-job fitness. Agbejule et al. (2021) investigated the role of organizational atmosphere, and vertical and horizontal trust in team learning in their research. Analysis of the data showed that vertical and horizontal trust affects the organizational atmosphere, which, in turn, determines team learning. In addition, although both types of trust played a role in the organizational atmosphere, the results showed that horizontal trust had a greater impact on the organizational atmosphere and team learning. Khandakar & Pangil (2021) studied the role of emotional commitment on the relationship between human resource management practices and informal learning in the workplace. The results showed that human resource management practices have a positive effect on employee emotional commitment and informal learning. The results also showed that the effect of human resource management practices on informal learning in the workplace is mediated by emotional commitment. Santoro (2022) studied the relationship between goal orientation and informal learning strategies in the workplace with the mediating role of internal motivation. The hypotheses were tested on a sample of 244 bank managers from Brazilian banks. The results show that goal orientation is positively correlated with both informal cognitive and behavioral learning strategies in the workplace. Zia et al. (2022) investigated the role of informal learning as a mediating mechanism for the relationship between learning atmosphere and organizational citizenship behavior. The results show that the atmosphere of facilitating and appreciating learning has a negative relationship with informal learning and avoidance of error with informal learning. The analyses also showed that informal learning mediates the relationship between the dimensions of the learning atmosphere and organizational citizenship behavior. In addition, informal learning is significantly associated with organizational citizenship behavior. Han et al. (2022) found that trust and job characteristics affect informal learning, and informal learning mediates the relationship between trust and job characteristics and job performance.

Today, in educational environments, physical education teachers need new skills and abilities to be able to succeed in their professional development in accordance with the changes in the work environment and the needs of students. Changes in educational environments such as schools are so widespread and rapid that it may be acknowledged that formal learning courses and measures for physical education teachers cannot respond to these changes, as many of these courses are repetitive and will be held in the future without assessing the potential needs of physical education teachers. Accordingly, physical education teachers need to use informal learning to grow and develop their careers alongside formal learning processes. The informal learning process is a teacher-centered process in which teachers willingly try to use different resources to learn new things. Such a process is a self-development and self-initiating action that can bring many benefits such as increasing teacher motivation, reducing formal learning costs, reducing the workload of managers, improving the learning environment in schools, encouraging teachers to learn collectively, and diversifying teacher work processes. It is therefore necessary that informal learning as a culture and a value is institutionalized within schools and that managers use such a process as much as possible as a complementary process for formal learning. To promote informal learning in physical education teachers, their work environment needs to be changed in a way that can facilitate their learning. Accordingly, the existence of a working environment with a positive atmosphere and atmosphere where the school principal always pays attention to the educational and working needs of teachers, participation and cooperation is one of its most important components, positive and quality relationships are established among teachers and colleagues as well as students, and teachers always feel that they have the right freedom of action to perform their work tasks can on the one hand add to the value of intangible capital of the work environment, such as psychological capital, and on the other hand, provide a suitable environment for the development of positive work behaviors such as informal learning. Despite the importance of this issue, informal learning is underestimated for a variety of reasons, such as the lack of belief of managers in it or the lack of support of schools and the belief in schools is that formal learning courses meet the needs of teachers. So doing this research can demonstrate the importance of informal learning and highlight the role of school climate and psychological capital in its development. According to the above, the main objective of this study is to study the effect of the workplace climate on psychological capital and informal learning of physical education teachers.

Research Methods

This study is practical and a survey research project was used to implement it. All physical education teachers in Golestan province were the statistical community of this study (575 people). The number of samples required in this study was determined by the Cochran formula of 231 teachers. Given that physical education teachers are teaching at two levels, primary and secondary, and their number is not the same in two levels, the sample was selected in a stratified manner. Three standard questionnaires were used to collect the research data which are described below:

The Workplace Climate

The perception of the workplace climate by physical education teachers was evaluated using the Macmillan questionnaire (2017). The 16-item scale was compiled on a five-value scale and its internal reliability was estimated by McMillan (2016) 0.88.

