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Learning Approaches as Predictors of Lifelong Learning Dispositions in a Sample of Romanian Educational Sciences Students

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Abstract

This research examines the relationship between students' learning approaches (deep and surface) and their dispositions toward lifelong learning. The OECD (2024) identifies lifelong learning as a key competence for social, professional and economic participation in contemporary context. In a rapidly changing educational environment, where adaptability and continuous skill development are increasingly important, it is essential to understand the factors that positively influence students' inclination toward lifelong learning. This study pursued two main objectives: (1) to validate the assessment instrument developed by Kirby et al. (2010) for measuring lifelong learning dispositions in a Romanian context, and (2) to investigate the predictive value of learning approaches on the five dimensions that constitute lifelong learning dispositions (goal setting, application of knowledge and skills, self-direction and self-assessment, information seeking, and adaptation of learning strategies). The research was conducted on a sample of 155 students from the Department of Educational Sciences at the West University of Timișoara. The findings indicated that the deep approach was a significant positive predictor of lifelong learning dispositions, whereas the surface approach was a significant negative predictor. These findings highlight the importance of educational practices that promote deep approach to learning, thereby enhancing students' readiness to meet current and future societal demands. This study also contributes to the Romanian literature by providing preliminary evidence regarding the use of an instrument previously validated and used in international research.

Keywords: lifelong learning; learning approaches; lifelong learning competence; higher education; student development

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1. Introduction

Rapid social, economic and technological changes have substantially reshaped individuals' relationship with education and professional development. In contemporary society, the skills acquired through initial education are often insufficient for long-term adaptation to labour-market demands and the continuous evolution of knowledge. In this context, lifelong learning has become a critical necessity, enabling individuals to continuously update their knowledge and skills in response to evolving societal demands (OECD, 2024). Against this backdrop, lifelong learning has become an objective of international education policy, representing a prerequisite for active engagement in professional and social life (OECD, 2024; UNESCO, 2022).

Lifelong learning is defined as the continuous, voluntary and intentional development of knowledge, skills and competencies in formal, non-formal and informal contexts (European Commission, 2001; Laal, 2011). Beyond participation in educational programmes, it also involves a sustained orientation toward self-directed learning, intellectual autonomy and a willingness to continuously adapt. However, despite its widespread use, lifelong learning remains a complex and multifaceted concept, encompassing diverse educational, social and economic dimensions (James, 2020). Consequently, the emphasis shifts from the mere accumulation of information to individual's capacity to learn effectively over time and respond flexibly to new situations.

In a university setting, this perspective has significant implications. Universities can no longer be viewed as institutions responsible for transmitting specialised knowledge; rather, they play a crucial role in fostering students' capacity for continuous learning and adaptation. In this sense, lifelong learning requires the development of transferable competences, including self-regulation, motivation and strategic learning abilities (Matsumoto-Royo et al., 2022). Accordingly, Candy (1994) and Knapper and Cropley (2000) emphasise that one of the central functions of the contemporary university is to develop students' ability to 'learn how to learn', enabling them to continue learning throughout their lives. This shift in focus highlights the importance of understanding not only what students learn, but also how they engage with learning processes over time. Consequently, the notion of lifelong learning dispositions has emerged as a key framework for examining individuals' readiness and capacity for continuous learning (Deveci, 2022).

The literature conceptualises dispositions toward lifelong learning through characteristics such as setting learning goals, applying knowledge in new contexts, self-direction and self-assessment, identifying relevant information and adapting learning strategies (Kirby et al., 2010). These dimensions reflect an individual's capacity to remain actively engaged in personal development and to transform educational experiences into resources for future progress, being closely linked to adaptability in changing learning contexts (Deveci, 2022). One relevant factor in the development of these dispositions is the learning approaches adopted by students. According to the model proposed by Biggs

et al. (2001), the deep approach involves an intention to understand academic content, make conceptual connections and use complex cognitive strategies. It is associated with intrinsic motivation and genuine engagement with the academic task, as well as with higher levels of self-regulation and metacognitive awareness, which are essential for lifelong learning (Matsumoto-Royo et al., 2022).

