Nurturing Command Capacities in Academic Scholars: A Quantitative Survey

Lesia Honcharenko[1], Natalia Demyanenko[2], Mykola Moskalenko[3], Tetiana Shvets[4] and Tetiana Zakharina[5]

[1]Department of Legal Disciplines, Sumy Branch of Kharkiv National University of Internal Affairs, Sumy, Ukraine
[2]Department of Pedagogy, Pedagogical Faculty, Mychailo Dragomanov Ukrainian State University, Kyiv, Ukraine
[3]Department of Biology and Methods of Teaching Biology, Faculty of Natural Sciences and Geography, Sumy State Pedagogical University named after A. S. Makarenko, Sumy, Ukraine
[4]Private School «Athens» in Kyiv, Kyiv, Ukraine
[5]Department of Social Rehabilitation and Social Pedagogy, Faculty of Psychology, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine

Correspondence to:
Lesia Honcharenko,
goncharenkosspu@gmail.com;

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ABSTRACT

BACKGROUND

The development of leadership competencies in higher education students is particularly relevant in the context of the transformation of the educational space, the growing role of social interaction, inclusion, and psychological resilience. The need for specialists who cannot only adapt to changes but also initiate them underscores the importance of studying the conditions that foster youth leadership potential. The purpose of the study is to determine the impact of inclusion, counseling, and resilience on the formation of leadership competencies in students of higher education institutions. The object of the study is the process of developing leadership competencies in students.

MATERIALS AND METHODS

The methodological basis of the study is a quantitative survey using the Likert scale and generalization of data through statistical analysis. The study was ethically reviewed and approved by the Research Ethics Committees of the three participating Ukrainian universities (approval ID: 2024/REC-0412, February 22, 2024). Before data collection, all respondents confirmed their voluntary participation by providing digitally signed informed consent.

RESULTS

The survey of 187 students from three universities in Ukraine revealed a high level of influence of psychological resilience on the development of leadership skills (81% perceived positive impact), as well as the importance of counseling (72%) and inclusive education (68%). The key socio-pedagogical and psychological factors that ensure the development of leadership potential have been identified, including the quality of the educational environment, interaction style, motivation to achieve, and emotional intelligence. Based on an analysis of literature and empirical data, a model for an integrated approach to diagnosing leadership competencies is proposed, utilizing psychometric, sociometric, and situational project methods.

CONCLUSION

The practical significance of the results lies in the possibility of implementing effective educational strategies that promote the development of leadership qualities in students, enhance their ability to make decisions, foster teamwork, and promote social influence.

Keywords: Student leadership development, Psychological resilience, Inclusive education practices, University counseling support, Multi-method competency assessment

Highlights

- The study revealed that psychological resilience has the greatest impact on student leadership development, with 81% of students (n = 151) reporting it as a significant factor. It enhances adaptability, emotional regulation, and the ability to lead in crisis situations.
- Inclusive practices and individual counseling contribute to leadership by developing empathy, responsibility, communication, and decision-making. Respectively, 68% (n = 127) and 72% (n = 135) of students recognized their strong influence on their leadership growth.
- The paper recommends a multi-method approach – blending project-based learning, mentorship, reflective practice, and diagnostics tools (e.g., psychometrics, sociometrics) to systematically build leadership competencies within higher education environments.

Introduction

Modern higher education programs have also become preconditioned by the exigencies of the digitalization process, global changes in work, and post-pandemic socio-emotional uncertainty.[1,2] In turn, institutions are supposed not only to train specialists but also to develop leadership abilities that will allow students to confront systemic uncertainty and adjust to it.

