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RELATIONSHIP BETWEEN INDIVIDUAL VALUES AND INVOLVEMENT IN ONLINE LEARNING: THE ROLE OF SOCIAL CAPITAL

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Взаимосвязь индивидуальных ценностей и вовлеченности в онлайн-обучение: роль социального капитала

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Abstract

In 2019 the federal project "Digital Educational Environment" aimed at creating and implementing a digital educational environment in educational organizations was launched. The COVID-19 pandemic foregrounded this project and accelerated its implementation. The forced digital transformation of the education system, implemented in a short time, requires an assessment of its results not only from a technical point of view, but also from the point of view of socio-psychological factors that affect the quality of students' involvement in the digital educational environment. This paper provides the empirical results of an investigation of a relationship of higher-order values and social capital with involvement in online

Резюме

В 2019 г. был запущен федеральный проект «цифровая образовательная среда», направленный на создание и внедрение в образовательных организациях цифровой образовательной среды. Пандемия COVID-19 актуализировала идею данного проекта и ускорила ее реализацию. Вынужденная цифровая трансформация системы образования, реализованная в короткие сроки, требует оценки своих результатов не только с технической точки зрения, но и с точки зрения социально-психологических факторов, напрямую влияющих на качество вовлеченности обучающихся в цифровую образовательную среду. В статье представлены результаты эмпирического исследования, целью которого являлось изучение связи ценностей высшего порядка с вовлеченностью в онлайн-обучение и роли социального капитала в данной связи. В исследовании приняли участие 405 студентов НИУ

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learning. The study's sample is presented by 405 students at the National Research University "Higher School of Economics". The main data collection method is a socio-psychological survey which includes Williams` social capital scale, Schwartz's 21-item portrait values questionnaire, Involvement in online learning's scale, and questions about socio-demographic characteristics (gender and age). The results of the Pearson correlation analysis illustrate that involvement in online learning relates to social capital and higher-order values, while its relation to age and gender was not found. The results of additive multiple moderation analysis demonstrates that higher-order values contribute to involvement in online learning and social capital tends to change the nature of this relationship. While bonding social capital differentiates the values of involvement in online learning related to higher-order values, based on one's own level, a higher bridging social capital inclines to make this relationship negative in some cases.

Keywords: online learning, individual values, social capital.

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ВШЭ. Основным методом сбора данных являлся социально-психологический опрос, который включал методику Д. Ульямса по оценке связывающего и соединяющего социального капитала, методику Ш. Шварца по оценке степени выраженности индивидуальных ценностей, авторскую методику по оценке вовлеченности в онлайн-обучение, а также ряд вопросов о социально-демографических характеристиках респондентов (пол и возраст), которые по итогам корреляционного анализа оказались не связанными с вовлеченностью в онлайн-обучение. Результаты корреляционного анализа показывают, что вовлеченность в онлайн-обучение коррелирует с социальным капиталом и ценностями более высокого порядка, в то время как корреляция с возрастом и полом не была обнаружена. Результаты множественного модерационного анализа иллюстрируют, что ценности высшего порядка связаны с вовлеченностью в онлайн-обучение, а социальный капитал является модератором данной связи. В то время как связывающий социальный капитал способствует вариативности значений вовлеченности в онлайн-обучение, связанной с ценностями высшего порядка, в зависимости от собственного значения, более высокая степень выраженности соединяющего социального капитала меняет характер данной связи и связана со снижением вовлеченности в онлайн-обучение.

Ключевые слова: онлайн-обучение, ценности, социальный капитал.

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Introduction

In recent years, there has been a dramatic shift to online learning. Previously, university education was massively face-to-face, but now there is some transition to a distance learning format, which is still emerging. At the same time, many students may simply be unprepared for this format of learning, and therefore it is quite important to look at what factors can help with adaptation to online learning. According to a study by Hussein and colleagues (Hussein et al., 2020), it was found that there are both a few positive and negative attitudes towards online education. The most frequently reported positive components were time- and money saving (55%), safety (48.9%), convenience (40%) and involvement (13.3%). Negative components were identified as distraction (53.3%), congestion (27.7%), technical problems (15.5%) and poor support from colleagues and trainers (8.8%). As can be seen, involvement in the online learning process was only occasionally attributed to the positive aspects of online learning. Dhawan's research (Dhawan, 2020) extends this list and points to the unattractiveness and boredom of this learning format, as well as the difficulty of balancing family, work, social life, and online learning.

