



Does Self-Development Enhance Creativity? Investigating the Role of Human Capital

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Abstract:

Purpose: The purpose of the current research was to investigate the impact of self-development on staff creativity with the mediating role of human capital mediation in high schools.

Design/methodology/approach: The study was applicable to the quantitative approach using the descriptive–correlative method. The population comprised (55888) all human resources, including Teachers, school administrations, and other support staff working in the high school of Tehran city, among whom 381 were selected using the multi-stage cluster sampling technique. Data have been collected based on "human capital," "creativity," and "self-development" questionnaire and then analyzed using the structural equation modeling approach.

Findings: The study findings revealed that self-development was effective on human capital with a path coefficient of $\gamma=0.37$, and human capital impacted creativity with a path coefficient of $\beta=0.12$. Furthermore, self-development with the mediation of human capital has positively impacted creativity ($\beta=0.27$). Finally, self-development can significantly influence human resource creativity ($\gamma=0.23$).

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Introduction

Nowadays, employees are essential in ensuring that organizations achieve their goals. Creative employees produce different solutions for the problems within the organization and offer original ideas, which cause organizations to survive in today's competitive environment. In other words, creative employees ensure the progress and survival of the organization (Cavusoğlu, 2007; Adiguzel & Okca, 2021). Creativity is not only the force behind finding new ideas and products but also giving the right encouragement and opportunity. Creative people can find new solutions to business problems that benefit everyone (Taggar, 2002; West & Anderson, 1996, as cited by Sia & Appu, 2015), to the extent that Balay, (Kaya & Melik, 2010) suggested that creativity is a significant predictor of staff effectiveness.

Considering the importance of fostering creativity and its effects on the success of organizations, it is necessary to design and implement appropriate mechanisms to achieve this goal (Cekmecelioglu, 2002; Adiguzel & Okca, 2021). Administrators in the acting field acknowledge that they need creative employees but must be adequately prepared to promote them. Therefore, managers need a precise and coherent plan to encourage employees to strengthen their creativity by developing their capacity, thinking ability, and skills.

In this regard, literature reviews have shown that a wide variety of factors are related to creativity (de Jesus, Rus, Lens & Imaginário, 2013; Csikszentmihalyi, 2014; Arora & Kour, 2014; Corazza, 2016; Dong, Bartol, Zhang, & et al., 2016; Liu, Gong, Zhou & et al., 2016; Kandler, Riemann, Angleitner & et al., 2016; Liu, Jiang, Shalley, & et al., 2016; Przychodzen, Przychodzen, & Lerner, 2016; Leopoldino, Daniel, González & et al., 2016; Fijian, Kamarudin, & Kadir, 2016; De Rose, 2016; Kraus, 2016), but less has been focused on the modeling of the particular factors that effect on creativity, such as; self-development and human capital.

(Yermentayeva & Nurtaev, 2013) pointed out that components such as awareness, responsibility, commitment to activities, experience, and motivation affect teachers' creativity which is a self-development component. Likewise, (Kniazian & Khromchenko, 2019) have emphasized that self-development competence provides individuals with a promising opportunity to resolve problems characterized by increasing complexity, gradually expand their professionally necessary knowledge, and finally master new creative opportunities. Also, (Ghosh, 2015) presents self-leadership as a dimension of self-development in influencing creativity.

Creative breakthroughs require tenacity to endure the finding and development procedure,

which can include many iterations of trial and error, so self-leadership skills and mindset can progress creativity. As such, self-leadership may become an explicit factor to be trained and taught to future creative professionals and innovators. (Mahdy & Zaghloul, 2020) stated that self-development enables individuals to develop better relationships with others, enriching their creativity, imagination, and willingness to act, reinforcing academic, emotional, and interpersonal objectives and helping them understand another individual. Morris (2020) emphasized that self-directed learning and creativity are critical workplace competencies that are important to foster in formal educational settings. The importance of considering self-directed learning in the context of adult learning as a pragmatic learning process is outlined. (Tchanturia, Beridze, & Kurashvili, 2015) also emphasized that creative personality traits are needed to continue individuals' training and self-development. So high-quality development of the generalized group of "Self-organization and self-development" competencies is required (Iryna, 2021). Consequently, supporting self-development programs could motivate staff members to be more creative.