In contrast, the surface approach involves rote memorisation, focusing on minimum requirements and immediate results, and is primarily associated with extrinsic motivation and the avoidance of cognitive effort. Numerous studies have shown that the deep approach is associated with learning autonomy, critical thinking, self-regulation and adaptability, all of which are important for lifelong learning (Barros et al., 2013; Kirby et al., 2010, Holford, 2022). Conversely, the surface approach has been associated to lower levels of these characteristics and limited engagement in ongoing personal and professional development (Asikainen & Gijbels, 2017; Smarandache et al., 2021). This issue is particularly relevant for students in educational sciences, as future teachers must demonstrate initial professional competencies and a willingness to continuously improve, reflect critically, and adapt to changes in the educational system. Teachers who are committed to lifelong learning are better equipped to adopt innovative practices, respond to student diversity, and contribute to institutional development (Day & Gu, 2010; Shin, 2019).

Despite the relevance of the topic, empirical research conducted in Romania on the relationship between learning approaches and lifelong learning dispositions remains limited. Furthermore, there is a growing interest in adapting and validating international measurement instruments across different cultural contexts. In this regard, the present study had two main objectives: (1) to examine the psychometric properties of the scale developed by Kirby and colleagues (2010) on a Romanian sample, and (2) to investigate the predictive relationship between students' learning approaches and their dispositions toward lifelong learning.

These findings may contribute to a better understanding of the psychoeducational factors associated with lifelong learning and may inform university educational interventions aimed at promoting deep approaches to learning and competencies relevant necessary to long-term professional development.

Theoretical framework

Lifelong learning as a contemporary educational goal

The concept of lifelong learning occupies a central place in current educational policies as it is linked to the need for continuous adaptation to economic, social and technological changes. International organisations emphasise that the sustainable development of contemporary societies depends on individuals' ability to learn continuously, update their skills and respond flexibly to ever-changing professional contexts (OECD, 2024; UNESCO, 2022).

The European Commission (2001) defines lifelong learning as any learning activity undertaken throughout life with the aim of improving knowledge, skills, and qualifications. This perspective extends beyond formal education to include learning experiences gained in non-formal and informal settings, including professional activities, community involvement, and family life. Similarly, UNESCO (2022) emphasises the continuous and inclusive nature of the learning process from childhood to old age.

In the literature, lifelong learning is analysed as both participation in educational activities and a stable psychological orientation towards personal and professional development. Laal (2011) demonstrates that individuals who are constantly engaged in the learning process exhibit higher levels of adaptability, autonomy, and personal responsibility. From this perspective, emphasis is placed not only on access to education, but also on individuals' willingness to continue learning actively and independently.

For higher education institutions, this concept implies a paradigm shift. The contemporary university can no longer be viewed merely as a space for transmitting disciplinary knowledge; it must also become a context that fosters students' ability to learn independently and sustainably. Candy (1994) and Knapper and Cropley (2000) argue that one of the central missions of higher education is to prepare students for unpredictable professional contexts where the ability to continuously update skills is paramount.

Dispositions toward lifelong learning

To capture the psychological dimension of lifelong learning, Kirby and colleagues (2010) propose the concept of dispositions for lifelong learning. This refers to an individual's relatively stable tendency to voluntarily engage in learning activities and capitalise on development opportunities.

The authors identify five main dimensions of this construct: Goal setting reflects a person's ability to formulate personal learning goals, plan and maintain the direction of their own development. Goal-oriented students tend to demonstrate initiative and intrinsic motivation. The second dimension, applying knowledge and skills, involves transferring knowledge to practical contexts and actively using acquired information to solve real-world problems. This dimension is essential in a society based on transferable skills. Self-direction and self-assessment entail taking responsibility for one's own learning, monitoring progress and adapting learning strategies based on outcomes. These are closely linked to self-regulated learning. Information seeking reflects information literacy skills, namely the ability to identify relevant, credible and useful sources in a complex information environment. Adapting learning strategies demonstrates cognitive flexibility and the ability to modify study methods based on task requirements, difficulty or context.

Together, these dimensions outline the profile of someone capable of managing their own development effectively and responding to the demands of a constantly changing society.

Students' learning approaches

An important theoretical framework for explaining how students approach academic tasks is the theory of learning approaches. Building on the research of Marton and Säljö (1976), Biggs (1987) and Biggs et al. (2001) developed a model in which academic performance depends on both cognitive abilities and how the student approaches the learning process.

In its current form, the model distinguishes two major approaches:

The Deep Approach involves the intention to understand the content being studied, identify relationships between concepts and integrate new information into prior knowledge. Students use higher-order cognitive strategies such as analysis, comparison, critical reflection and synthesis. The dominant motivation is intrinsic, based on a genuine interest in learning. This approach has been shown to lead to better academic performance, long-term retention of information and the development of critical thinking skills (Asikainen & Gijbels, 2017, Matsumoto-Royo et al., 2022).

