Journal of Applied Organizational Systems and Behavior

Adapting Self-Development Approaches to Varying Degrees of Student Agency

Eva Horvat[1]*, Marko Kovač[2], Ivana Petrić[2]

1. Department of Organizational Behavior, Faculty of Economics, University of Zagreb, Zagreb, Croatia.
2. Department of Management and Leadership, Faculty of Economics, University of Split, Split, Croatia.

Abstract

The significance of this study stems from the need to understand the psychological mechanisms and influencing factors behind personal self-development. This research aimed to examine the factors that shape students' choices of self-improvement strategies—namely acquisition, rejection, transformation, and restriction—in relation to their levels of personal agency. The study sample included 271 university students from Russia and Kazakhstan, aged between 17 and 27, predominantly female, with an average age of 19.5 years (SD = 1.5). To collect data, researchers used a custom-developed method called the *"Square of Self-Improvement"* and the *"Level of Personal Autonomy Development"* questionnaire by M.A. Shchukina. Data analysis was conducted using Fisher's angular transformation (φ^* criterion).

Findings revealed that students with high agency levels predominantly chose acquisition, rejection, and transformation strategies. In contrast, among those with low agency levels, fewer opted for transformation, while a greater number selected the acquisition strategy. This preference appears to be linked to intrinsic value, which serves as an indicator of agency. Importantly, the way students apply the acquisition strategy differs qualitatively between high and low agency groups. Overall, the study concludes that a student's level of agency significantly influences their choice of self-improvement strategy, reflecting their ability to take control of and actively direct their personal development. These findings have practical implications for educational settings, particularly in designing individualized development plans during professional training and offering psychological support within universities.

Keywords: Self-development, Self-improvement strategies, Self-improvement, Agency

Introduction

The connection between personal agency and self-development remains a pertinent, though contested, topic in contemporary psychology [1–3]. Its significance lies in the need to understand the psychological mechanisms that contribute to the formation of individuals as autonomous agents in their own lives. Diverging perspectives on how agency and self-development interrelate have fueled ongoing academic debate.

Agency encompasses a set of characteristics that can manifest differently in each individual, contributing to the unique expression of their personal agency. While some traits are widely accepted as integral components of agency, others are more disputed—among them is self-development, often defined as an internally driven process of personality transformation that depends on life goals and contextual factors.

Literature review

The structure of agency has been explored extensively in the psychological literature. Some scholars define agency through broad personality traits that enable a person to act independently and purposefully. For example, A.V. Brushlinsky (1996) emphasized characteristics such as activity, autonomy, creativity, and integrity [4]. In A. Bandura's (1989) theory of self-efficacy, agency is characterized by activity, autonomy, self-reflection, and self-regulation [5].

L.V. Alekseeva's conceptualization of agency, later elaborated by M.A. Shchukina (2015), identifies six paired dimensions [6]: activity–passivity, autonomy–dependence, integrity–fragmentation, mediated–immediate action, creativity–reproductivity, and intrinsic–low personal value.

Other theorists incorporate self-development or self-improvement into the framework of agency alongside these established traits. For instance, S.L. Rubinstein (2003) highlighted activity, self-determination, development, self-regulation, and self-improvement as core elements of agency. Similarly, A. Serykh (2006) includes self-determination, self-organization, and self-development as essential agency components [7, 8].

The authors of this article align with the perspective of V.I. Slobodchikov [9], who suggests that individuals only become active participants (subjects) in their own self-development after achieving a certain developmental stage. Typically, this occurs during adolescence, when young individuals begin to take ownership of their lives. However, due to various reasons, some individuals may never reach this point and, consequently, do not become subjects of self-development. Additionally, the process of self-development is not always positive or aligned with social norms; it can sometimes follow an asocial path.

Another significant point worth discussing is that self-development, as a process of changing oneself, takes on several key forms: self-affirmation, self-improvement, self-actualization, and self-realization. Self-affirmation involves the individual's need to have their sense of value or insignificance validated either by others or by themselves. According to Nikitin and Kharlamenkova (2000), self-affirmation can follow different strategies, including constructive approaches, dominance, and self-suppression [10].