Psychological Capital

The psychological capital questionnaire of Dudasova et al. (2021) was used to assess the amount of psychological capital of physical education teachers in their workplace. This scale has 12-item and its internal reliability was reported by Dudasova et al. (2021) 0.93.

Informal Learning

The informal learning rate of physical education teachers in their workplace was examined by the 10-item scale of Decius et al. (2019). This tool is rated with a 5-point Likert scale and its internal reliability is estimated 0.89.

The opinions of 5 PhDs in sports management were used to examine the validity of the research scales. To do this, the research scales were emailed to these specialists and in a 20-day period, the suggestions of these people were received and changes in the written form of some items were made. The reliability of the research scales was also examined in a preliminary study. To do this, the scales were provided to 40 physical education teachers and completed by them. The results of the Cronbach's Alpha test showed that the reliability levels of the variables of the Workplace Climate, Psychological Capital and Informal Learning are 0.81, 0.79 and 0.87 respectively, which these values confirm the quality of the research tool. Descriptive statistical methods (SPSS version 25) and inferential methods (Smart PLS version 3) were used to analyze the data.

Findings

The research findings were analyzed in two sections: descriptive and inferential. In the descriptive part, the results showed that most of the research sample had a master's degree (151 teachers). Also, the results of the descriptive part showed that the age range of the studied sample is 41 years and more (119 teachers). It was also found that most of the respondents have work experience of 21 years and above (97 teachers).

Table 1- Descriptive analysis of variables

Variables	Average	Standard deviation
Workplace Climate	3.52	0.73
Psychological Capital	3.46	0.72
Informal Learning	3.39	0.83

Also the descriptive analysis of the data showed that the three variables of workplace, psychological capital, and informal learning have averages of 3.52, 3.46, and 3.39, respectively (Table 1).

Table 2- Data distribution analysis

Variables	Z Value	Sig
Workplace Climate	2.118	0.001
Psychological Capital	1.774	0.004
Informal Learning	1.879	0.003

The results of the Kolmogorov-Smirnov test indicated that the distribution of research data is not normal (Table 2).

The Fornell & Larcker triple criteria were considered for internal consistency or reliability of structures. Investigating the factor load of the observed variables as the first criterion showed that the factor loads and t values obtained for the observed variables were significant at the level of 0.01 (Fig. 2).

The second criterion for assessing the reliability of structures is the Dillon - Goldstein coefficient or

composite reliability (internal consistency index of the model of measurement) of structures, which should be more than 0.7. The values obtained for this index also showed an acceptable reliability of the structures (Table 3). The Average Variance Extracted (AVE) is the third criterion for assessing the internal consistency of the constructs, which is presented in Table 3. For this criterion, values higher than 0.5 for this criterion are acceptable. According to the results of Table 3, the constructs and their indicators have acceptable reliability for use in research.

Table 3- Indicators of research reliability

Constructs	Composite Reliability	Average Variance Extracted	Cronbach's Alpha
Workplace Climate	0.948	0.535	0.940
Psychological Capital	0.932	0.538	0.921
Informal Learning	0.954	0.679	0.944

According to the results of Table 4, it can be stated that the average root of the extracted variance of the research structures is more than the correlation between the structures. Therefore, the constructs had good diagnostic validity.

Table 4- Results of the diagnostic validity of the research structures

Row	Constructs	1	2	3
1	Workplace Climate	0.732		
2	Psychological Capital	0.547	0.733	
3	Informal Learning	0.389	0.619	0.824

The Construct Cross Validated Community presented in Table 5 showed that the predictive power of the research structural model is appropriate.