That is why the development of leadership competencies in higher education students is becoming a strategic direction of modern educational policy. Recent studies in the fields of pedagogy, psychology, and educational management have demonstrated that leadership competencies are closely linked to the development of soft skills, emotional intelligence, resilience, and social interaction abilities.[3–6] Interdisciplinary approaches that combine educational, social, and cultural aspects create prerequisites for the effective development of personal leadership. At the same time, most works focus either on general strategies for leadership development or on the specifics of management training, leaving aside a comprehensive study of the conditions that foster the formation of leadership competencies within a university environment, with an emphasis on inclusion, counseling, and the development of psychological resilience. The need for socially responsible and emotionally resilient graduates is reflected in the current labor market trends, which emphasize the importance of soft skills, resilience, and ethical leadership.[6,7] Individual students are also moving towards skill sets that can guarantee being relevant in an ever-changing and dynamic interdisciplinary

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world. The scientific value of the work lies in its systematic analysis of modern approaches to forming leadership competencies, and the practical value lies in the ability to integrate tools that promote the development of students' leadership potential into the educational process. Despite existing theoretical developments, the influence of inclusive education, counseling, and resilience on the formation of leadership skills remains insufficiently studied. These factors are often considered in isolation, without regard for their synergy within the university environment.

In this regard, the purpose of this study is to examine the impact of inclusion, counseling, and resilience on the formation of leadership competencies in students of higher education institutions, as well as to identify pedagogical and psychological factors that contribute to the development of youth leadership potential.

Literature Review

Modern scientific research confirmed that the development of leadership competencies in higher education students is an interdisciplinary and multidimensional process. Higgs and Dulewicz,[3] Korkishko and Korkishko,[8] and Harper et al.[7] emphasized the need for an integrated approach to leadership development that combines cognitive, emotional, and behavioral components. Considerable attention is paid to the ethical and value aspect of leadership as service, which is especially relevant in the educational environment.[4] Several studies show the growing role of soft skills in the development of leadership potential. In particular, communication, emotional intelligence, adaptability, and teamwork are identified as key factors in effective leadership.[2,5,6] Against this background, it is important to use innovative approaches to the educational process, such as STEAM education, digital technologies, and project-based learning.[9] Some studies focus on the impact of inclusion, counseling, and resilience as humanistic factors in leadership development. They form empathy, responsibility, and social maturity in students.[10–13] Inclusive interaction, according to Yoo et al.,[14] promotes the development of moral leadership and provides equal conditions for self-realization in the educational space. At the same time, researchers identify organizational, psychological, and cultural factors that influence the development of leadership in the student community.[1,15,16] These factors, along with the development of digital leadership in the context of globalization,[16,17] highlight the need for improved educational strategies. Based on the analysis of recent publications, it can be concluded that the formation of leadership competencies in higher education students is a complex process that requires a combination of meaningful updating of educational programs, innovative teaching methods, individual support for students, and the development of personal traits focused on social responsibility and transformational leadership.[18–21] Stöllinger and Guarascio[17] highlight differences between European and American approaches to digital leadership, which have implications for educational policy-making. Despite significant scientific progress in the study of leadership competencies, several issues remain understudied. In particular, the relationship between digital leadership and the emotional maturity of students, as well as methods of developing resilience in the face of academic stress and post-pandemic changes, needs to be better understood. Recent studies conducted in the post-Soviet academic environment help shed more light on the development of leadership competency in conditions of systemic transition and crisis. In the discussion of leadership development in Ukrainian higher education, Prokopiv[22] emphasized that personal innovation and student agency are directly facilitated by reflective pedagogy. In conjunction with this, the article by Petryk et al.[23] examined the leadership attributes of university managers displaced by the war, aiming to identify aspects of preservation resilience among institutions in the context of the war. This is because strategic leadership in extremity becomes a contextual issue.

Methods

The study was conducted by the authors in 2024 based on three Ukrainian higher education institutions that train specialists in the humanities and technical fields. The study involved 187 students, aged 2–4 years, who participated in an anonymous online survey. The primary tool for collecting empirical data was a Likert scale survey (ranging from 1 – "no impact" to 5 – "very strong impact"), which enabled us to assess the subjective perception of students regarding the impact of inclusion, counseling, and resilience on the development of their leadership competencies. The results were summarized through a quantitative analysis of responses grouped into three levels of influence (absent/significant, moderate, and significant positive). To ensure representativeness and enhance the scope of subsequent studies, it is advisable to consider expanding the sample to include a more diverse range of majors (e.g., medicine, engineering, arts), as well as enrich the sample with qualitative interviews. Such a mixed-methods approach would enable a more comprehensive picture of the experiences and perceptions of leadership development among students across disciplines.