Nowadays, there are several models of student involvement in online learning. For example, Kahu (Kahu, 2013) sees involvement in the learning process as an overarching meta-construct represented by the interaction of its six elements: sociocultural context; structural and psychosocial influences; involvement; and proximal and distal consequences. According to this model, a student's interaction with the university context and its representatives unfolds in a particular sociocultural context and entails the student's affective, cognitive, and behavioural responses, which, in turn, have short- and long-term academic and social consequences. In another model, presented by Bond and colleagues (Bond et al., 2020), involvement is driven by the interaction of external factors (learning environment, activities, and relationships) and is defined as the energy and effort expended by students and expressed through affective, cognitive, or behavioural measures. It is assumed, however, that increased involvement leads to increased energy expenditure in learning and several outcomes that, in turn, further reinforce involvement. Thus, it becomes clear that the central components of learning involvement are, directly, the learner's personality and his or her relationship with other participants in the process.

The problem of involvement in online learning has not been studied over a long period and is more often considered in the context of involvement in the use of information and communication technologies (hereinafter — ICT), because, without the latter, the implementation of online learning is not possible.

Bagchi and her colleagues (Bagchi et al., 2015) found that in developed countries, the values of Conformity, Tradition, Security and Power contribute to involvement in the use of ICT, and in developing countries — Achievement, Stimulation, Self-Direction, Tradition, and Security. The obtained results partially confirm the study of Tatarko and his colleagues (Tatarko et al., 2022) — the exception is the lack of connection with the value of Stimulation. Since there is a positive

correlation between the individual's values and her involvement in ICTs, we consider that online learning, as one of the mediums of implementation and application of ICTs, will also be conditioned by the individual's values.

Involvement in online learning is also characterised by the quality of the individual's relationship with other participants in the process, or social capital (Coleman, 1988). Social capital can be divided into bridging and bonding (Putnam, 2000). Bonding social capital determines cohesion and interaction within one's social group, while bridging social capital determines social ties with representatives of other groups. Social contact with instructors and with other students has been found to play a significant role in the involvement in online learning (Mishra, 2020). Openness, agreeableness, and extroversion of the individual, which underlie their social capital, play an important role in establishing contact and maintaining relationships with them (Tulin et al., 2018). In general, students with proactive personality traits adapt faster to online learning (Spitzmuller et al., 2015).

Our research questions are: 1) Do values relate to involvement in online learning? 2) Is social capital a moderator of the relationship between values and involvement in online learning?

Method

Sample

The sample includes 405 respondents (71.1% of women) aged from 17 to 20 (M_{age} = 18.3, σ = 0.57). 100% of respondents have incomplete higher psychological education (Russian students at National Research University "Higher School of Economics").

Procedure

The strategy of sampling respondents was convenience sample with an element of self-selecting sample. Research was conducted on the online platform "1ka". Students received an invitation email via @hse.ru. The invitation consisted of information about the research initiator, research aim, a request to participate in a study, confidentiality of information received in the study, and time supposed to be spent on completing the survey (~20 minutes).

A socio-psychological survey was presented by statements which allow the researcher to evaluate respondents' higher-order values, social capital, and involvement in online learning, and to know their socio-demographic characteristics. The survey was individually filled without time limitation and researcher's control.

Instruments

For measuring social capital (hereinafter – SC), Williams's social capital scale was used (Williams, 2006). The scale allows the researcher to assess two types of SC — bonding (Cronbach's α = .88; M_{age} = 3.95, σ = 0.70) and bridging (Cronbach's

$\alpha = 0.88$; $M_{age} = 3.73$, $\sigma = 0.72$). The scale includes 20 statements and has a 5-point Likert response scale ranging from 1 ("absolutely disagree") to 5 ("absolutely agree").