Table 5- Results of Construct Cross Validated Community of Research Structures

Constructs	SSO	SSE	Q ² (=1-SSE/SSO)
Workplace Climate	3696	2442.189	0.339
Psychological Capital	2772	1898.948	0.315
Informal Learning	2310	1287.154	0.443

The results of the research showed that the effect of workplace climate on psychological capital was positive and significant ($\beta=0.914$, $t=97.537$). Also, the results showed that the effect of workplace climate on the informal learning of physical education teacher was positive and significant ($\beta=0.582$, $t=7.848$). It was also found that psychological capital has a positive and significant effect on the informal learning of physical education teachers ($\beta=0.368$, $t=4.246$). Finally, the results of the Sobel test showed that the effect of the work environment on the informal learning of physical education teachers with the mediating role of psychological capital is positive and significant ($\beta=0.289$, $t=4.226$) (Table 6 and Figures 1 and 2).

Table 6- Direct and indirect effects in the model

Effects in the model	β	t	Sig
Effect of workplace climate on psychological capital	0.914	97.538	0.000
Effect of workplace climate on informal learning	0.582	7.848	0.000
Effect of psychological capital on informal learning	0.368	4.246	0.000
Effect of workplace climate on psychological capital with mediating role of informal learning	0.289	4.226	0.000