Self-improvement typically refers to two main concepts: the aspiration for excellence and the process of self-change, usually aimed at becoming better. Self-actualization is the act of discovering and expressing one's potential, while self-realization refers to putting that potential into practical use. These forms are interrelated and often operate simultaneously.

In relation to the current research topic, our primary interest lies in self-improvement as a distinct type of self-development. Modern psychology approaches this topic from various angles. A. Adler [11] was one of the pioneers in identifying the drive for self-improvement (or striving for excellence) as a core motivational element in self-development. The motivation for self-improvement can stem from multiple sources, such as achieving life goals, striving toward an ideal self-image, or the need for feedback, particularly when such feedback leads to positive emotional experiences [12].

Both self-improvement and self-affirmation rely on specific strategies. However, there is no universal agreement in the literature about what these strategies entail. Some scholars describe them broadly as conditions or mechanisms of self-improvement. For instance, A.K. Schaffner [13] identifies elements such as self-awareness, self-control, and self-education as crucial. Other researchers focus on more specific expressions of self-affirmation and self-improvement, including self-elevation and self-defense. Hepper and colleagues [14] list defensiveness (a tendency to avoid or defend), positive acceptance, constructive self-perceptions, and self-affirming reasoning as part of these strategies.

In some studies, self-improvement strategies are described as general approaches to self-change. These include strategies of acquisition, rejection, transformation, and limitation [15]. The strategy of acquisition refers to gaining something new—whether knowledge, skills, or personal attributes—that the individual previously lacked.

The rejection strategy refers to a person's intention to eliminate traits or behaviors they find unsatisfactory, such as certain habits or aspects of their character. Transformation can occur in two ways: it may involve a qualitative enhancement of oneself, or a more radical change, such as turning resentment into forgiveness or converting laziness into diligence. The limitation strategy, as the name suggests, involves placing restrictions on specific behaviors—for example, limiting the number of cigarettes smoked or managing expressions of irritability toward close others.

Studies have shown that the selection of a particular strategy depends on the strength of an individual's motivation for self-development. When motivation is high, people are more likely to prefer the acquisition strategy. In contrast, when motivation is low, they tend to choose strategies of limitation and rejection [16].

The focus now turns to the relationship between students' agency and self-development, with special attention to self-improvement as a key form of it.

The issue of agency in students and schoolchildren is frequently addressed in modern psychology. For example, M. Vaughn [17] describes student agency as the willingness, capacity, and authority to direct one's own actions. P. Jaaskela and colleagues [18] identify individual, relational, and contextual elements of agency. Likewise, K. Geikhman and V.S. Kabanov [19] outline several dimensions of agency—motivational, evaluative, regulatory, cognitive, and practical—that evolve through different stages of professional development: from zero suitability to full competence, agency, and eventually mastery.

A. Bandura [20] proposed that self-efficacy is the foundation of agency. As a result, much of the research has explored the connection between self-development (especially self-improvement) and self-efficacy rather than agency itself [21–23]. However, some studies do explore a direct link between agency and self-development. For example, in research involving

Cameroonian students, J.L. Lo-oh and D.E. Neba [24] found strong evidence that features of agency—such as foresight, self-reactivity, self-efficacy, self-reflection, and self-esteem—are positively correlated with self-development.

From this perspective, it is evident that most existing research focuses on the internal traits or motivational factors behind self-improvement, rather than the actual strategies or actions used in the self-development process. This leaves a significant gap in understanding how individuals—specifically students—approach self-affirmation, self-improvement, self-actualization, and self-realization as active agents of change.

This leads to several important questions, including how students with different levels of agency choose among strategies for self-development. The current study focuses on one aspect of this broader issue: identifying the strategies students with varying degrees of agency use for self-improvement. The general hypothesis is that students with higher agency levels will tend to choose acquisition and transformation strategies, while those with lower levels of agency are more likely to adopt rejection or limitation strategies.

People often try to improve themselves by using different personal strategies. One such approach is **rejection**, where a person decides to eliminate certain habits or personality traits they find unhelpful or negative. Another method is **transformation**, which can take the form of either gradual personal growth or a more significant internal shift—for instance, changing bitterness into the ability to forgive, or replacing laziness with a strong work ethic. A third approach is **limitation**, which involves setting boundaries—for example, reducing daily cigarette consumption or controlling irritability in interactions with family and friends.