Another variable that came out as the top predictor of creativity is human capital. Human capital has been defined as a critical element in improving a firm's assets and employees to increase productivity and sustain competitive advantage (Schultz, 1993). In other words, human resource investment promotes talents and skills, increases individual production capacity, and leads to economic growth.

The acquisition of human capital in increased employee training and education is essential in today's modern era. Trained employees can improve performance using human capital (Widarni & Bawono, 2020; Ariyanti & Irawan, 2021). Besides formal education and work experience, self-directed learning is crucial in determining employee recruitment (Ariyanti & Irawan, 2021). Investing in human resources through training and self-development programs can bring out latent talents and skills, increase an individual's productivity and stimulate economic growth. In addition, self-development leads to increased human capital in individuals' knowledge, skills, abilities, and emotional and communication competencies (Mazari & Zamani, 2016; Abili et al., 2015; Mirkmali et al., 2017).

Rastogi (2000) stated that human capital is essential for organizations, especially for employees' continuous improvement, mainly in knowledge, skills, and abilities. Thus, human capital is "the knowledge, skills, competencies, and attributes embodied in individuals that facilitate the creation and creativity (Marimuthu, Arokiasamy & Ismail, 2009).

Therefore, we are witnessing a renewed interest in human resource management as an essential strategic tool that can uphold the competitive position of a global firm (Bansal, 2021). Investment in their development will pay back great dividends in generating new opinions and innovative procedures for the organization. Employees begin to view the organizational goals as their own and will work hard to develop more creative and efficient ideas and new ways of doing things.

Finally, as mentioned above, the convincing reason for the importance and attention to the current research is that although some research has been carried out on each of these three variables in different contexts, few studies have examined the correlation between these in educational systems. So, given the importance of the issue and the rare availability of evidence in this regard, we were intrigued to discover whether employee creativity at high schools can increase through self-development with the mediation role of human capital.

Literature review

This section focused on the three research variables: creativity, self-development and human capital.

1- Creativity

Organizations need to solve their problems innovatively to be competitive, with ideas that allow them to adapt to their environment and survive constantly. Clegg & Birch (2001) stated that a few business firms could only survive with creativity in the market because today's game continually changes. Although it is considered necessary, creativity is not enhanced in many firms, or their employers think it is only for inventors or the marketing staff (Barroso, 2017). Therefore, several researchers have tried to unravel the structure and temperament of creativity by implying different approaches (Amabile, 1988; Siyal et al., 2021), mainly in psychology or sociology (Bailey & Ford, 1996; Siyal et al., 2021). Asbari et al. (2021) stated that creativity refers to producing and developing new and potentially valuable ideas. Creativity is the ability to reformulate what we know, generally in light of further information, and develop a new concept or an original idea (Carter, 2014; Widod & Gustari, 2020) or modify something that already exists into a new concept (Semiawan, 2009; Widod & Gustari, 2020). Therefore, individual creativity is a resource or personal ability to create (Agistiawati et al., 2020; Asbari & Novitasari, 2020; Maesaroh et al., 2020; Novitasari, Kumoro et al., 2020; Wiyono et al., 2020). Consequently, individual creativity describes individual cognitive processes and thinking (referred to as creative thinking) and potentially related activities such as (1) defining the problem to be solved, (2) gathering information,

(3) generating ideas, and (4) evaluating ideas (Mumford et al., 1991).