The surface approach is characterised by rote memorisation, a focus on reproducing information and a predominant concern with meeting the minimum requirements of an assessment. Students aim to avoid failure rather than genuinely understanding the content. Motivation is primarily extrinsic and cognitive engagement is low. This approach has been associated with limited use of learning strategies, lower levels of self-regulation and reduced capacity to adapt learning to new contexts (OECD, 2024). While this approach may produce acceptable short-term results, it limits the transfer of knowledge and the development of complex skills (Biggs et al., 2001, OECD, 2024).

Learning approaches and lifelong learning dispositions

The literature consistently links how students learn to their long-term readiness for learning. Those who adopt a deep approach to learning tend to exhibit characteristics consistent with the profile of a person oriented towards lifelong learning, such as higher levels of autonomy, self-regulation, strategic flexibility and the practical application of knowledge (Kirby et al., 2010; Barros et al., 2013).

Evans et al. (2003) demonstrated that the deep approach is associated with a desire for knowledge and strategic flexibility — two factors that are important for long-term engagement in learning. Similarly, Smarandache et al. (2021) emphasise the importance of interest in subject matter and the conscious effort required to develop sustainable academic practices. In contrast, the surface approach is frequently negatively correlated with dispositions towards lifelong learning. Students who are predominantly oriented towards memorisation and immediate results tend to exhibit lower levels of critical reflection, adaptability and responsibility for their own development (Barros et al., 2013).

Relevance educational sciences students

The relationship between learning approaches and dispositions for lifelong learning is particularly important for students preparing for a teaching career. Teachers are

constantly confronted with curricular, technological and social changes, requiring them to constantly update their professional knowledge and practices. Day and Gu (2010) demonstrate that teachers who engage in lifelong learning are better equipped to adopt innovative practices and respond to student diversity. Similarly, Holford et al. (2022) emphasise that higher education must foster dispositions oriented towards reflection, autonomy, and continuous development.

Overall, the literature suggests that learning approaches are closely related to students' capacity for lifelong learning. However, empirical evidence on this relationship, particularly in the context of Romanian higher education, remains limited (Barros et al., 2013; Kirby et al., 2010; Matsumoto-Royo et al., 2022).

Consequently, examining how students in education learn and develop dispositions toward lifelong learning can provide valuable insights for the design of university programmes and the preparation of future teachers. In this context, the present study seeks to explore the extent to which students' learning approaches (deep and surface) predict their dispositions toward lifelong learning among Romanian university students.

2. Methodology

Research design

This study employed a quantitative, cross-sectional, correlational and predictive research design to investigate the relationship between students' learning approaches and their dispositions toward lifelong learning. This design allowed the examination of statistical associations between variables and the estimation of the predictive value of deep and surface approaches for overall orientation towards lifelong learning. In this study, the two learning approaches (the deep approach and the surface approach) were the independent variables. The dependent variable was disposition toward lifelong learning, analysed both at the global level and across its component dimensions.

Research objectives and hypotheses

The study pursued two main objectives. The first was to examine the psychometric properties of the instrument for measuring dispositions toward lifelong learning developed by Kirby and colleagues (2010) in a Romanian student sample. The second objective was to investigate the relationship between learning approaches and dispositions toward lifelong learning, and to test their predictive value.

Based on the literature, the following hypotheses were formulated:

Hypothesis 1: The deep approach would be positively and significantly correlated with dispositions toward lifelong learning.

Hypothesis 2: The surface approach would be negatively and significantly correlated with dispositions toward lifelong learning.

Two research questions were also examined:

1) To what extent does the deep approach predict dispositions toward lifelong learning?

2) To what extent does the surface approach predict dispositions toward lifelong learning?

Participants

The sample consisted of 155 students enrolled in bachelor's and master's programmes at the Department of Educational Sciences at the West University of Timișoara. Most participants were undergraduates (90.3%), while 9.7% were master's students. In terms of gender distribution, the sample was predominantly female (99.3%), which reflects the gender distribution typically observed in educational sciences programmes. In terms of age, most participants fell within the 18–23 age range (88.4%), followed by those aged 24–30 (7.7%), and those aged 31–40 (2.5%). Participants came from the following study programmes: Primary and Preschool Education, Pedagogy, Special Education and the Master's programme in Educational Management and Curriculum Development. This diversity provides valuable insight into the relationships between variables within the field of educational sciences.