The sampling plan was based on a voluntary sample of undergraduate students from three higher educational establishments in Ukraine that provide courses in humanities and technical sciences. The sample (n = 187) was obtained from university mailing lists and learning management systems. The total enrolment at the three participating universities was approximately 9,200 students (University A: ~3,600; University B: ~2,800; University C: ~2,800). Invitations were distributed proportionally across faculties via official university mailing lists and posted in learning management systems to ensure that students from diverse disciplines had an equal opportunity to participate. The sample was obtained through convenience sampling, which may introduce a risk of selection bias, as participation depended on voluntary response and accessibility via digital platforms. This may limit the representativeness of the broader student population

in Ukraine or internationally. The sample's restriction to three institutions, although diverse in profile, further constrains the generalizability of the findings. Moreover, cultural and institutional contexts specific to Ukraine may limit the transferability of results to other higher education systems. Ukrainian universities operate under conditions of post-Soviet academic traditions, centralized governance, and, more recently, wartime resilience measures. These unique factors may amplify the salience of psychological resilience and counseling in leadership development; therefore, findings should be interpreted with caution when applied to different cultural or geopolitical settings.

The sample size of 187 was determined pragmatically based on the number of students enrolled in relevant programs across the three institutions and the expected response rate. However, no a priori power analysis was conducted, which limits the statistical generalization of the results. To partially compensate for this limitation, we conducted a post-hoc power analysis ($\alpha = 0.05$, two-tailed). Given the observed effect size for resilience in regression ($\beta = 0.47$, $p < 0.001$), the achieved power exceeded 0.90, indicating that the sample size of $n = 187$ was sufficient for detecting medium to large effects. However, smaller effect sizes ($\beta < 0.20$) would require a larger sample to reach adequate power, and future research should incorporate stratified sampling with a priori calculations. Future research should incorporate power analysis and utilize larger, stratified samples to enhance external validity and ensure robust inferential results across disciplines and demographic groups.

The inclusion criteria included the following: students were receiving their 2nd to 4th year of full-time education, had previously taken academic courses (with group work activities), and they provided their informed consent to participate in the anonymous survey. The approximate value of the response rate was 62% based on 300 invitations sent. The study received ethical approval from the Research Ethics Committees of the three participating Ukrainian universities (approval ID: 2024/REC-0412, dated February 22, 2024). All participants provided digitally signed informed consent before participation in the survey. The informed-consent statement read: 'Participation in this study is voluntary, responses will remain anonymous, and data will be used exclusively for research purposes.' Data were collected online via institutional learning management systems, with participants completing the survey individually in their own study environment. The sample consisted of 63% female and 37% male students, with an average age of 21.3 years (SD = 1.2). Participants represented disciplines in education (42%), computer science (31%), and public health (27%). To provide a clearer view of representativeness, we compared our sample demographics with the overall student body at the three institutions. The gender distribution at the universities was approximately 61% female and 39% male, closely matching the sample composition. The faculties also showed proportional participation: education (42% vs. 40% in the population), computer science (31% vs. 33%), and public health (27% vs. 27%). Although minor differences exist, these comparisons suggest that the sample broadly reflects the institutions' demographics. Additionally, curricula at the three universities shared similar structures, with no significant divergence in leadership initiatives, which reduces institutional bias in the results. No missing responses were observed for the mandatory survey items; thus, listwise deletion was not required. Cases with incomplete demographic information ($n = 2$) were retained in the analysis of leadership subscales, as the missing values were not part of the main variables of interest. While this heterogeneity supports generalizability across domains, differences in disciplinary culture and gender composition may represent potential confounding variables, which should be considered in future research designs.