Creativity is flexible and dynamic and varies from employee to employee (Asbari et al., 2021). De la Torre (1997) concluded that the essential features for a person to be creative are (1) sensitivity to problems, deficiencies, failure, gaps, and improvements; (2) autonomy and criterion independence; (3) good self-perception, (4) high level of expectations, and (5) engagement and consistency at work. Less creative individuals follow a strict plan, while more creative ones could change everything once again, planning solutions to problems from different points of view until they reach what they want (Barroso, 2017). Creativity is rewarded only with money (if it is awarded), and there is limited use of creativity but more use of power, rules, and fear to change. As a result, there is fear of failure and avoidance of taking risks, limiting creativity and not letting it become an innovation. According to Barroso (2017), creativity is usually related to tangible results. However, there are intangible ways to be creative, like creativity in ideas, the relation among workmates, improvisation, planning, and leadership. Based on the literature review, we found a need for more specific research on self-development, human capital, and creativity. Therefore the study has answered, "Is self-development associated with staff creativity through the mediation of human capital?"

2: Self-development

In the modern world, a person needs constant self-development and self-organization to meet time requirements, successfully cope with new tasks, quickly adapt to new situations, and be professionally successful (Iryna, 2021). The report of the World Economic Forum, "The Future of Jobs" (2020), notes that the skills required by professionals are self-management, flexibility, and active learning (Semenoh, 2005; Iryna, 2021). We no longer have the opportunity to remain disorganized. The potential of the self-development of the teachers and staff and the student is an objectively existing psychological and socio-cultural phenomenon without the complete revelation of which it is impossible to explain or form the required skills, knowledge, and competencies of the students. In the future, a teacher will contribute to creating and developing these competencies in their students.

It should be noted that teachers and staff whose competencies need to be included are unlikely to do this successfully. Staff self-development is a permanent process of improving professional expertise based on the principles of lifelong learning (Iryna, 2021). There are several interpretations of the concepts of self-development and professional self-development in the psychological and pedagogical literature (Rasskazova & Savina, 2021).

(Sokolovska, 2018) explains self-development as "a purposeful, conscious process of forming oneself as a person which lasts throughout life and determines the qualitative development of a holistic personality." Likewise, she explains the professional self-development of a teacher as "a conscious, purposeful process of personal and professional self-improvement for creative self-realization in the process of performing professional activity" (Sokolovska, 2018; Rasskazova & Savina, 2021).

According to A. (Kononenko, 2017), "professional self-development of a teacher is an internal process aimed at achieving professionalism which is a qualitative self-change of the personal and professional sphere and professional activity" (Rasskazova & Savina, 2021). Studies on self-development have identified in its dynamics several phases: setting the goals of the activity, observing one's training, recording the results of the action, evaluating of results, strengthening, fixing, and using the consequences if they are appreciated as successful (ZISU, 2021). It is also important that only in the conditions that man objectively knows himself and based on scientific methods can establish the fields in which he considers himself competent. The qualities he overestimated or underestimated, the rules he thinks appropriate to behave by, and the aspirations and needs he gives priority to (ZISU, 2021). Phillips (1993) illustrates that providing opportunities for self-development and encouraging staff members to take advantage of them enhances problem-solving and cause organizational adaptability and growth by generating creative ideas.

3: Human capital

The resources of an organization's people are arguably its greatest asset, including the sum of their knowledge, experience, skills, and creativity. The "human capital" concept was introduced into science in 1961 by Theodore Schultz (1961). He defined human capital as the complex of workers' knowledge and skills presenting economic value and contributing to labor productivity growth. Widarni, 2020; Ariyanti & Irawan (2021) stated that human capital is human expertise and abilities in completing work obtained through education, training, and experience to form individual skills that can be used to complete work to earn income. The benefit of human capital can be considered on three levels: personal, organizational, and social.

At the personal level, it mostly leads to greater productivity and the possibility of job advancement (Sidorkin, 2007) and also increases a company's resources (Beach, 2009). The human capital theory suggests that "training and education raise the productivity of workers by imparting useful knowledge and skills" (Shubin, Benjamin, & Naam, 2020; Alas, Alhety &

Aldubai, 2020). Human Capital Development plays the unique role of incorporating the organization's interests and the workforce, subsequently enhancing the achievement of organizational goals.