Table 1

Demographic characteristics of participants (N = 155)

Characteristic	Category	N	%
Gender	Female	154	99.3
	Male	1	0.6
Age	18–23	137	88.4
	24–30	12	7.7
	31–40	4	2.5
Level of study	Bachelor's	140	90.3
	Master's	15	9.6
Year of study	Bachelor's – Year I	130	83.8
	Bachelor's – Year II	1	0.6
	Bachelor's – Year III	9	5.8
	Master's – Year II	15	9.6
Programme	Primary and Preschool Education	83	53.5
	Pedagogy	31	20
	Special Education	26	16.7
	Educational Management and Curriculum Development	15	9.6

Note. N = number of participants

Instruments

Lifelong learning dispositions scale

To assess dispositions for lifelong learning, the scale developed by Kirby et al. (2010) was used. The instrument consists of 14 rated on a five-point Likert scale ranging from 1

("strongly disagree") to 5 ("strongly agree"). The scale assesses five dimensions: Goal setting; Application of knowledge and skills; Self-direction and self-assessment; Information seeking; Adaptation of learning strategies.

In the present study, the overall internal consistency of the instrument was moderate ($\alpha = .65$), remaining slightly below the conventional .70 threshold. Although this value may be considered acceptable in exploratory research and in the context of cultural adaptation, it also suggests the need for further investigation of the scale's psychometric properties on larger and more diverse Romanian samples.

Revised Two-Factor Study Process Questionnaire (R-SPQ-2F)

Learning approaches were measured using the Revised Two-Factor Study Process Questionnaire (R-SPQ-2F; Biggs et al., 2001), previously translated and adapted for Romanian students by Smarandache et al. (2021). The instrument includes 20 items rated on a five-point Likert scale ranging from 1 ("never") to 5 ("always") and assesses two dimensions: deep approach and surface approach.

In the present study, internal consistency was high for the deep approach ($\alpha = .82$) and satisfactory for the surface approach ($\alpha = .80$).

Data collection procedure

Data were collected through paper-based and online administration of the instruments to facilitate participation by students from different programmes and years of study. Participants were informed of the general purpose of the research and were told that participation was voluntary and confidential. Questionnaire completion required approximately 10 minutes. All responses were collected anonymously, and incomplete responses were excluded from the final dataset.

Data analysis

Statistical analyses were conducted using JASP. To test the first objective, confirmatory factor analysis (CFA) was used to examine the fit of the instrument's proposed factorial structure for measuring dispositions towards lifelong learning. Pearson correlations coefficients were computed to examine the relationships between variables after verifying the assumption of normality. To assess the predictive value of learning approaches, simple linear regressions were conducted using the deep and surface approaches as predictors and overall disposition toward lifelong learning as the criterion variable. The main assumptions of the regression models were tested: normality of the residuals, linearity of the relationships, homoscedasticity and independence of the errors. Preliminary diagnostics indicated that the assumptions underlying these analyses were adequately met.

3. Findings

Descriptive statistics

Analysis of the descriptive statistics revealed moderate to high levels of dispositions toward lifelong learning among the participants. Among the assessed dimensions, the highest means were recorded for applying knowledge and skills ($M = 4.10$, $SD = 0.70$), followed by goal setting ($M = 3.56$, $SD = 0.51$) and self-direction and self-assessment ($M = 3.50$, $SD = 0.77$). The lowest values were observed for adapting learning strategies ($M = 3.12$, $SD = 0.69$) and information seeking ($M = 3.03$, $SD = 1.12$).

Table 2

Means and standard deviation for lifelong learning variables

Variable	N	Mean	SD
Goal setting	155	3.56	.51
Application of knowledge and skills	155	4.10	.70
Self-direction and self-assessment	155	3.50	.77
Information seeking	155	3.03	1.12
Adaptation of learning strategies	155	3.12	.69

Note. N= number of participants; SD= standard deviation

These findings suggest that students perceive themselves as relatively competent in the practical application of knowledge and in focusing on personal learning goals but report more moderate levels of strategic flexibility and autonomous information-seeking.

Regarding learning approaches, the mean for the deep approach was higher than that for the surface approach. Participants reported a moderate level of the deep approach ($M = 3.47$, $SD = 0.67$) compared to a lower level of the surface approach ($M = 2.41$, $SD = 0.70$). This pattern suggests a general orientation toward understanding and genuine engagement rather than rote memorisation or minimal compliance with academic demands.

Table 3

Means and standard deviation for learning approach variables

Variable	N	Mean	SD
Deep approach	155	3.47	.67
Surface approach	155	2.41	.70

Note. N= number of participants; SD= standard deviation

Validation of the Lifelong Learning Dispositions Scale

To test the structural validity of the instrument developed by Kirby and colleagues (2010), a confirmatory factor analysis was conducted on the 14 items organised into the five proposed theoretical dimensions.