For estimating higher-order values, the Russian version of Schwartz's 21-item portrait values questionnaire was used (Schwartz et al., 2012). The questionnaire allows the researcher to evaluate four higher-order values: "Self-Transcendence" (Cronbach's $\alpha = 0.75$; $M_{age} = 3.67$, $\sigma = 0.78$), "Conservation" (Cronbach's $\alpha = 0.56$; $M_{age} = 2.93$, $\sigma = 0.63$), "Openness to Change" (Cronbach's $\alpha = 0.80$; $M_{age} = 3.68$, $\sigma = 0.80$), and "Self-Enhancement" (Cronbach's $\alpha = 0.75$; $M_{age} = 3.63$, $\sigma = 0.82$). This questionnaire has 21 statements organised in accordance with a 7-point Likert response scale from "very much like me" to "not like me at all".

Involvement in online learning`s scale (Cronbach's $\alpha = 0.86$; $M_{age} = 2.86$, $\sigma = 0.97$). The scale in Russian was created on a basis of Hussein and his colleagues' investigation of online learning experience of undergraduate students (Hussein et al., 2020). This scale is presented by three statements oriented to measure three components of involvement in online learning – cognitive, behavioural, and emotional — in accordance with a 5-point Likert response scale, ranging from 1 ("absolutely disagree") to 5 ("absolutely agree"). An example of an item is "I work effectively remotely".

Also, the survey includes questions about socio-demographic parameters (gender and age).

Data Processing

Data analysis was conducted via IBM SPSS Statistics 27 software and such plugins as PROCESS 3.3. The Dataset was explored to reveal the outliers and missing values. Pearson correlation analysis was carried out for checking linear relations of involvement in online learning with higher-order values and SC. Additive multiple moderation analysis was used to investigate the relationship between higher-order values, SC, and involvement in online learning.

Results

Table 1 presents the results of correlation analysis of the relationship between involvement in online learning, higher-order values, SC, and socio-demographic characteristics. The involvement in online learning is statistically significant and positively related to higher-order values and SC, while this relationship was not revealed for gender and age.

Then, the relationship between higher-order values and involvement in online learning, considering SC as a moderator, was examined. Tables 2–5 show the results of building four additive multiple moderation models.

Table 2 illustrates the results of investigating the relationship between self-transcendence, involvement in online learning, and SC. The effect of self-transcendence and SC is statistically significant and explains 6% of the variance of the variance of involvement in online learning. Self-transcendence is statistically significant and positively related to involvement in online learning. The relationship between both

Table 1

Pearson Correlation Results (N = 405)

Variables	2	3	4	5	6	7	8	9
1. Involvement in online learning	.24***	.21***	.18***	.15**	.15**	.20***	−.05	.07
2. Self-Transcendence	–	.44***	.56***	.30***	.50***	.59***	−.20***	.28***
3. Conservation		–	.14*	.16**	.13*	.19***	−.07	.11*
4. Openness to Change			–	.54***	.49***	.63***	−.19***	.22***
5. Self-Enhancement				–	.26***	.42***	−.11*	.21***
6. Bonding SC					–	.64***	−.24***	.33***
7. Bridging SC						–	−.23***	.41***
8. Age							–	−.27***
9. Gender								–

* $p < .05$, ** $p < .01$, *** $p < .001$.

Table 2

Relationship between Self-Transcendence, SC, and Involvement in Online Learning (N = 405)

	Involvement in Online Learning			
	β	SE	t	95% CI
Constant	−0.90	0.95	−0.95	[−2.77; 1]
Self-Transcendence	1.03	0.30	3.44***	[0.44; 1.62]
Bonding SC	0.25	0.40	0.63	[−0.53; 1.03]
Bridging SC	0.55	0.36	1.53	[−0.16; 1.26]
Self-Transcendence × Bonding SC	−0.08	0.11	−0.72	[−0.30; 0.14]
Self-Transcendence × Bridging SC	−0.13	0.10	−1.34	[−0.33; 0.06]
R^2	0.06			
$F(5, 399)$	5.48***			
$\triangle R^2_{bonding\ sc}$	.00			
$\triangle F_{\text{bonding sc}}(1, 399)$	0.52			
$\triangle R^2_{bridging\ sc}$	.00			
$\triangle F_{bridging\ sc}(1, 399)$	1.80			
$\triangle R^2$	.02			
$\triangle F(2, 399)$	4.30*			

* $p < .05$, *** $p < .001$.

types of SC and involvement in online learning was not found. The (partial) moderation effect of these types of SC is statistically insignificant. However, their (cumulative) moderation effect is statistically significant and increases the coefficient of determination by 2%.