According to Armstrong's (2006) model of human capital development, the fundamental purpose of the HCD system is to improve resource capability as an organization's human capital is seen as a significant source of competitive advantage. Generally, human capital development takes the form of self-directed learning, coaching, and mentoring techniques. The self-paced learning programs encourage them to decide the rate at which they are to measure their progress. He further asserts that "it can be based on a process of recording achievement and action planning that involves individuals reviewing what they have learned, what they have achieved, what their goals are, how to achieve those, and what new they need to acquire." The learning program can be 'self-paced' because learners can decide for themselves up to a point the rate at which they work and are encouraged to measure their progress and adjust the program accordingly (Harris, 2009; Alas, Alhety & Aldubai, 2020). Studies of organizations emphasizing human capital development have shown that this factor is the most critical predictor of creativity and innovation. In this regard, Butnaru and Gherman (2012) maintained that investing in human resources was the best way to meet the new requirements of an economy based on creativity, performance, and knowledge. Chegini (2013) considered creativity and innovative ability to be the most critical parts of human capital.

Conceptual research design and hypotheses:

Based on an integrative literature review of the areas of self-development, creativity, and human capital, the following conceptual framework was developed along with the theoretical foundations and the four proposed research hypotheses:

H1: Self-development has positive effects on creativity.

H2: Self-development has a positive impact on human capital.

H3: Human capital has positive effects on creativity.

H4: Self-development has a positive effect on creativity by mediating Human capital.

In the present study, have been used the self-development model presented by (Abili & Mazari, 2014), the model of human capital introduced by (Naderi, 2012), and Torrance's definition of creativity (1979) have been used. As a result, the conceptual model has been developed as follows.

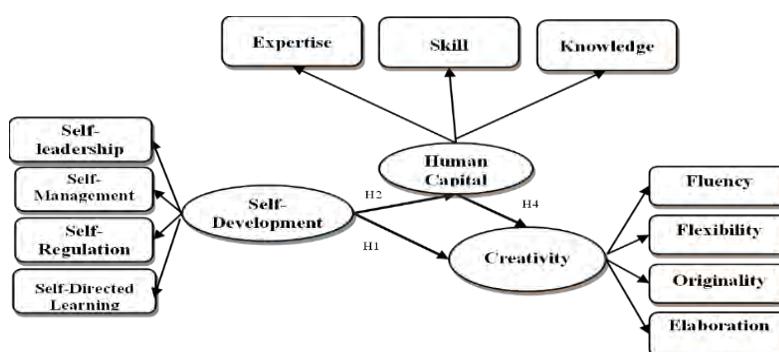


Figure 1. Conceptual Research Model

Methodology

The philosophical paradigm of this research is positivism, which is based on the existence of objective and measurable facts. Therefore, although this study is an applied study and is considered descriptive research in terms of collecting data because it explains the role of each variable in terms of the others and examines the relationships among variables, the study involves descriptive-correlational research. The study population included all governmental high school staff, including Teachers, school administrations, and other support staff working in the high school of Tehran City, about 55,888 people.

Multi-stage cluster sampling was used in this study. In this type of sampling, the community is divided into clusters, and in several steps, a sample takes place from these clusters. First, five districts were selected in Tehran, and three schools were chosen. Then, using the Cochran sampling formula, 381 individuals were assigned as the final sample population. Three types of questionnaires were used for data collection, including the five-point Likert scale, which was entirely consistent with the research model and research component dimensions. Three data-gathering surveys were as follows:

1) **Self-Development Questionnaire:** A questionnaire adapted from Abili and Mazari (2014) was used to measure staff self-development with a reported Cronbach's α value of 0.90. The questionnaire consists of four components (self-regulation, self-management, self-leadership, and self-directed learning). Cronbach's alpha coefficient was evaluated using 0.90; thus, the reliability of the questionnaire was confirmed. Alpha components of self-regulation (0.77), self-management (0.80), self-leadership (0.86), and self-directed learning (0.61) were also obtained. This questionnaire comprises four components: self-regulation, self-management, self-leadership, and self-directed learning. The Cronbach factor determined the reliability of the questionnaire ($\alpha = 0.94$).