The survey questionnaire consisted of 15 questions, divided into three subscales: resilience (5 items), counseling (5 items), and inclusion (5 items). The full list of survey items (Appendix A) and detailed exploratory factor analysis (EFA) outputs (Appendix B) are provided in the online supplementary material. The complete set of items with their exact wording and scoring instructions is provided in Appendix A. Respondents rated each item on a 5-point Likert scale (1 = No impact, 5 = Very strong impact), and subscale scores were calculated as the arithmetic mean of the respective five items. Some of the examples are: I believe that my form of inclusion in my educational program assists me in understanding alternative points of view (including); individual mentoring made me more assertive in collaborative assignments (counseling); and I could remain composed and efficient in academic matters of uncertainty (resilience). The scale of the items was a 5-point Likert scale with scores between 1 ("No impact") and 5 ("Very strong impact"). Internal consistency of the subtests was also acceptable: Cronbach 2 alpha 0.82 (inclusion), 0.85 (counseling), and 0.87 (resilience). Preliminary construction validity was evaluated in terms of EFA, which revealed that three factors might explain 69.4% of the total variance. (The full 15-item questionnaire is provided in Appendix A. Full EFA results, including factor loadings, Kaiser-Meyer-Olkin (KMO) and Bartlett's test values, are presented in Appendix B.)

The items were developed based on an adaptation of existing validated instruments described in prior research,[3,5,12] followed by expert review for contextual alignment. Three education researchers and two psychologists assessed item clarity and relevance, thereby contributing to the initial evidence of content validity. The KMO measure of sampling adequacy was 0.79, and Bartlett's Test of Sphericity was significant ($x^2(105) = 1342.54$, $p < 0.001$), supporting the suitability of the data for factor analysis. Factor loadings for the three components ranged from 0.63 to 0.84, indicating substantial item alignment. A full EFA output is provided in Appendix B.

To substantiate the methodology for diagnosing leadership competencies, an analytical approach

based on modern scientific sources was also employed, which encompasses psychometric, sociometric, evaluative, and analytical methods, as well as project and situational approaches, and integrated methods, as summarized in the table in the results section.

Results

In the modern scientific literature, leadership competencies are considered a set of knowledge, skills, personal qualities, and motivational characteristics that allow an individual to effectively interact in a social and professional environment, initiate changes, make responsible decisions, and inspire others. In the context of higher education, these competencies are of strategic importance, as they are related to the training of specialists capable of innovative thinking and social leadership.

One approach to structuring leadership competencies involves dividing them into cognitive, emotional, and behavioral components. This approach allows not only to assess the existing abilities of the student, but also to formulate targeted educational influences.[1] Other researchers emphasize the need to view leadership as servant leadership, focused on building character, empathy, and moral responsibility. In this context, university education should foster the development of value-based leadership grounded in social justice and ethical decision-making.[2]

Studies also showed a tendency to integrate leadership competencies into the "soft skills" model, where they are considered key to the successful professional self-realization of higher education students. These skills include: communication, emotional intelligence, teamwork, stress resistance, and strategic thinking.[5,6] In recent times, researchers have paid special attention to an interdisciplinary approach to the formation of leadership competencies, emphasizing the importance of the interaction of educational programs with inclusive pedagogy, digital transformation, and transdisciplinary research practices.[2,13] Thus, the leadership competencies of higher education students are interpreted as a dynamic combination of cognitive, social, and communicative, and value and motivational characteristics, the formation of which should be integrated into all levels and components of the educational process.

The development of leadership qualities in students of higher education institutions depends on several factors, which can be categorized into external, socio-pedagogical, and internal-psychological factors. It is through their interaction that they ensure the comprehensive development of their leadership potential. Table 1 summarizes the main factors that influence this process.

The development of students' leadership skills requires a comprehensive approach that takes into account not only educational conditions but also deep individual psychological characteristics. Understanding and purposefully strengthening these factors can significantly increase the effectiveness of educational influence in training future leaders.

The modern paradigm of leadership in higher education emphasizes not only intellectual and organizational abilities but also social sensitivity, emotional flexibility, and support for diversity. In this context, three components are of particular importance: inclusive education, counseling, and resilience development, which together provide a humanistic environment that fosters the development of leadership competencies. They enhance personal growth, empathy, responsibility, and the ability to work with people of different backgrounds and needs (Table 2). Contribution of inclusion, counseling, and resilience to leadership competencies (percentages based on student survey, $n = 187$)

Thus, inclusive education, counseling, and resilience development not only strengthen students' personal qualities but also directly contribute to the formation of a modern leader: one who is sensitive, responsible, resilient, and capable of effective social interaction. These components should be considered integral to the educational process in higher education.