The initial model indicated an acceptable-to-moderate fit to the data: $\chi^2 (77) = 166.598$, $p < .001$, CFI = .853, TLI = .826, RMSEA = .087, SRMR = .093.

Following an examination of the modification indices, three correlated residuals were specified. The revised model showed an improvement in fit indices: $\chi^2 (74) = 142.527$, $p < .001$, CFI = .887, TLI = .861, RMSEA = .078, SRMR = .083.

These results suggest that the factor model demonstrated a marginally acceptable fit in the Romanian sample and provide preliminary support for the use of the scale in future research on dispositions toward lifelong learning.

Table 4

CFA: Lifelong Learning Dispositions Model

Model	Model χ^2	p	df	CFI	TLI	RMSEA	SRMR
Lifelong learning dispositions (14 items – original model)	166.598	< .001	77	.853	.826	.087	.093
Lifelong learning dispositions (3 correlated item pairs)	142.527	< .001	74	.887	.861	.078	.083

Relationship between the deep approach and dispositions toward lifelong learning

To test the first hypothesis, the Pearson correlation coefficient was computed to examine the relationship between the deep approach and the overall disposition toward lifelong learning. The results indicated a positive, moderate and statistically significant correlation ($r = .440$, $p < .001$). Therefore, Hypothesis 1 was supported.

The coefficient of determination ($r^2 = .194$) shows that approximately 19.4% of the variation in the disposition towards lifelong learning is associated with variation in the deep approach.

Table 5*Pearson correlations between the deep approach and lifelong learning dispositions*

	Lifelong learning	r^2
<i>Deep approach</i>	0.440*	.194

This suggests that students who demonstrate a genuine interest in the subject matter, employ comprehension strategies and seek meaning in the learning process are more likely to be oriented towards lifelong learning.

Relationship between the surface approach and disposition toward lifelong learning

To test the second hypothesis, the Pearson correlation coefficient was computed to examine the relationship between the surface approach and the overall disposition toward lifelong learning. The results revealed a negative, moderate and statistically significant correlation ($r = -.406$, $p < .001$). Thus, Hypothesis 2 was supported. The coefficient of determination ($r^2 = .165$) indicates that approximately 16.5% of the variation in the disposition towards lifelong learning is associated with variation in the surface approach.

Table 6*Pearson correlations between the surface approach and lifelong learning dispositions*

	Lifelong learning	r^2
<i>Surface approach</i>	-0.406*	.165

This suggests that students who are predominantly oriented towards rote memorisation, avoidance of cognitive effort and focus on minimal requirements tend to exhibit lower levels of orientation toward lifelong learning.

Predictive value of the deep approach

To answer the first research question, a simple linear regression was conducted with the deep approach as the predictor and the overall disposition towards lifelong learning as the criterion variable. The model was statistically significant ($F(1, 153) = 36.718$, $p < .001$), explaining 19.4% of the variance in the dependent variable ($R^2 = .194$).

The regression coefficient indicated that the deep approach was a significant positive predictor of the disposition toward lifelong learning ($B = 0.292$, $SE = 0.048$, $\beta = 0.440$, $t = 6.059$, $p < 0.001$).

Table 7*Linear regression analysis predicting lifelong learning dispositions from the deep approach*

Predictor	B	ES	β	t	P	R ²
(Constant)	2.527	0.170	—	14.823	<.001	.194
Deep approach	0.292	0.048	0.440	6.059	<.001	

The results indicate that higher levels of the deep approach were associated with higher levels of dispositions toward lifelong learning.

Predictive value of the surface approach

To answer the second research question, a simple linear regression model was estimated with the surface approach as the predictor. The model was statistically significant ($F(1, 153) = 30.128, p < .001$), explaining 16.5% of the variance in the disposition towards lifelong learning ($R^2 = .165$). The regression coefficient showed that the surface approach was a significant negative predictor of the disposition towards lifelong learning ($B = -0.258, SE = 0.047, \beta = -0.406, t = -5.489, p < 0.001$).

Table 8*Linear regression analysis predicting lifelong learning dispositions from the surface approach*

Predictor	B	ES	β	t	P	R ²
(Constant)	4.165	0.118	—	35.240	<.001	.165
Surface approach	-0.258	0.047	-0.406	-5.489	<.001	—

Therefore, higher levels of the surface approach were associated with lower levels of disposition toward lifelong learning.