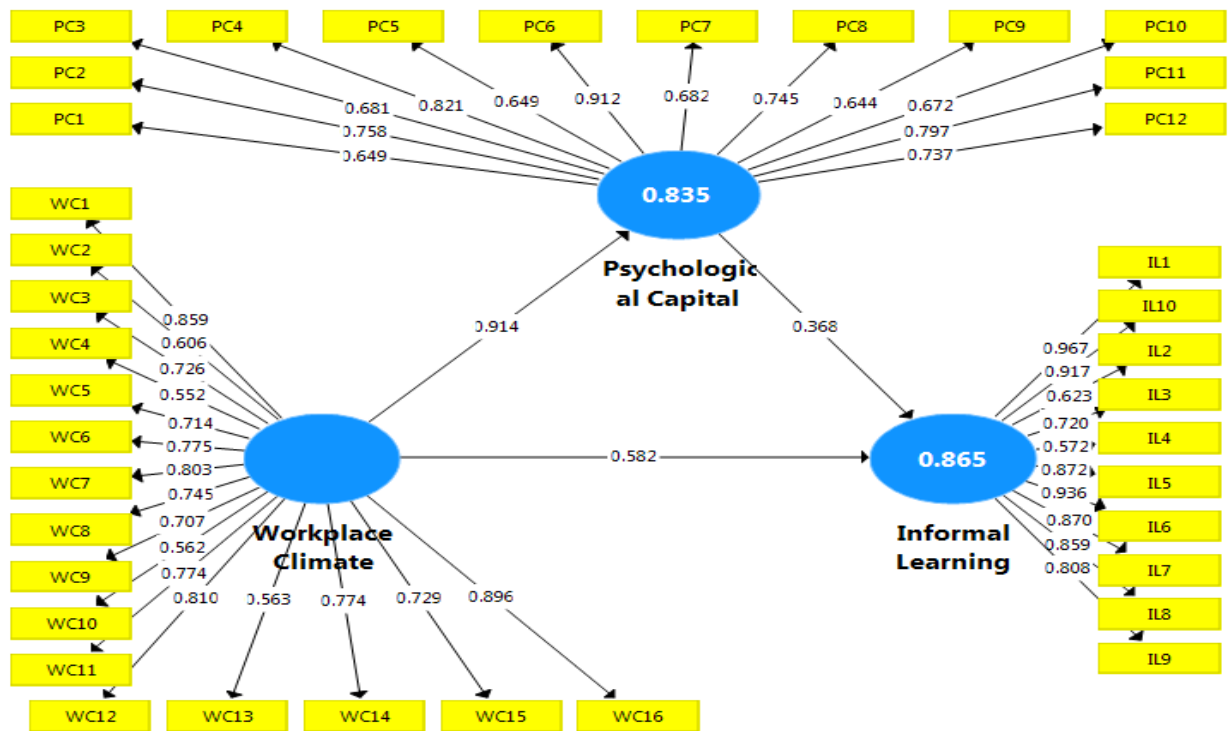


Figure 1. The tested model in the standard estimation mode

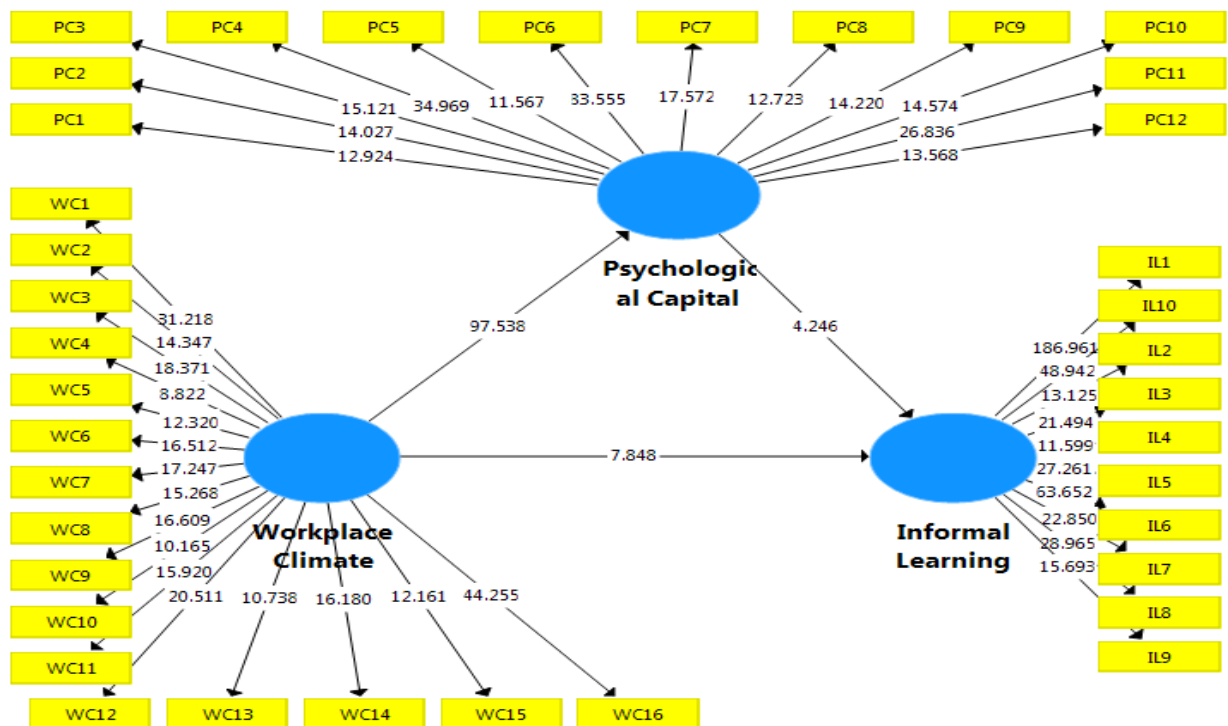


Figure 2. The tested model of the research in the case of significance

Discussion

The main purpose of this research is to study the effect of the workplace climate on the psychological capital and informal learning of physical education teachers.

The research findings indicated that the workplace climate has a positive and significant effect on the psychological capital of physical education teachers. The alignment of this result is confirmed with the research results of Huang and Wang (2021). One of the central issues in the working environment of teachers is to increase their psychological capital to work in different working conditions. Psychological capital is a factor that describes the psychological capacity of people to improve their performance. When the psychological capacity of teachers increases, they can better prepare themselves to face work challenges,

their adaptability will increase in dealing with new working conditions that they have no experience with, and they will show more effort in dealing with problems. Also, they will be more motivated to acquire new abilities and skills and they will be engaged with their job duties with more hope and enthusiasm. Due to the positive consequences of the development of mental capacity, it is necessary to strengthen the factors that shape it, such as the climate of the work environment. The workplace climate is a complex element and is a combination of psychological, physical and social factors. When the working environment of teachers is positive and healthy, they will experience a sense of security and peace. The existence of such an environment allows teachers to engage in their work duties without any fear or worry and develop their job skills according to their job needs and requirements. Also, the existence of a positive and productive organizational atmosphere by reducing job stress and anxiety gives teachers the opportunity to turn their minds to new topics and use more positive mental energy.