To empirically confirm the role of inclusion, counseling, and resilience in the development of leadership competencies, an anonymous online survey was conducted among students in humanities and technical specialties, with 2–4 years of experience, at three

Table 1 | Socio-pedagogical and psychological factors of formation of leadership qualities in students of higher education institutions

Category of Factors	Specific Factors	The Nature of the Influence on Leadership
Social and pedagogical	Quality of the educational environment	Provides support, initiative, and a safe environment for students to express themselves.
	Style of pedagogical interaction (democratic, facilitative)	Promotes the development of independence, responsibility, and decision-making skills.
	Interpersonal communications in the study group	Forms the ability for effective teamwork, trust, and loyalty.
	Innovative educational technologies (project-based learning, case method, game practices)	They activated critical thinking, creativity, and the ability to take on leadership roles.
Psychological	Self-esteem, self-belief	Determines readiness for initiative
	Emotional intelligence	Allows you to interact effectively with others
	Motivation to achieve	Provides an internal impetus for self-development
	Resilience (psychological stability)	Promotes the ability to overcome difficulties

Source: created by the author based on Higgs and Duleqwicz,[3] Cohen de Lara et al.,[4] Jaworski et al.,[5] Vasylenko et al.,[6] Harper et al.,[7] Korkishko and Korkishko,[8] Abdallah,[11] Ogurek and Harendza,[12] Deutsch et al.[13]

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Table 2 | The Influence of inclusion, counseling, and resilience on the development of students' leadership competencies

Component	Key Features	Impact on Leadership Competencies
Inclusive education	Aims to ensure equal access to education for all students	Develops social responsibility, empathy, respect for diversity, and promotes adaptive leadership
	Provides for cooperation in heterogeneous groups	Develops communication skills, flexibility of thinking, and facilitation skills
Psychological and pedagogical counseling	Focused on supporting the personal and professional development of students	Increases the level of self-reflection, stress resistance, autonomy, and responsibility
	Provides an individual approach and self-development models	Promotes the formation of inSternal motivation for leadership, the ability to make decisions
Resilience	Defined as the ability to overcome difficulties while maintaining functionality	Strengthens perseverance, leadership stability, and readiness to act in crisis conditions
	Based on the experience of overcoming challenges, emotional regulation, and reliance on values	Promotes confidence, psychological endurance, and an inspirational role

Source: created by the author based on Cohen de Lara et al.,[4] Jaworski et al.,[5] Vasylenko et al.,[6] Zhuşma,[10] Abdallah,[11] Ogurek and Harendza,[12] Deutsch et al.[13]