Figure 1 displays the relationship between self-transcendence and involvement in online learning moderated by bonding and bridging SC. Self-transcendence is posi-

tively related to involvement in online learning. With higher bonding SC and lower bridging SC, this relationship becomes more apparent. However, these changes are not significant enough to be decisive for the character of this relationship.

Table 3 shows the results of exploring the relationship of conservation, involvement in online learning, and SC. The effect of conservation and SC is statistically

Figure 1

Relationship Between Self-Transcendence and Involvement in Online Learning Moderated by Bonding and Bridging SC (N = 405)

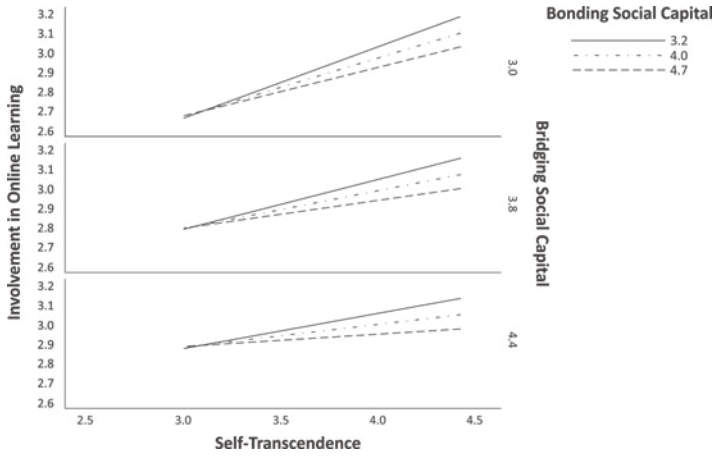


Table 3

Relationship between Self-Transcendence, SC, and Involvement in Online Learning (N = 405)

	Involvement in Online Learning			
	β	SE	t	95% CI
Constant	−0.90	.95	−0.95	[−2.77; 1]
Self-Transcendence	1.03	.30	3.44***	[0.44; 1.62]
Bonding SC	0.25	.40	0.63	[−0.53; 1.03]
Bridging SC	0.55	.36	1.53	[−0.16; 1.26]
Self-Transcendence × Bonding SC	−0.08	.11	−0.72	[−0.30; 0.14]
Self-Transcendence × Bridging SC	−0.13	.10	−1.34	[−0.33; 0.06]
R^2	0.06			
$F(5, 399)$	5.48***			
$\triangle R^2_{bonding\ sc}$	.00			
$\triangle F_{\text{bonding sc}}(1, 399)$	0.52			
$\triangle R^2_{bridging\ sc}$	.00			
$\triangle F_{bridging\ sc}(1, 399)$	1.80			
$\triangle R^2$	.02			
$\triangle F(2, 399)$	4.30*			

* $p < .05$, *** $p < .001$.

Table 4

The Relationship between Conservation, SC, and Involvement in Online Learning (N = 405)

	Involvement in Online Learning			
	β	SE	t	95% CI
Constant	−0.98	1.10	−0.90	[−3.14; 1.17]
Conservation	1.05	0.39	2.67*	[0.28; 1.82]
Bonding SC	0.85	0.41	2.06*	[0.04; 1.65]
Bridging SC	−0.09	0.37	−0.25	[−0.83; 0.64]
Conservation × Bonding SC	−0.28	0.14	−1.99*	[−0.55; −0.01]
Conservation × Bridging SC	0.10	0.13	0.73	[−0.16; 0.35]
R^2	.08			
$F(5, 399)$	7.32***			
$\triangle R_{bonding\ sc}^{\ 2}$	.01			
$\triangle F_{\text{bonding sc}}(1, 399)$	3.99*			
$\triangle R_{bridging\ sc}^{\ 2}$	.00			
$\triangle F_{bridging\ sc}(1, 399)$	0.53			
$\triangle R^2$	.01			
$\triangle F(2, 399)$	2.63			