Synthesis of results

Overall, the results support the formulated hypotheses and confirm the relevance of learning approaches in explaining students' orientation towards lifelong learning. The deep approach emerged as a favourable learning orientation, whereas the surface approach appears to hinder the development of the dispositions necessary for lifelong learning. These findings emphasise the importance of promoting university learning environments that encourage genuine engagement, reflection and the self-regulation of learning.

4. Discussion

Interpretation of the main results

This study aimed to investigate the relationship between students' learning approaches and their dispositions toward lifelong learning. It also sought to examine the psychometric proprieties of the scale developed by Kirby and colleagues (2010) for use in a Romanian student sample. The results provide empirical support for both objectives, confirming the importance of learning approaches in explaining students' orientation toward lifelong learning continuous development.

First, confirmatory factor analysis indicated a marginally acceptable fit for the theoretical model of the lifelong learning dispositions scale. In addition, the internal consistency of the scale remained slightly below the conventional recommended threshold. Although these findings provide preliminary support for the use of the instrument with the present sample, the results should be interpreted with caution, particularly in the context of cultural and linguistic adaptation. Therefore, further validation studies on larger and more diverse Romanian samples are necessary.

Secondly, the results confirmed the existence of a significant positive relationship between deep approach and dispositions toward lifelong learning. Students who demonstrate a genuine interest in the subject matter, strive to comprehend the information and utilise sophisticated cognitive strategies tend to be more inclined towards self-directed learning, adaptation and ongoing personal growth. This suggests that adopting a deep approach may support immediate academic performance and fosters a positive orientation toward lifelong learning.

In contrast, the surface approach was negatively associated with dispositions toward lifelong learning. Students who predominantly rely on rote memorisation, focus on minimum requirements and avoid cognitive effort tend to exhibit lower levels of autonomy, reflection and openness to further development. This finding supports the view that superficial study strategies may limit the quality of current learning and motivation for lifelong learning.

Regression analyses reinforced these conclusions, highlighting that the deep approach is a significant positive predictor of dispositions for lifelong learning, while the surface approach is a significant negative predictor. In other words, students' approaches to learning are closely associated with their willingness to continue learning after graduation.

The present findings are consistent with previous research highlighting the connection between deep learning approaches and characteristics associated with lifelong learning. Specifically, students who adopt a deep approach tend to demonstrate higher levels of self-direction, application of knowledge and adaptability, which are core components of lifelong learning (Kirby et al., 2010; Barros et al., 2013). These results suggest that an orientation toward understanding and meaningful engagement in learning supports students' readiness for continuous learning.

In contrast, the negative predictive role of the surface approach identified in this study aligns with prior research indicating that rote memorisation and a focus on minimum requirements are associated with lower levels of engagement, reduced critical thinking and limited development of higher-order learning skills (Asikainen & Gijbels, 2017; Smarandache et al., 2021)..

Overall, these findings provide empirical support for the relationship between learning approaches and lifelong learning dispositions, highlighting the role of deep approach as a positive predictor and surface approach as a negative predictor within the Romanian higher education context.

Relevance for the training of future teachers

An important aspect of the research is the specific nature of the investigated sample, which consisted of students enrolled in educational sciences programmes. For this group, dispositions towards lifelong learning hold professional significance. Teachers are continually required to update their subject knowledge, teaching methods, digital competencies and assessment practices.

Therefore, the results suggest that promoting a deep approach from the beginning of teacher education can be a strategic investment in the quality of future teaching careers. Students who learn reflectively, autonomously and meaningfully are more likely to become reflective and adaptable teachers who are receptive to innovation, self-evaluation and continuous professional development.

Contribution of the study

This study makes several relevant contributions. Firstly, it provides empirical data on the relationship between learning approaches and lifelong learning dispositions in the underexplored context of Romanian higher education. Secondly, it supports the use of a culturally adapted international scale for assessing orientation toward lifelong learning. Thirdly, it demonstrates that pedagogical factors relating to how students learn can be significant explanatory factors in developing essential long-term competencies.

General implications

The research findings suggest that universities may influence not only immediate academic performance, but also students' readiness for further learning. Educational environments that encourage reflection, autonomy, problem solving and the practical application of knowledge can produce graduates who are better prepared for future professional and social changes. In this sense, the deep approach may be viewed as both an effective study strategy and a formative mechanism for building a culture of lifelong learning.