2) **Human capital questionnaire:** the Naderi

questionnaire (2012) was used to measure human capital by evaluating the three components of knowledge, skill, and expertise. The questionnaire included 28 items. As a result Cronbach's alpha coefficient (0.96) was obtained along with the alpha components of knowledge (0.92), skills (0.90), and expertise (0.91). This questionnaire has been validated according to Mirkamali et al. (2015) and Mazari et al. (2015).

3) **Creativity questionnaire:** Torrance (1979) was used to evaluate creativity. There was 60 question. Cronbach's alpha coefficient (0.92) was obtained together with the alpha components of fluency (0.89), flexibility (0.91), originality (0.93) and elaboration (0.92). This questionnaire was validated according to Mirkamali et al. (2013). To confirm the validity of the three questionnaires, professors from Tehran University read and studied them and approved their reality. In addition, their comments on the validity have been collected. Data were analyzed using SPSS Statistics version 24.0 and LISREL version 8.8, and each component's normality of distribution was checked using the Kolmogorov-Smirnov test. Also, the correlation matrix of the variables was used to examine the correlation between the variables, and finally, the structural equation model was used to test the research hypotheses.

Finding

In the present study, the demographic data on the respondents showed that 58 percent were female and 42 percent were male. Regarding the level of education, 3.7% had a diploma, 16.2% had an associate's degree, 51.9% had a bachelor's, and 7.1% had a master's degree. Furthermore, analysis of the normality of the variables by the Kolmogorov-Smirnov test showed that self-development, creativity, and human capital had a normal distribution. The correlation matrix of the variables showed a positive relationship between self-development and human capital (0.34) and creativity (0.27) at a significance level of 0.01. In addition, human capital and creativity (0.21) also had a significant positive relationship at a significance level of 0.01.

Table 1. Correlation matrix of variables

Variables	Self-Development	Human Capital	Creativity
Self-development	1		
Human capital	0/34**	1	
Creativity	0/27**	0/21**	1

**

Signification level: 0.01 * Signification levels: 0.05.

To test the proposed hypothesis, structural equation modeling was used. Tables 2 and 3 summarize the results of the hypothesis test. In testing the absolute model fit, the goodness-of-fit indexes have been used, such as freedom for X-ray ratio (χ^2/DF), standardized root mean residual (SRMR), Adjusted Goodness-of-Fit

Index (AGFI), and Goodness-of-Fit Index (GFI), the root mean squared error of approximation (RMSEA), the normed fit index (NFI), non-normed fit index (NNFI). The results indicate that the model has a relatively good fit for the data (Table 2 and Figure 2).

Table 2. The goodness-of-fit measure of the research model

Fit index	χ^2/df	RMSA	GFI	AGI	SRR	IFI	NNFI	NFI
Domain	1 -5	<0.08	>0.9	>0.9	>0.05	0 -1	>0.9	>0.9
Calculated	3/3	0/073	0/95	0/91	0/047	0/98	0/97	0/96