* $p < .05$, *** $p < .001$.

significant and explains 8% of the changing of variance of involvement in online learning. Conservation and bonding SC are statistically significant and positively relate to involvement in online learning, while bridging SC demonstrates insignificant results. Whereas the (cumulative) moderation effect of both types of SC is statistically insignificant, the (partial) moderation effect of bonding SC is statistically significant and increases the coefficient of determination by 1%. The interaction effect of conservation and bonding SC for involvement in online learning is statistically significant and negative. The interaction effect of bridging SC was not found.

Figure 2 demonstrates the relationship between conservation and involvement in online learning, moderated by bonding and bridging SC. The relationship between conservation and involvement in online learning is positive. While increasing the value of bridging SC insignificantly elevates the value of involvement in online learning related to conservation, the lower value of bonding SC significantly contributes to a positive relationship between conservation and involvement in online learning.

Table 4 indicates the results of assessing the relationship between openness to change, involvement in online learning, and SC. The effect of openness to change and SC is statistically significant and explains 7% of the changing of variance of involvement in online learning. Openness to change is statistically significant and positively related to involvement in online learning, while both types of SC insignificantly relate to the involvement. While the (cumulative) moderation

Figure 2

Relationship Between Conservation and Involvement in Online Learning Moderated by Bonding and Bridging SC (N = 405)

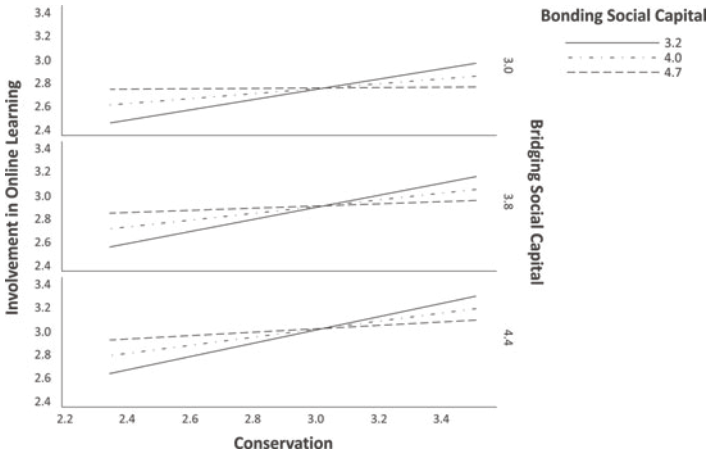


Table 5

The Relationship between Openness to Change, SC, and Involvement in Online Learning (N = 405)

	Involvement in Online Learning			
	β	SE	t	95% CI
Constant	−0.52	0.92	−0.57	[−2.34; 1.29]
Openness to Change	0.82	0.29	2.85**	[0.26; 1.39]
Bonding SC	0.20	0.43	0.47	[−0.64; 1.05]
Bridging SC	0.64	0.37	−1.71	[−0.10; 1.37]
Openness to Change × Bonding SC	−0.06	0.12	−0.50	[−0.28; 0.17]
Openness to Change × Bridging SC	−0.14	0.10	−1.42	[−0.33; 0.05]
R^2	.07			
$F(5, 399)$	5.51***			
$\triangle R^2_{bonding\ sc}$	.00			
$\triangle F_{\text{bonding sc}}(1, 399)$	0.25			
$\triangle R^2_{bridging\ sc}$	.01			
$\triangle F_{bridging\ sc}(1, 399)$	2.01			
$\triangle R^2$	.02			
$\triangle F(2, 399)$	4.35*			