The research findings showed that the workplace climate has a positive and significant effect on the informal learning of physical education teachers. The alignment of this finding is confirmed with the research findings of Agbejule et al., (2021) and Huang and Wang (2021). The issue of teachers learning in their work environment is a very important and strategic issue; because teachers have an urgent need to learn new knowledge, abilities and skills at a time when the school environment is always undergoing various changes and the educational needs of students are constantly changing. Hence, structured learning programs are constantly implemented in schools. Despite the implementation of structured and planned learning programs for teachers, many of these programs do not have the ability to meet the learning needs of teachers because different situations occur in the work environment of teachers that require new knowledge and skills that teachers may lack. Accordingly, informal learning that occurs outside formal and legal structures is essential for teacher development. Informal learning happens when teachers need it. In this form of learning, teachers can learn new things from different sources such as colleagues, administrators and even students. Also, this form of learning is derived from people's sense of curiosity, and unlike formal learning, which is a command, it occurs in the form of self-initiation. Many factors such as the climate of the teachers' workplace can facilitate this form of learning. When the working environment of schools supports the growth and development of teachers, they can get new experiences and learn more things in their working environment without fear or worry. Also, the work environment can increase teachers' motivation to learn more. For example, encouraging teachers by their colleagues to learn more is an important factor that can institutionalize informal learning in the school environment.

The research findings indicated that psychological capital has a positive and significant effect on the informal learning of physical education teachers. The alignment of this result is confirmed with the research results of Choi et al. (2020) and Huang and Wang (2021). Psychological capital is an important factor in the development of people's psychological capabilities, which can lead to the formation of positive and effective behaviors in the work environment through the improvement and increase of their psychological capacity. Also, psychological capital forms positive emotions and relationships in people. According to the development and construction theory presented in positive psychology, positive emotions such as happiness, cheerfulness, interest and helping others expand people's awareness and encourage new and exploratory thoughts and actions. Over time, these broad behavioral repertoires build useful psychological skills and resources. Based on this, the positive emotions created by psychological capital can create a wide impact by expanding the boundaries of awareness and thus enable people to be inquisitive and exploratory in different situations. Also, positive feelings resulting from psychological capital help to create positive relationships between individuals and others and make people always learn new things from others. In addition, positive emotions can promote personal growth by creating new and broader perspectives, more inclusive perceptions of new issues and topics, and greater flexibility for cognitive change. On the other hand, increasing the psychological capital of employees makes them seek to learn new skills and knowledge with more mental preparation; because such employees believe that learning new knowledge and skills can help increase their professional competence and lead to career success.

The findings of the research showed that the workplace climate has a positive and significant effect on the informal learning of physical education teachers with the mediating role of psychological capital. The alignment of this finding is confirmed with the research findings of Huang and Wang (2021). Undoubtedly, teachers' working environment is a very powerful factor that can determine their personal or educational success or failure. In a work environment that has high levels of positive components such as trust, cooperation, coordination, support and justice, teachers' collective capital such as psychological capital will be easily formed and strengthened. With the formation of such a capital, the level of mental and psychological preparation of teachers to perform their job duties will increase in the best way, which can increase their ownership of their jobs. In such a situation, even if teachers face numerous work problems,

they are mentally prepared to solve them, and such teachers always hope to make positive career changes. Accordingly, such teachers will seek more informal learning in their work environment; because the interest in learning more new subjects is formed in them as a permanent need and will shape their behavior. On the other hand, the psychological capital formed in the working environment of schools will increase the self-confidence of teachers to successfully perform challenging tasks. Along with trying to do challenging tasks, dealing with new situations that require new actions can help teachers' informal learning.