Research shows that the choice of strategy depends largely on how motivated a person is to grow. Those with a strong drive for self-improvement often favor acquisition-oriented strategies, while those with weaker motivation are more likely to adopt strategies like rejection or limitation [16].

This leads to a deeper look at how student **agency** connects with self-development, especially when viewed through the lens of self-improvement.

Modern psychological studies often explore how agency appears in young people. For example, M. Vaughn [17] describes agency as a student's willingness, ability, and right to shape their own actions. Jaaskela *et al*. [18] point out that agency includes personal, social, and environmental components. Similarly, Geikhman and Kabanov [19] emphasize that agency involves motivation, evaluation, regulation, thinking, and action—all of which evolve across different stages of professional growth, from early incompetence to full mastery.

A well-known perspective from A. Bandura [20] suggests that self-efficacy is at the heart of agency. Following this idea, many studies have explored how self-development—especially self-improvement—relates more to self-efficacy than to agency itself [21–23]. Still, some researchers have directly linked agency to personal growth. For instance, Lo-oh and Neba [24], studying students in Cameroon, found strong correlations between self-development and aspects of agency such as planning ahead, self-monitoring, belief in one's capabilities, self-awareness, and self-respect.

What many of these studies overlook, however, are the actual choices and behaviors students use to improve themselves. Much attention has been given to internal qualities and motivation, but less is known about the specific steps students take to pursue goals like self-actualization or personal achievement.

This gap in knowledge raises important questions about how students with different levels of agency make decisions about self-improvement. The present study focuses on this issue by examining the types of strategies students choose based on how much agency they exhibit. Our central hypothesis is that students with higher agency are more likely to use acquisition and transformation strategies, while those with lower agency tend to rely on rejection or limitation strategies.

Results and Discussion

This section presents the key findings from our study. We begin with a general overview of the sample based on the primary variables examined. **Table 1** displays the frequency and percentage of students' preferences for various self-improvement strategies.

Table 1. Preferences for Self-Improvement Strategies Among Students
(Self-reported primary choice)*

Strategy	n	%
Acquisition	117	43.17%
Rejection	83	30.63%
Transformation	49	18.08%
Limitation	22	8.12%
Total	271	100%

*Note: Only students' first-choice strategies are included.

As seen in **Table 1**, **acquisition** is the most commonly selected strategy, chosen by 117 students, accounting for 43.17% of the sample. **Rejection** follows with 30.63% (83 students), and **transformation** ranks third, selected by 18.08% (49 students). The **limitation** strategy was the least preferred, with only 8.12% (22 participants) identifying it as their top choice.

Specific preferences within each strategy

Students who prioritized **acquisition** were most interested in gaining qualities and skills such as self-confidence, patience, perseverance, openness to criticism, public speaking, assertiveness, interpersonal communication, foreign language proficiency, and creative abilities like drawing or playing a musical instrument.

Those who selected **rejection** typically aimed to eliminate traits they viewed as obstacles, including laziness, procrastination, low self-esteem, shyness, irritability, a lack of willpower, over-reliance on others' opinions, and various unhealthy habits.

The **transformation** strategy, which reflects a more nuanced approach, involves developing already existing traits or converting weaknesses into strengths—such as turning laziness into diligence. Students in this group expressed a desire to strengthen skills like memory, logical thinking, stress management, academic efficiency, and time organization. Some also reported goals related to language improvement, cooking, and athletic performance.

Students who opted for **limitation** sought to place boundaries on behaviors rather than eliminate them entirely. Common examples included reducing time on social media, limiting swearing, smoking, overeating, or cutting down on tendencies such as irresponsibility, passivity, irritability, or pessimism.

In the next section, **Table 2** presents the mean values of overall agency levels among the participants, alongside standard deviations for each metric. This will help contextualize the connection between students' agency and their preferred self-improvement strategies.