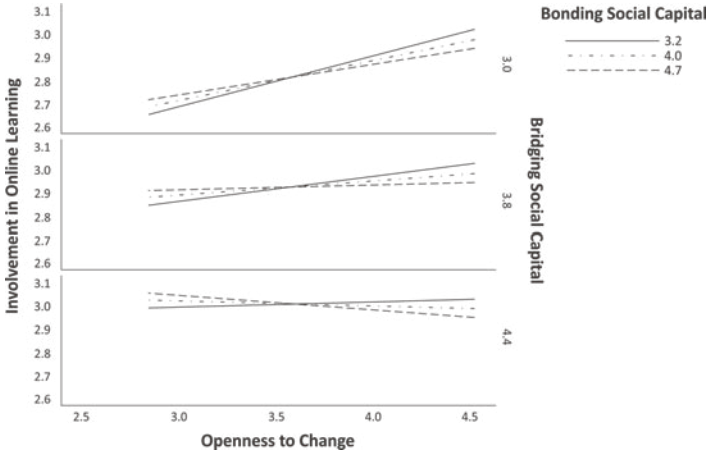
* $p < .05$, ** $p < .01$, *** $p < .001$.

effect of both types of SC is statistically significant and increases the coefficient of determination by 2%, their (partial) moderation effect is statistically insignificant.

Figure 3 depicts the relationship between openness to change and involvement in online learning, moderated by bonding and bridging SC. The relationship

Figure 3

The Relationship between Openness to Change and Involvement in Online Learning Moderated by Bonding and Bridging SC (N = 405)



between openness to change and involvement in online learning is positive. This relationship slightly differs depending on the value of bonding SC – the lower the value of bonding SC, the more distinct slope of the line of the relationship. At the same time, bonding SC will not produce the same differences in the slopes of the lines at high values of bridging SC. At the high values of bridging and bonding SC, the relationship between openness to change and involvement in online learning tends to zero.

Table 5 displays the results of the estimation of the relationship between self-enhancement, involvement in online learning and SC. The effect of self-enhancement and SC is statistically significant and explains 6% of the changing of variance of involvement in online learning. Self-enhancement and bridging SC are statistically significant and positively relate to involvement in online learning while bonding SC demonstrates opposite results. The (cumulative) moderation effect of both types of SC is statistically significant and increases the coefficient of determination by 2%. While the (partial) moderation effect of bonding SC is statistically insignificant, the (partial) moderation effect of bridging SC is statistically significant and increases the coefficient of determination by 1%. The interaction effect of self-enhancement and bridging SC is statistically significant and negative. The interaction effect of bonding SC was not found.

Figure 4 depicts the relationship between self-enhancement and involvement in online learning, moderated by bonding and bridging SC. The relationship between self-enhancement and involvement in online learning is positive. This relationship faintly varies according to the value of bonding SC – the lower the value of bonding SC, the sharper slope of the line of the relationship. At the same time, bonding SC will not produce the same differences in the slopes of the lines at high values of bridging SC. At the high values of bridging SC, the relationship between self-enhancement and involvement in online learning becomes opposite, regardless of the value of bonding SC.

Table 6

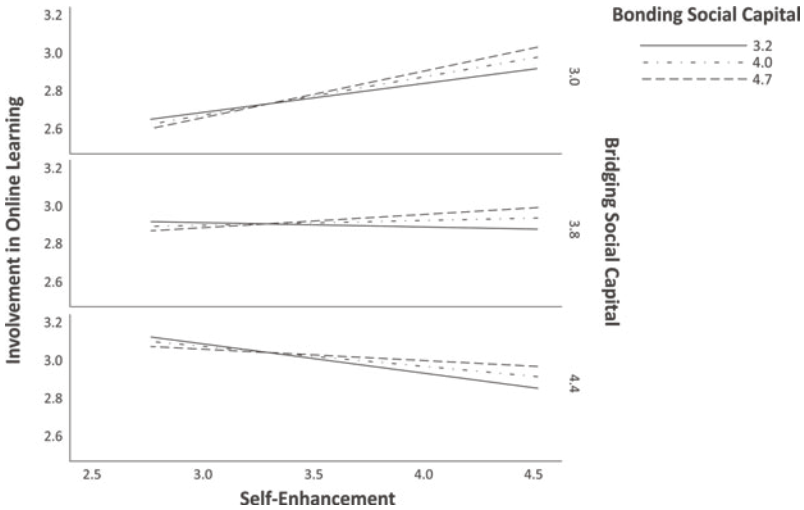
The Relationship between Self-Enhancement, SC, and Involvement in Online Learning (N = 405)