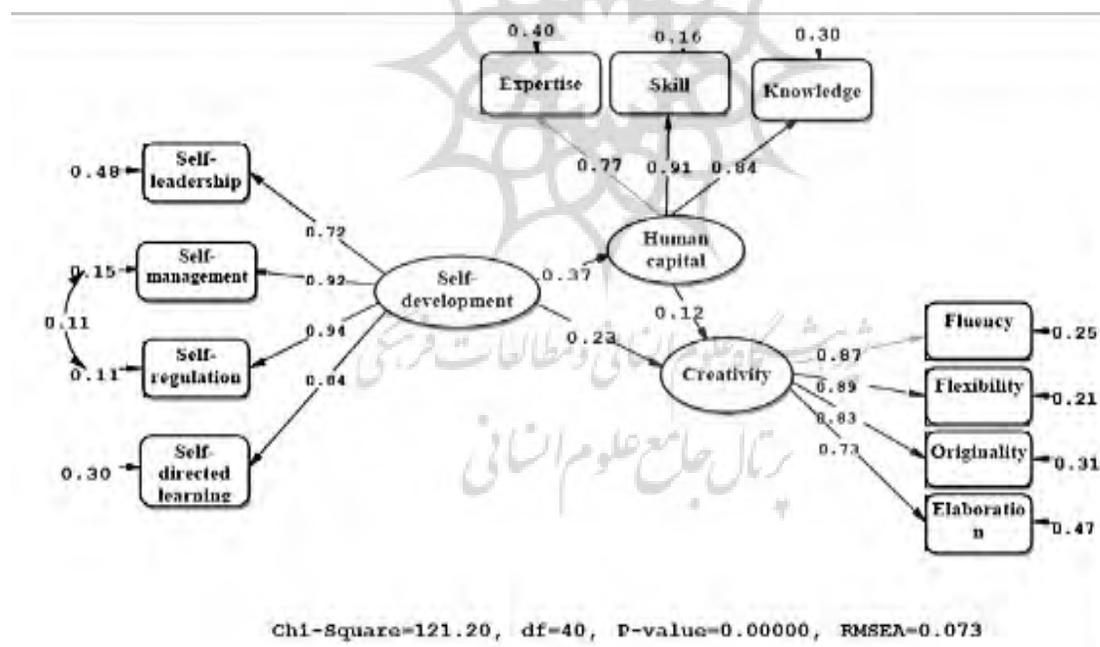


Figure 2. SEM (path coefficient)

The t-value was used to determine the significance of the relationships between the variables (Table 3 and figure3 depict the results of the path coefficients and the T-statistics.) . Since the significance has been checked at the error level of 0.05, if the value of the values obtained with the t-value test is below +1.96, there is no significant relationship .On the other hand, the value of the t-test calculated between self-development and human capital (6.48), human capital and creativity (2.06), and self-

development and creativity through the mediation of human capital (0.493) were significant at a 0.05 level. Also, the t-value between self-development and creativity (0.382) was significant at the 0.05 level.

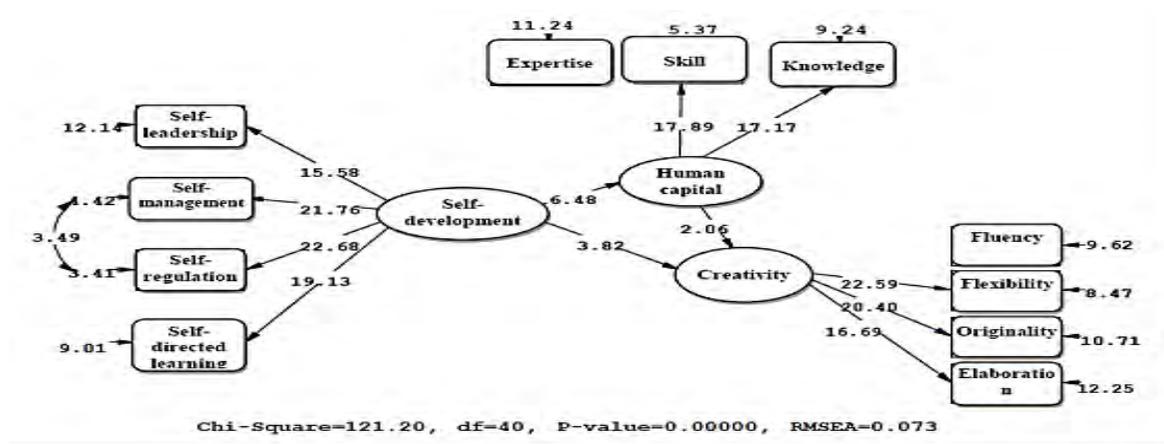


Figure 3. SEM (path coefficient)

As a result, Self-development has a positive and significant impact on human capital ($\gamma=0.37$). In addition, human capital was affected by creativity with a path coefficient of $\beta=0.12$.

Furthermore, self-development with the mediation of human capital has affected creativity ($\beta=0.27$). Finally, self-development was effective on creativity directly ($\gamma=0.23$).