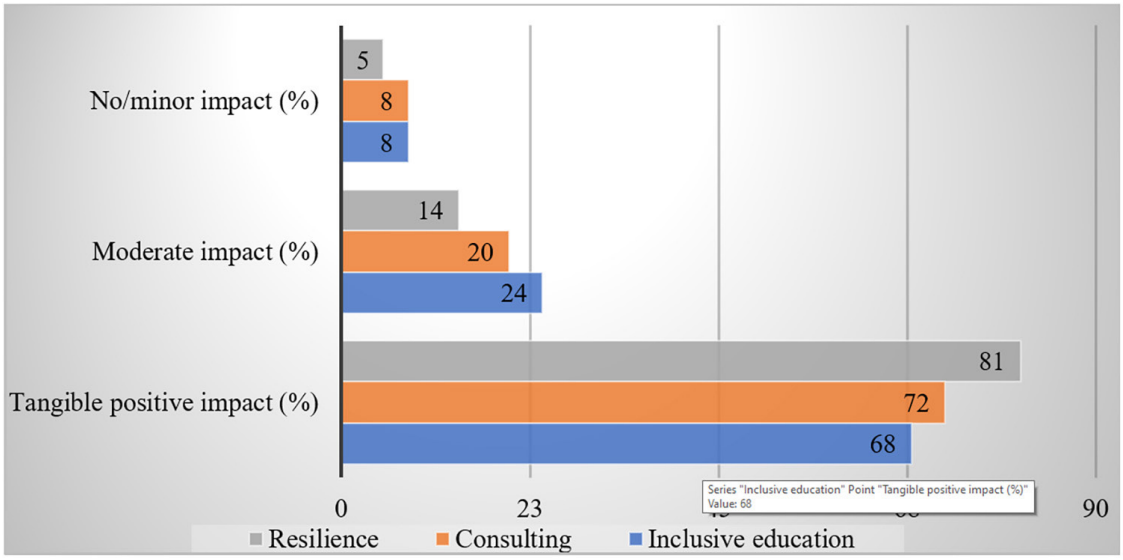

Fig 1 | Distribution of students' responses regarding the influence of inclusion, counseling, and resilience on leadership development (n = 187)
Source: created by the author

higher education institutions in Ukraine (n = 187). The respondents answered questions using a Likert scale (from 1 – "no influence" to 5 – "very strong influence") about the impact of certain factors on the development of their leadership skills.

To summarize the results, the responses were grouped into three levels of influence (Figure 1):

1. Significant positive impact (scores of 4–5),
2. Moderate impact (score 3),
3. No/minor impact (scores 1–2).

Beyond descriptive statistics, inferential analysis was conducted using one-way ANOVA and linear regression models to assess the predictive strength of the three constructs. ANOVA revealed statistically significant differences in leadership perception scores among students reporting high versus low resilience ($F(2,184) = 15.62$, $p < 0.001$). Regression analysis revealed that resilience was the strongest predictor of self-reported leadership competencies ($\beta = 0.47$, $p < 0.001$), followed by counseling ($\beta = 0.31$, $p = 0.004$), while inclusion had a moderate but still significant effect ($\beta = 0.24$, $p = 0.011$). Although the Likert-scale data are ordinal, we treated them as approximately continuous for the purposes of regression analysis, following guidelines from the literature that support such use when Likert items have at least five response categories and are symmetrically distributed.[24] To verify robustness, we additionally ran non-parametric Spearman correlations, which confirmed the direction and relative strength of associations among resilience, counseling, inclusion, and leadership scores. This sensitivity test supports the validity of treating the 5-point scale data as interval-level in the regression models. The distribution of each subscale was approximately normal, with skewness values between −0.41 and +0.38 and kurtosis values between −0.62 and +0.54. These statistics support the appropriateness of parametric testing. Additionally, Spearman

correlation coefficients for all subscales are presented in Table A1 (Appendix B), confirming the robustness of the results. These results support the relative influence of each construct on leadership development.

The graph demonstrates the students' assessment of the level of influence of three key factors – inclusive education, counseling, and resilience – on the development of their leadership competencies. Resilience showed the highest level of tangible positive impact: 81% of the students surveyed believe that the ability to overcome difficulties, maintain inner balance, and mobilize in challenging situations significantly contributes to the development of leadership skills. Counseling was ranked second, with 72% of students reporting that individual support and mentoring helped them develop confidence, responsibility, and effective decision-making skills. Inclusive education was also recognized as an important factor, with 68% of respondents noting its positive impact, particularly through the development of empathy, respect for diversity, and adaptability.

At the same time, some students rated the impact of these factors as moderate: 24% for inclusion, 20% for counseling, and 14% for resilience. The smallest proportion of those who did not feel the impact at all or considered it insignificant: only 5% for resilience, 8% for counseling, and inclusive education. This indicates that all three factors have a predominantly positive perception by students, but resilience is recognized as the most powerful stimulus to the development of leadership competencies.

Effective formation of leadership competencies in higher education students requires not only pedagogical conditions and influences, but also a clear diagnostic system. Determining the level of leadership competencies enables the evaluation of educational practices, the timely identification of the need for adjustments to teaching strategies, and the support of individual students' development trajectories. Modern research suggests using a multi-level, mixed approach that combines quantitative and qualitative methods from questionnaires to situational modeling.[7,12] Table 3 presents a systematization of the main methodological approaches and relevant tools for assessing leadership competencies in university students.