Practical implications

The study's findings emphasise the importance of designing university settings that encourage a deep approach to learning and reduce students' reliance on surface approach

strategies. Given that the deep approach was positively associated with a disposition for lifelong learning and the surface approach negatively, higher education institutions can intervene by organising educational experiences.

One area of focus is the teaching strategies employed in the classroom. Activities centred on problem solving, case studies, interdisciplinary projects, reflective portfolios and authentic tasks can encourage students to understand, apply and integrate knowledge rather than limiting themselves to memorisation. Such practices are conducive to the development of autonomy and critical thinking.

A second area concerns academic assessment. Assessment systems that rely solely on reproduction may encourage surface approaches, whereas formative assessment, constructive feedback and tasks requiring analysis, argumentation and knowledge transfer can support deep approaches to learning. The way exams and assessment criteria are designed can directly influence the learning style adopted by students.

Furthermore, these findings are relevant to academic advising and students' personal development. Early identification of tendencies toward surface approach enables the implementation of supportive interventions focused on self-regulation, time management, academic motivation and effective study strategies. This is particularly significant in the context of teacher training programmes. Promoting deep approaches to learning among future teachers can encourage a professional attitude oriented toward continuous improvement, pedagogical reflection and adaptation to changes in the educational system.

Limitations of the study

The results must be interpreted considering certain methodological limitations. Firstly, the sample consisted only of students from the Department of Educational Sciences at one Romanian university, which limits the generalisability of the findings to other universities and academic fields. In addition, students enrolled in teacher education programmes may present particular characteristics related to learning, motivation and professional development, which may have influenced the results of the study.

Secondly, the sample was almost exclusively female, reflecting the gender distribution typically found in educational sciences programmes. Therefore, the findings cannot be assumed to reflect the experiences or learning characteristics of the broader university student population.

Thirdly, the data were collected using self-report instruments. This type of measurement may be influenced by socially desirable responding, perceptual errors or the tendency of participants to evaluate themselves favourably.

Fourthly, the cross-sectional design of the study does not allow for firm causal conclusions. Although the regressions demonstrate statistical predictive value, the direction of causality of the investigated relationships cannot be stated with certainty.

In addition, the sample size may be considered relatively modest for confirmatory factor analysis, particularly given the number of items included in the instrument.

Although the obtained results provide preliminary support for the proposed factorial structure, larger samples would allow for more stable estimations and a more robust evaluation of the scale's psychometric properties.

Finally, the moderate internal consistency of the lifelong learning dispositions scale and the marginal CFA fit indices suggest the need for further examination of the instrument's psychometric properties in the Romanian context. Future studies should test the scale on larger and more diverse samples to provide stronger evidence regarding its validity and reliability.

Future research directions

Future research can build upon the current findings in several ways. One direction is to replicate the study with larger and more diverse samples drawn from multiple universities and academic fields. Comparing students from the social sciences, natural sciences, medicine and engineering fields could provide valuable insights into the specific characteristics of the relationship under investigation within different disciplines.

A second direction involves conducting longitudinal studies to track the evolution of learning approaches and lifelong learning dispositions throughout the university years. This would enable us to observe the extent to which academic experiences influence these variables.

A third direction is to test more complex predictive models that include variables such as academic motivation, self-efficacy, engagement with the university, satisfaction with one's studies and academic performance. It would also be useful to develop and culturally validate the instruments used, examining how the items function across different participant groups.

5. Conclusion

The present study highlights the close relationship between students' approaches to learning and their orientation toward lifelong learning and continuous development. The deep approach emerged as a positive predictor of lifelong learning dispositions, whereas the surface approach emerged as a negative predictor. These findings support the view that universities play an important role not only transmitting knowledge, but also in preparing graduates who can continue to learn autonomously, reflectively and adaptively after completing their studies. In a rapidly changing society, fostering an academic culture oriented toward deep approaches to learning may contribute to sustainable professional and social development.

AI Statement

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References

Asikainen, H., & Gijbels, D. (2017). Do students develop towards more deep approaches to learning during studies? A Systematic review on the development of students' deep and surface approaches to