Table 3. Path coefficient and T-statistics

Hypothesized path	T-value	Path coefficient	Result
H1	6/48	0/37	Confirm
H2	2/06	0/12	Confirm
H3	4/93	0/27	Confirm
H4	3/82	0/23	Confirm

Conclusion

The current research aimed to investigate the role of self-development on staff creativity with the mediating role of human capital in high schools as one of the most vital organizations in any society.

As mentioned earlier, self-development possesses many advantages, including; refining employees' skills, increasing productivity, exploiting the value of employees, helping the organization manage change, facilitating employees to engage in their own career goals and interests, creating confidence, dropping organizational costs, reducing organizational conflicts, providing a positive image of the organization, growing social capital and also making a desirable organizational climate (Momeni, 2020).

The results of this study have shown that creativity has significantly affected self-development through human capital meditation. Based on research findings, if people focus more on increasing their self-development skills and problem-solving abilities, their creativity will increase. To achieve this objective, the organization must focus on designing and implementing successful mechanisms and programs to help and promote the self-development approach. As Rasskazova & Savina (2021) noted, teachers whose self-

development competencies have yet to be formed are unlikely to create and develop self-development in their students. Therefore, plans and opportunities must be prepared for developing the staff's cognitive ability and specific creativity through self-development. Self-development, self-awareness, and self-knowledge are based on self-reflection that has led to self-motivation and self-initiation of development efforts. During these activities, the person focuses on cognitive development (self-leadership), behavioral (self-management), and mode (self-regulation). Moreover, learning (self-directed learning), behavioral (self-management), benchmarking (self-regulation), and, in exchange for their efforts, practice self-control, self-monitoring, and self-assessment, which strengthens the sense of self-responsibility, and self-responsiveness to actions. The results of the current study are in line with some research, including; Siyal et al. (2021), Rasskazova & Savina (2021), Rasskazova & Savina (2021), Iryna (2021), Semenova, Zelenyuk & Savinov, (2021), Barroso (2017), Mazari and Zamani (2016), Abili & Mazari (2015), Mazari et al. (2016), Mirkmali et al. (2017), Yermentayeva and Nurtaev (2013), Singh (2010).

If the self-development approach is used to enhance mental abilities and generate new ideas, the person becomes self-motivating, and their

creativity flows with less effort. Thus, continuous creativity can engender individuals who actively seek self-development and self-awareness. As Barroso (2017) concluded that self-corrective procedures are a critical thinking tool, self-control is a component of creative thinking abilities, and the essential features for a person to be creative are good self-perception. At schools, an important way of learning about conflict-solving and decision-making is helping students to be more creative, which could be achieved through teaching critical and creative thinking strategies. So teachers and staff must develop their competencies and creativity and teach them to students. In this regard, the research of Rasskazova & Savina (2021), Barroso (2017), Yermantayeva and Nurtaev (2013), Tamari and Giugali (2015), and Singh (2010) have also confirmed that self-development could enhance knowledge, skills, and communication abilities of the employee.

The finding of this study is also confirmed

by Iryna (2021), ZISU (2021), Rasskazova & Savina (2021), Mazari and Zamani (2016), Abilli et al. (2015), Mazari et al. (2015), Mirkmali et al. (2016), and Mirkmali et al. (2017) as they found that there is a positive relationship between self-development. Individuals gradually accumulate a stock of human capital by initiating and pursuing activities for their development. Self-development is one of the most reliable approaches for enhancing one's natural talents because the individual is both the responsible party and the beneficiary of the training. As a performer, evaluator, and observer, a person who has attained such maturity will naturally continue the process of self-learning and improvement for his entire life. The present

In short, the educational approach that leads to the continuing development of the individual members of an organization and the accumulation of human capital is a process of self-development that works in both directions: one that monitors individual awareness, initiative, and responsibility and stimulates the

❖ Self-development should be taught as a new approach to innovative ways to enhance staff in educational institutions. It can be taught through in-service training, workshops, online platforms, and providing relevant resources to all schools.

❖ If teachers emphasize their self-development, then their self-confidence increases. As a result, it increases self-efficacy, self-respect, self-leadership, self-regulation, and self-directed learning in students and their growth.