Conclusion

The results of this study showed that school climate is an important part of school structure and can bring positive consequences such as the development of intangible capital (psychological capital) and the involvement of teachers in informal learning processes. According to the results; the development of positive components in the school environment (such as trust, support, empathy, and participation), acceptance of informal learning as a complement to formal learning by school administrators, administrators' trust in the professional competencies of physical education teachers, encouraging collaborative learning in the school environment, and giving physical education teachers autonomy according to their capabilities are suggested. This research has limitations. In this research, the physical education teachers of Golestan province were considered as a community and its results cannot be generalized to other provinces. It is also suggested to investigate the obstacles facing the development of informal learning of physical education teachers in future research.

Acknowledgments

The authors express their gratitude to all the physical education teachers who collaborated in this study.

Conflicts of Interest

There is no conflict of interest.

Funding

The authors have used their personal financial resources for this research.

References

- Agbejule, A., Rapo, J., & Saarikoski, L. (2021). Vertical and horizontal trust and team learning: The role of organizational climate. *International Journal of Managing Projects in Business*, 14(7), 1425-1443. [10.1108/IJMPB-05-2020-0155](https://doi.org/10.1108/IJMPB-05-2020-0155)
- Bakkenes, I., Vermunt, J. D., & Wubbels, T. (2010). Teacher learning in the context of educational innovation: Learning activities and learning outcomes of experienced teachers. *Learning and Instruction*, 20(6), 533-548. [10.1016/j.learninstruc.2009.09.001](https://doi.org/10.1016/j.learninstruc.2009.09.001)
- Cerasoli, C. P., Alliger, G. M., Donsbach, J. S., Mathieu, J. E., Tannenbaum, S. I., & Orvis, K. A. (2018). Antecedents and outcomes of informal learning behaviors: A meta-analysis. *Journal of Business and Psychology*, 33(2), 203–230. [10.1007/s10869-017-9492-y](https://doi.org/10.1007/s10869-017-9492-y)
- Choi, W., Noe, R., & Cho, Y. (2020). What is responsible for the psychological capital-job performance relationship? An examination of the role of informal learning and person-environment fit. *Journal of Managerial Psychology*, 35(1), 28-41. [10.1108/JMP-12-2018-0562](https://doi.org/10.1108/JMP-12-2018-0562)
- Clardy, A. (2018). 70–20–10 and the dominance of informal learning: A fact in search of evidence. *Human Resource Development Review*, 17(2), 153–178. [10.1177/1534484318759399](https://doi.org/10.1177/1534484318759399)
- Decius, J., Schaper, N., & Seifert, A. (2019). Informal workplace learning: Development and validation of a measure. *Human Resource Development Quarterly*, 30(4), 495-535. <https://doi.org/10.1002/hrdq.21368>
- Dudasova, L., Prochazka, J., Vaculik, M., & Lorenz, T. (2021). Measuring psychological capital: Revision of the compound psychological capital scale (CPC-12). *Plos One*, 16(3), e0247114. <https://doi.org/10.1371/journal.pone.0247114>