Table 2. Medium values and standard deviations for the agency factor and its manifestations

Agency	Mean values	Standard deviations
Overall agency	6.59	1.32
Activity – reactivity	6.54	1.45
Autonomy – dependency	6.75	1.33
Integrity – non-integration	6.74	1.32
Indirectness – immediacy	6.73	1.50
Creativity – reproductivity	5.92	1.55
Intrinsic value – low value	6.92	1.12

Table 3. Strategies for self-improvement among students with different levels of agency, overall data, and specific indicators

Overall agency and specific indicators (levels)	Self-improvement strategies									
	Acquisition		Rejection		Transformation		Limitation		Total:	
	n	%	n	%	n	%	n	%	n	%
High	16	33.33	12	25	18	37,5	2	4.17	48	100
Medium	79	43.64	57	31.49	31	17.13	14	7.74	181	100
Low	22	52.38	14	33.33	2	4.76	4	9.53	42	100
Significance of differences of extreme groups (φ* – Fisher's angular transformation)	1.79, p≤ .05		0.87, non-significant		4.14, p≤ .001		1.01, non-significant			
Activity									6.92	1.12
High	24	37.5	17	26.56	18	28.13	5	7.81	64	100
Medium	74	45.96	49	30.43	27	16.77	11	6.84	161	100
Low	20	43.48	17	36.96	6	13.04	3	6.52	46	100
Significance of differences of extreme groups (φ* – Fisher's angular transformation)	1.34, non-significant		1.15, non-significant		1.94, p≤ .05		0.25, non-significant			
Autonomy										
High	34	37.36	28	30.77	25	27.47	4	4.4	91	100
Medium	60	49.18	27	22.13	21	17.21	14	11.48	122	100
Low	27	46.55	21	36.22	8	13.79	2	3.44	58	100
Significance of differences of extreme groups (φ* – Fisher's angular transformation)	1.11, non-significant,		0.67, non-significant		2.04, p≤ .05		0.30 non-significant			
Integrity										
High	29	40.85	17	23.94	18	25.35	7	9.86	71	100

Medium	68	43.87	48	30.97	29	18.71	10	6,45	155	100
Low	18	40	18	40	4	8.89	5	11.11	45	100
Significance of differences of extreme groups (φ* – Fisher's angular transformation)	0,04, non-significant		1.82, p≤0,05		2.36, p≤0,01		0.11, non-significant			
Indirectness										
High	26	34,21	23	30,26	22	28,95	5	6,58	76	100
Medium	66	47,48	38	27,33	24	17,27	11	7,92	139	100
Low	26	46,43	23	41,07	4	7,14	3	5,36	56	100
Significance of differences of extreme groups (φ* – Fisher's angular transformation)	1.41, non-significant		1.27, non-significant		3,39, p≤0,001		0.29, non-significant			
Creativity										
High	17	38.64	17	38.64	8	18.18	2	4.54	44	100
Medium	50	44.64	33	29.46	21	18,75	8	7,15	112	100
Low	51	44.35	33	28.7	22	19,13	9	7,82	115	100
Significance of differences of extreme groups (φ* – Fisher's angular transformation)	0.66. non-significant		1.18. non-significant		0.13. non-significant		0.77. non-significant			
Intrinsic value										
High	35	35.71	25	25.51	30	30.61	8	8.17	98	100
Medium	54	45.76	41	34.74	17	14.41	6	5.09	118	100
Low	29	52.72	17	30.91	4	7.27	5	9.1	55	100
Significance of differences of extreme groups (φ* – Fisher's angular transformation)	2.04. p≤ .05		0.71. non-significant		3.71. p≤ .001		0.19. non-significant			

The data presented in **Table 3** indicate that the selection of self-improvement strategies varies notably among students with differing levels of agency. Among students with high agency, the most commonly selected strategies were transformation (37.5%; 18 students), acquisition (33.33%; 16 students), and rejection (25%; 12 students). The limitation strategy was the least chosen in this group (4.17%; 2 students), suggesting that students with strong agency are more inclined toward constructive or developmental approaches rather than restrictive ones.

In the medium agency group, the use of the acquisition strategy increased to 43.64% (79 students), while rejection remained similarly high at 31.49% (57 students). However, the preference for transformation dropped to 17.13% (31 students), and use of the limitation strategy saw a slight rise to 7.74% (14 students). This shift may reflect a tendency among students with average agency to favor more immediate or tangible forms of self-regulation.