	Involvement in Online Learning			
	β	SE	t	95% CI
Constant	0.03	0.90	0.03	[−1.74; 1.79]
Self-Enhancement	0.62	0.27	2.26*	[0.08; 1.15]
Bonding SC	−0.20	0.35	−0.57	[−0.90; 0.49]
Bridging SC	0.95	0.34	2.83**	[0.29; 1.60]
Self-Enhancement × Bonding SC	0.06	0.09	0.66	[−0.12; 0.25]
Self-Enhancement × Bridging SC	−0.22	0.09	−2.43*	[−0.40; −0.04]
R^2	.06			
$F(5, 399)$	5.48***			
$\triangle R^2_{bonding\ sc}$	.00			
$\triangle F_{\text{bonding sc}}(1, 399)$	0.43			
$\triangle R^2_{bridging\ sc}$	.01			
$\triangle F_{bridging\ sc}(1, 399)$	5.91*			
$\triangle R^2$	.02			
$\triangle F(2, 399)$	4.05*			

* $p < .05$, ** $p < .01$, *** $p < .001$.

Figure 4

The Relationship between Self-Enhancement and Involvement in Online Learning Moderated by Bonding and Bridging SC (N = 405)



Discussion

In general, low bonding SC with low bridging SC is more likely to contribute more to a significant positive relationship between values and involvement in online learning. If the level of bonding social capital is medium or high, the moderation role is different depending on the level of bridging social capital. The fact that low levels of social capital improve the relationship between values and involvement can be explained by the factor of people being more focused on learning rather than on interaction with others. Therefore, the role of individual values becomes clearer. Interaction with people from both near and far influences this relationship, but in slightly different ways.

With high levels of bonding social capital and low levels of bridging social capital, the relationship between Self-Transcendence and online learning becomes clearer. Overall, however, the relationship is still positive. It can be assumed that the value of Self-Transcendence is less dependent on interactions with others and on their opinions and actions.

In the relationship between self-transcendence and online learning, the connection is significantly more positive when there is a low level of bridging social capital and a high level of bonding social capital. In general, however, the nature of the relationship does not change for any level of both types of social capital. This can be explained by the fact that the value of Conservation suggests adherence to certain rules and traditions that do not change. In this situation, it can be assumed that involvement in online learning turns out to be approximately the same regardless of the interaction with other people, particularly when there is more interaction with people close to you and less with others.

The nature of the relationship between Openness to change and involvement on online learning changes quite strongly when the level of bridging social capital increases. This can be explained by the fact that this value, in general, implies openness to new situations. Therefore, interaction with other people can indeed change this connection. In this case, the connection becomes less positive.

Finally, in the relationship between self-enhancement and involvement in online learning, the results are slightly different from the previous three cases. Here, the higher the level of social capital, the less positive the relationship. It can be assumed that people cannot realise themselves through this value because involvement in online learning will not allow them to do so fully.

In the context of the research devoted to involvement in ICT, the relationship between higher-order values and involvement in online learning was an expected outcome, which corresponded with the results of existing research on the relevant topic (Bagchi et al., 2015; Tatarko et al., 2022). Online learning is an environment where modern technologies are essential for its effective functioning.

A new and partly contradictory result for our research field is the one related to the role of social capital. In accordance with the results of previous research (Zheng et al., 2020; Mishra, 2020), it should positively contribute to involvement in online learning, while, in the frame of the present study, its contribution is negative. Such a result is supposedly related to such students' motivation as being involved in a university`s social environment, than being involved in online learning

itself. In this regard, online learning seems to be a component of a vast environment that provides great opportunities for people with higher levels of social capital to represent their potential and realise themselves in social interaction. Online learning itself solves the educational tasks aimed at achieving academic results.

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