- Envick, B. R. (2005). Beyond human and social capital: The importance of positive psychological capital for entrepreneurial success. *The Entrepreneurial Executive*, 10(1), 41-52. <https://B2n.ir/m23465>
- Fredrickson, B. L. (2013). Positive emotions broaden and build. *Advances in Experimental Social Psychology*, (47), 1-53. [10.1016/B978-0-12-407236-7.00001-2](https://doi.org/10.1016/B978-0-12-407236-7.00001-2)
- Lohman, M. C. (2006). Factors influencing teachers' engagement in informal learning activities. *Journal of Workplace Learning*, 18(3), 141-156. [10.1108/13665620610654577](https://doi.org/10.1108/13665620610654577)
- Han, S. H., Oh, E., Kang, S. P., Lee, S. & Park, S. H. (2022). The mediating role of informal learning on job performance: the work-learning dual system in South Korea. *Journal of Workplace Learning*, 34(5), 437-454. [10.1108/JWL-07-2021-0101](https://doi.org/10.1108/JWL-07-2021-0101)
- Huang, X., & Lai, C. (2020). Connecting formal and informal workplace learning with teacher proactivity: A proactive motivation perspective. *Journal of Workplace Learning*, 32(6), 437-456. [10.1108/JWL-01-2020-0005](https://doi.org/10.1108/JWL-01-2020-0005)
- Huang, X., & Wang, C. (2021). Factors affecting teachers' informal workplace learning: The effects of school climate and psychological capital. *Teaching and Teacher Education*, (103), 1-11. [10.1016/j.tate.2021.103363](https://doi.org/10.1016/j.tate.2021.103363)
- Khandakar, M. S. A. & Pangil, F. (2021). The role of affective commitment on the relationship between human resource management practices and informal workplace learning. *Higher Education, Skills and Work-Based Learning*, 11(2), 487-507. [10.1108/HESWBL-01-2020-0004](https://doi.org/10.1108/HESWBL-01-2020-0004)
- Konold, T., Cornell, D., Jia, Y., & Malone, M. (2018). School climate, student engagement, and academic achievement: A latent variable, multilevel multi-informant examination. *Aera Open*, 4(4), 1-17. [10.1177/2332858418815661](https://doi.org/10.1177/2332858418815661)
- Korthagen, F. (2017). Inconvenient truths about teacher learning: Towards professional development 3.0. *Teachers and Teaching*, 23(4), 387-405. [10.1080/13540602.2016.1211523](https://doi.org/10.1080/13540602.2016.1211523)
- Kyndt, E., Gijbels, D., Grosemans, I., & Donche, V. (2016). Teachers' everyday professional development: Mapping informal learning activities, antecedents, and learning outcomes. *Review of Educational Research*, 86(4), 1111-1150. [10.3102/0034654315627864](https://doi.org/10.3102/0034654315627864)
- Louws, M. L., Meirink, J. A., van Veen, K., & van Driel, J. H. (2017). Teachers' self-directed learning and teaching experience: What, how, and why teachers want to learn. *Teaching and Teacher Education*, (66), 171-183. [10.1016/j.tate.2017.04.004](https://doi.org/10.1016/j.tate.2017.04.004)
- Malinen, O. P., & Savolainen, H. (2016). The effect of perceived school climate and teacher efficacy in behavior management on job satisfaction and burnout: A longitudinal study. *Teaching and Teacher Education*, (60), 144-152. [10.1016/j.tate.2016.08.012](https://doi.org/10.1016/j.tate.2016.08.012)
- McMillan, P. J. (2016). The mass distribution and gravitational potential of the Milky Way. *Monthly Notices of the Royal Astronomical Society*, 465(1), 76-94. <https://doi.org/10.1093/mnras/stw2759>
- Santoro, S. (2022). Goal orientations and workplace informal learning strategies: the mediating role of intrinsic motivation. *Journal of Workplace Learning*, 34(6), 571-589. [10.1108/JWL-11-2021-0143](https://doi.org/10.1108/JWL-11-2021-0143)
- Thapa, A., Cohen, J., Guffey, S., & Higgins-D'Alessandro, A. (2013). A review of school climate research. *Review of Educational Research*, 83(3), 357-385. [10.3102/0034654313483907](https://doi.org/10.3102/0034654313483907)
- Verberg, C. P., Tigelaar, D. E., & Verloop, N. (2013). Teacher learning through participation in a negotiated assessment procedure. *Teachers and Teaching*, 19(2), 172-187. [10.1080/13540602.2013.741842](https://doi.org/10.1080/13540602.2013.741842)
- Zia, M. Q., Huning, T. M., Shamsi, A. F., Naveed, M., & Mangi, R.A. (2022). Informal learning as mediating mechanism for the relationship between learning climate and organizational citizenship behavior (OCB). *Evidence-based HRM*, 10(2), 138-154. [10.1108/EBHRM-10-2020-0132](https://doi.org/10.1108/EBHRM-10-2020-0132)