For students classified as having low agency, reliance on the acquisition strategy further increased to 52.38% (22 students). Use of the rejection strategy remained relatively stable (33.33%; 14 students), while preference for transformation significantly declined (4.76%; 2 students). Notably, adoption of the limitation strategy rose to 9.53% (4 students), indicating a modest but meaningful shift toward behavioral restriction in the absence of high internal agency resources.

An analysis of individual agency components revealed that lower levels of directness, integrity, autonomy, and activity were linked with reduced use of the transformation strategy. Moreover, students with a low sense of intrinsic value not only showed less interest in transformational growth but also demonstrated a higher tendency to choose the acquisition strategy. Similarly, a weakened sense of self-integrity was associated with increased reliance on avoidance-based strategies, such as rejection or limitation—reaching up to 40% usage compared to just 23.94% among students with high integrity.

From this, we can draw a general conclusion: students with higher levels of agency tend to adopt a broader range of constructive strategies—namely, acquisition, rejection, and transformation—that align with their aspirations for personal growth. In contrast, students with lower agency levels show limited use of transformation strategies and greater dependence on acquisition, particularly when motivated by deficiencies in self-worth or personal autonomy. A low sense of integrity appears to steer students toward strategies that focus on eliminating or avoiding undesirable traits, rather than cultivating new capabilities.

A closer examination of acquisition strategies further highlights qualitative differences based on agency level. Students with high agency tend to pursue qualities such as perseverance, time management, assertiveness, and emotional self-regulation. Their goals often include learning new skills like public speaking, drawing, or mastering a foreign language—reflecting a proactive approach to self-development.

In contrast, students with lower agency focus more on building self-confidence and independence, often starting from a sense of lacking these attributes. While they, too, aim to acquire specific skills, their efforts are typically framed within a more foundational need for personal empowerment rather than performance optimization.

The above findings are further supported by a qualitative analysis of the avoidance strategy employed by students across different agency levels. Students with higher levels of agency often express a desire to eliminate traits such as laziness, adherence to imposed standards, stubbornness, irritability, and poor time management. Interestingly, students with lower agency levels report similar goals. They, too, aim to overcome characteristics like laziness, shyness, weak will, emotional dependence, anger, resentment, and association with "toxic" social circles. In both cases, the motivation appears rooted in the pursuit of positive self-acceptance and the clear expression of personal independence.

In summary, the study's hypothesis was only partially confirmed. While the transformation strategy demonstrated a meaningful correlation with higher agency levels, the other three self-improvement strategies did not align with the initial expectations. In particular, the acquisition strategy was more frequently used by students with lower agency levels, which directly contradicts the original assumption.

Comparing these results with existing literature in psychology reveals several points of alignment and contrast. Contemporary psychological research emphasizes the motivational aspects of self-development, including self-improvement as one of its forms. It is also well-established that the motivation for professional self-improvement evolves with personal maturity and develops through professional experience. However, this process remains underdeveloped among young professionals [25], underscoring the importance of introducing targeted developmental programs during undergraduate studies [26].

Moreover, various factors have been identified as facilitators of self-improvement. These include experiencing gratitude [27], recognizing personal failures [28], practicing self-compassion and attending to one's own needs [29], and fostering self-efficacy, especially in contexts such as health recovery [30]. Self-improvement may also be stimulated through competitive interaction with others [31], as well as through structured training, such as emotional self-regulation strategies [32]. Finally, a stable disposition toward self-improvement has been shown to positively influence interpersonal attitudes and increase altruistic behavior [33].

The study conducted demonstrates that an individual's inclination toward self-improvement is reflected not only in motivational components but also in the selection of specific self-improvement strategies. The novelty of this research lies in identifying the role of personal agency in shaping students' preferences for such strategies. It was found that a lower level of agency and its constituent components tends to limit the range and intensity of self-improvement strategies employed. At present, two strategies—acquisition and rejection—are used most frequently. Both are oriented toward enhancing the value of the self.