- learning in higher education. *Educational Psychology Review*, 29(2), 205–234. <https://doi.org/10.1007/s10648-017-9406-6>
- Barros, R., Monteiro, A., Nejmedinne, F., & Moreira, J. A. (2013). The Relationship between Students' Approach to Learning and Lifelong Learning. *Psychology*, 04(11), 792–797. <https://doi.org/10.4236/psych.2013.411113>
- Biggs, J. B. (1988). Assessing student approaches to learning. *Australian Psychologist*, 23(2), 197–206. <https://doi.org/10.1080/00050068808255604>
- Biggs, J., Kember, D., & Leung, D. Y. (2001). The revised two-factor Study Process Questionnaire: R-SPQ-2F. *British Journal of Educational Psychology*, 71(1), 133–149. <https://doi.org/10.1348/000709901158433>
- Candy, P. (1994). Developing lifelong learners through undergraduate education. *Canberra: Australian Government Publishing Service*, 1994 [47]. <https://www.voced.edu.au/content/ngv%3A22704>
- Day, C., & Gu, Q. (2010). The new lives of teachers. In *Routledge eBooks*. <https://doi.org/10.4324/9780203847909>
- Deveci, T. (2022). UAE-based first-year university students' perception of lifelong learning skills affected by COVID-19. *Tuning Journal for Higher Education*, 9(2), 279–306. <https://doi.org/10.18543/tjhe.2069>
- European Commission. (2001). Making a European area of life- long learning a reality—communication from the commission, COM(2001) 678 final. *Eric* <http://scholar.google.com/scholar?%20hl=en&btnG=Search&q=intitle:No+Title#0%5Cnhttp://eric.ed.%20gov/?id=ED476026>
- Evans, C. J., Kirby, J. R., & Fabrigar, L. R. (2003). Approaches to learning, need for cognition, and strategic flexibility among university students. *British Journal of Educational Psychology*, 73(4), 507–528. <https://doi.org/10.1348/000709903322591217>
- Holford, J., Hodge, S., Knight, E., Milana, M., Waller, R., & Webb, S. (2022). Lifelong education research over 40 years: insights from the International Journal of Lifelong Education. *International Journal of Lifelong Education*, 41(6), 537–548. <https://doi.org/10.1080/02601370.2022.2167445>
- James, D. (2020). Is lifelong learning still useful? Disappointments and prospects for rediscovery. *Journal of Education and Work*, 33(7–8), 522–532. <https://doi.org/10.1080/13639080.2020.1852509>
- Kirby, J. R., Knapper, C., Lamon, P., & Egnatoff, W. J. (2010). Development of a scale to measure lifelong learning. *International Journal of Lifelong Education*, 29(3), 291–302. <https://doi.org/10.1080/02601371003700584>
- Knapper, C. K., & Cropley, A. (2000). Lifelong learning in higher education. *London Kogan Page. - References - Scientific Research Publishing*. (n.d.). <https://www.scirp.org/reference/referencespapers?referenceid=1000820>
- Laal, M. (2011). Lifelong Learning: What does it Mean? *Procedia - Social and Behavioral Sciences*, 28, 470–474. <https://doi.org/10.1016/j.sbspro.2011.11.090>
- Marton, F., & Säljö, R. (1976). ON QUALITATIVE DIFFERENCES IN LEARNING—II OUTCOME AS a FUNCTION OF THE LEARNER'S CONCEPTION OF THE TASK. *British Journal of Educational Psychology*, 46(2), 115–127. <https://doi.org/10.1111/j.2044-8279.1976.tb02304.x>
- Matsumoto-Royo, K., Ramírez-Montoya, M. S., & Glasserman-Morales, L. D. (2022). Lifelong learning and metacognition in the assessment of pre-service teachers in Practice-Based Teacher Education. *Frontiers in Education*, 7. <https://doi.org/10.3389/educ.2022.879238>
- OECD. (2024). *The triangle of lifelong learning: Strategies, motivation, and self-belief* [PISA in Focus, No. 128]. OECD Publishing. <https://doi.org/10.1787/45ec682f-en>
- Richardson, J. T. E. (2005). Students' approaches to learning and teachers' approaches to teaching in higher education. *Educational Psychology*, 25(6), 673–680. <https://doi.org/10.1080/01443410500344720>

- Shin, Y., & Jun, J. (2019). The hierarchical effects of individual and organizational variables on elementary school teachers lifelong learning competence. *International Electronic Journal of Elementary Education*, 12(2), 205–212. <https://doi.org/10.26822/iejee.2019257668>
- Smarandache, I. G., Maricutoiu, L. P., Ilie, M. D., Iancu, D. E., & Mladenovici, V. (2021). Students' approach to learning: evidence regarding the importance of the interest-to-effort ratio. *Higher Education Research & Development*, 41(2), 546–561. <https://doi.org/10.1080/07294360.2020.1865283>
- UNESCO. (2022). Lifelong learning: Need to know. *UNESCO*. <https://www.unesco.org/en/lifelong-learning/need-know>