❖ The increase of human capital among

research has also confirmed the positive impact of self-development on human capital. With increased knowledge and reasoning abilities, individuals can utilize human capital's advantages to expand their creativity. With the accumulation of experience, knowledge, and expertise in a group of persons, their collective human capital acts in synergy to increase the creativity of all. Also, Mirkmali et al. (2013) implied that creativity seems contagious, so once one individual has begun the tendency toward innovation, others will follow Galoska (2015).

Sternberg and Ohara (1997) also emphasized the positive effects of human capital and its concomitant increase in overall knowledge and mental abilities on creativity. Semenova, Zelenyuk & Savinov (2021) concluded that creating new ideas in organizations will be strengthened by human capital development. The result of ignorance of self-development programs is a need for opportunities for developing human capital. Self-development programs help staff improve their creativity and use them at work. Ultimately, self-development can enhance human capital (Mazari & Zamani, 2016; Abilli et al., 2015; Mirkmali et al., 2017). Human capital can increase the tendency to generate new mindsets (Marcela Galovská, 2015; Estenberg & Ohara, 1997).

Consequently, the human capital capacity develops employees, improve their performance, enjoy their job more, and increase enterprise profitability. This could translate into better working conditions, more competitive salaries, and lower turnover and absenteeism. Another benefit is that directors and managers will understand the importance of preparing self-development opportunities that foster creativity and innovation, enlarge human capital, and improve services and job performance.

production of new ideas on a personal level, and the other that increases the capacity of individuals as a group to generate new ideas through synergy and qualitative growth in human capital. According to the findings, the discussion, and the conclusion of this study, the following suggestions are presented:

the staff of schools becomes continuous and self-sustaining when they develop a deep understanding of their capabilities, future, and responsibilities. Thus, human capital enhancement needs to be redefined and implemented using the self-development approach.

❖ Individual trust and willingness to listen to another's ideas are a big part of creating an environment where creativity can flourish. Therefore, the session in self-development for school employees should address this with an emphasis on mindfulness interactions, self-

management, and understanding so that everyone feels free to create and discuss new ideas; in other words, to be creative without fear of ridicule or censure.

❖ Motivated human resources are among the most critical factors in increasing the organization's effectiveness. Therefore, creativity and innovation can be increased by designing appropriate mechanisms to increase productivity and proper management of human capital. In this regard, creating a culture of innovation and creativity should be one of the organization's senior managers' most important actions and priorities.

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Ethical considerations

During the implementation of this research and the preparation of the article, all national laws and principles of professional ethics related to the subject of research, including the rights of statistical community, organizations and institutions, as well as authors and writers have been observed. Adherence to the principles of research ethics in the present study was observed and consent forms were consciously completed by all statistical community.

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Conflict of interest

According to the authors of the present article, there was no conflict of interest.

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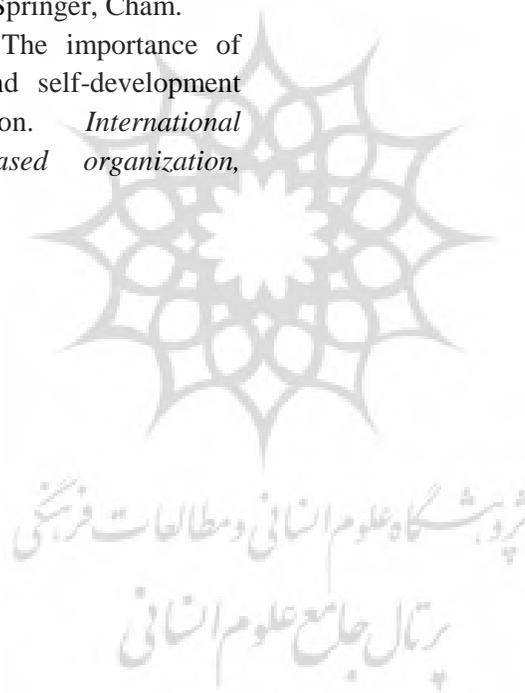
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