Students with high levels of agency tend to choose self-improvement strategies based on actual personal development needs rather than a desire to compensate for low self-esteem or a lack of self-acceptance, which they already possess to a sufficient degree. As a result, the transformation strategy is more commonly observed in this group. Meanwhile, the limitation strategy remains the least used across all agency levels.

Conclusion

In summarizing the findings, it can be concluded that self-improvement is a critical dimension of personal self-development. It is an active and intentional process aimed at cultivating desirable traits and eliminating negative ones. As a distinct form of self-development, self-improvement is implemented through specific strategies, including acquisition, rejection, transformation, and limitation.

This study has shown that the choice of these strategies is significantly influenced by the level of personal agency. Agency, understood as the individual's capacity to act as an agent of their own development, serves as a key factor in determining self-improvement behavior. Students with higher agency levels most frequently employed the strategies of acquisition, rejection, and transformation. Conversely, students with lower levels of agency favored the acquisition strategy, a preference particularly linked to a diminished sense of intrinsic value—a core component of agency. When agency was low in terms of self-integrity, the rejection strategy became more pronounced. The limitation strategy, however, was infrequent among both groups.

Limitations and directions for future research

The primary limitation of the present study lies in the demographic composition of the sample, which predominantly consisted of female students. This reflects the gender distribution typical of pedagogical and psychology departments at teacher training universities in Russia and Kazakhstan. While this does not compromise the internal validity of the findings, it does limit their generalizability across gender lines.

Future research should consider:

- Replicating this study among male student populations to validate the identified patterns.
- Investigating the role of psychological and human capital in shaping preferences for self-improvement strategies.

The findings from this study offer practical implications. They can be integrated into the professional training of future educators and psychologists, as well as into programs aimed at guiding students in constructing personalized self-development pathways. Furthermore, these insights may be valuable in university-based psychological counseling services, supporting students in making informed and effective self-improvement choices.

References

1. Hanawi SA, Saat NZM, Zulkafly M, Hazlenah H, Taibukahn NH, Yoganathan D, et al. Impact of a healthy lifestyle on the psychological well-being of university students. Int J Pharm Res Allied Sci. 2020;9(2):1-7.
2. Zhytnik T, Yermak H, Moskalyova L, Podplota S, Fedorova O, Liapunova V. Socio-psychological aspects of HIV infection prevention among first-year university students as a health-saving factor. Int J Pharm Res Allied Sci. 2020;8(1):1-8.
3. Belousova NA, Mamylina NV, Valeryevna Y, Semchenko NEP. Psychophysiological aspects of formation students' willingness for wellness by means of physical education. J Adv Pharm Educ Res. 2021;11(4):35-40.
4. Brushlinsky AV. Subject: thinking, teaching, imagination. Moscow: MPSI; 1996.
5. Bandura A. Perceived self-efficacy in the exercise of personal agency. Psychologist. 1989;10:411-24.
6. Schukina MA. Psychology of personal self-development. St. Petersburg: St. Petersburg University Press; 2015. 348 p.
7. Rubinstein SL. Being and consciousness. Man and the world. St. Petersburg: Peter; 2003. 508 p.
8. Serykh A. The teacher's agency as a condition for psychological readiness to interact with victimized children. Pers Dev. 2006;1:155-61.
9. Slobodchikov VI, Isaev EI. Basics of psychological anthropology. Psychology of human development. Development of subjective reality in ontogeny. Moscow: St. Tikhon Humanitarian University Press; 2013. 400 p.
10. Nikitin EP, Kharlamenkova NE. The phenomenon of human self-affirmation. St. Petersburg: Aletheia; 2000. 217 p.
11. Adler A. Practice and theory of individual psychotherapy. Moscow: Academic Project; 2007. 217 p.
12. Sedikides C, Hepper EGD. Self-improvement. Soc Pers Psychol Compass. 2009;3(6):899-917. doi:10.1111/j.1751-9004.2009.00231.x
13. Schaffner AK. The art of self-improvement: Ten timeless truths. New Haven: Yale University Press; 2021. 253 p. doi:10.2307/j.ctv1vbd15n
14. Hepper EG, Gramzow RH, Sedikides C. Individual differences in self-enhancement and self-protection strategies: An integrative analysis. J Pers. 2010;78(2):781-814. doi:10.1111/j.1467-6494.2010.00633.x
15. Maralov VG, Nizovskikh NA. Self-improvement strategy in personal self-development. Bull Liberal Educ. 2015;1:34-9.
16. Maralov VG. Acquisition or disposal: The problem of the choice of a self-improvement strategy by students. Integr Educ. 2017;21(3):477-88. doi:10.15507/1991-9468.088.021.201703.477-488
17. Vaughn M. Making sense of student agency in the early grades. Phi Delta Kappan. 2018;99(7):62-6. doi:10.1177/0031721718767864
18. Jaaskela P, Poikkeus AM, Vasalampi K, Valleala UM, Rasku-Puttonen H. Assessing agency of university students: Validation of the AUS scale. Stud High Educ. 2017;42(11):2061-73. doi:10.1080/03075079.2015.1130693
19. Geikhman LK, Kabanov VS. Obtaining agency by master students at a technical university: A new challenge for engineering education. High Educ Russ. 2021;30(12):143-56. doi:10.31992/0869-3617-2021-30-12-143-156
20. Bandura A. Self-efficacy: The foundation of agency. In: Perrig WJ, Grob A, editors. Control of human behavior, mental processes, and consciousness: Essays in honor of the 60th birthday of August Flammer. Mahwah, NJ: Erlbaum; 2000. p. 16-33.
21. Sharma HL, Rani R. Relationship of personal growth initiative with self-efficacy among university postgraduate students. J Educ Pract. 2013;4(16):125-35.
22. Jahannejadi Y, Taghvaei D, Pirani Z. The effect of social adjustment and hope on the educational well-being of students: The mediating role of self-efficacy. Int J Pharm Phytopharmacol Res. 2020;10(4):191-8. Available from: https://eijppr.com/ByaCcv8

23. Cannon C, Rucker DD. Motives underlying human agency: How self-efficacy versus self-enhancement affect consumer behavior. Curr Opin Psychol. 2022;101335. doi:10.1016/j.copsyc.2022.101335

24. Lo-oh JL, Neba BE. Agency and the self-development of adolescent students in the University of Bamenda, Cameroon. Eur J Res Soc Sci. 2019;7(5):42-57.

25. Kuanysheva BT, Aubakirova RZ, Pigovayeva NI, Fominykh NI. Technologization of the pedagogical process as a teacher self-improvement factor. J Soc Stud Educ Res. 2019;10(3):404-33.

26. Petrenko LM, Varava IP, Pikilnyak AV. Motivation readiness of future software engineer's professional self-improvement and prospects of its formation in college cloud environment. CTE; 2019.

27. Armenta CN, Fritz MM, Lyubomirsky S. Functions of positive emotions: Gratitude as a motivator of self-improvement and positive change. Emotion Rev. 2017;9(3):183-90. doi:10.1177/1754073916669596

28. Breines JG, Chen S. Self-compassion increases self-improvement motivation. Pers Soc Psychol Bull. 2012;38(9):1133-43. doi:10.1177/0146167212445599

29. Chwyl C, Chen P, Zaki J. Beliefs about self-compassion: Implications for coping and self-improvement. Pers Soc Psychol Bull. 2021;47(9):1327-42. doi:10.1177/0146167220965303

30. Szczepańska-Gieracha J, Mazurek J. The role of self-efficacy in the recovery process of stroke survivors. Psychol Res Behav Manag. 2020;13:897-906. doi:10.2147/PRBM.S273009

31. Wolf T, Jahn S, Hammerschmidt M, Weiger WH. Competition versus cooperation: How technology-facilitated social interdependence initiates the self-improvement chain. Int J Res Mark. 2021;38(2):472-91. doi:10.1016/j.ijresmar.2020.06.001

32. Wimmer L, von Stockhausen L, Bellingrath S. Improving emotion regulation and mood in teacher trainees: Effectiveness of two mindfulness trainings. Brain Behav. 2019;9(9):e01390. doi:10.1002/brb3.1390

33. Chernyak-Hai L, Tziner A. Attributions of managerial decisions, emotions, and OCB: The moderating role of ethical climate and self-enhancement. J Work Organ Psychol. 2021;37(1):36-48. doi:10.5093/jwop2021a4