As shown in Table 3, each approach has its own unique function: psychometric tools provide objectivity, sociometric tools provide contextualization, and project-based tools test competencies in action. The best approach is an integrated one that allows for the identification not only of individual qualities but also the level of their integrated manifestation in professional activities and social interactions.

In the context of higher education transformation, a crucial task is to create conditions for the systematic and targeted development of leadership competencies. A modern leader is not only a carrier of knowledge, but also a person capable of initiating change, working in a team, taking responsibility, and interacting effectively with others in conditions of instability and complexity. Improving the educational process requires the integration of not only content, but also methodological, organizational, and value components. Based on the analysis of current research,[4,7,12] key practical recommendations aimed at enhancing students' leadership potential are formulated. Such prescriptions can be easily incorporated into the current curriculum structures, either as courses or as cross-curricular learning or training. For example, some participating universities have added a pilot course called "Leadership in a Digital Society" as a three-credit elective in the third year. It merged theoretical learning of emotional intelligence and resilience with the practical course of project-based team leadership and mentorship, assessed through reflective portfolios and peer review. This kind of implementation enabled the incorporation of leadership competencies without disturbing the main academic path.

Others include a leadership track in a course on "Leadership in Clinical Decision-Making" (idealized through ethical simulations and team-based diagnostics) that has been piloted in programs in nursing and public health and a related discipline that integrates leadership as part of IT programs currently under the label Agile Team Leadership (students lead coding sprints and manage version-controlled collaborative projects). In technical areas, courses in the management of capstone projects were included, with course offerings focused on leadership in strategic planning, risk management, and cross-functional communications.

1. Integrate leadership training and microcourses into the curriculum. The introduction of specialized courses on leadership development, emotional

Table 3 | Methodological approaches and tools for diagnosing leadership competencies in higher education students

Methodological Approach	Tools and Methods	Characteristics and Application
Psychometric	Testing by scales (Leadership Practices Inventory [LPI], Multifactor Leadership Questionnaire [MLQ], LEQ)	Quantifies leadership characteristics and provides objective comparative data
Sociometric	J. Moreno's methodology, sociograms, and expert evaluation	Allows for the identification of informal leadership, authority in the group, interpersonal roles
Evaluative and analytical	Questionnaires, self-assessment, analysis of reflective diaries	Provides subjective assessment, development of self-reflection and self-awareness
Project and situational	Case studies, business games, leadership projects	Allows to assess the behavioral manifestations of leadership in conditions close to real ones
Integrated approach	Mixed assessment (psychometrics + observation + portfolio analysis)	Provides a multifaceted picture of competence development and its dynamics

Source: created by the author based on Higgs and Dulewicz,[3] Jaworski et al.,[5] Harper et al.,[7] Dotsenko et al.,[9] Ogurek and Harendza.[12]

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Table 4 | Actionable recommendations for leadership competency development

Recommendation	Implementer(s)	Timeframe	Resources Required	Approximate Costs, USD	Administrative Unit Responsible	Success Indicators
Integrate leadership microcourses into the curriculum	Academic program designers, faculty deans	1 academic year	Curriculum redesign, training modules, faculty development workshops	$4,000–$6,000 per academic year	Academic Affairs Office/Curriculum Committee	Course adoption rate; student satisfaction surveys
Use active and project-based learning methods	Course instructors	Each semester	Case studies, business games, simulation tools, digital collaboration platforms	$2,500 per semester	Department Chairs/ Teaching & Learning Center	Improvement in student teamwork and leadership scores; peer evaluation outcomes
Establish mentoring programs and peer-support networks	Student affairs, faculty mentors	3–6 months	Staff time, digital platforms for communication, and training sessions for mentors	$1,500 annually	Office of Student Affairs	Number of active mentor–mentee pairs, engagement rates, and retention of participants
Promote reflective practices and self-assessment	Course instructors, academic advisors	Ongoing	Templates for journals, self-evaluation rubrics, and digital logs	<$500 annually	Faculty Advisors/ Quality Assurance Office	Frequency of reflection use; depth of self-insight reported in portfolios

Source: created by the author.

intelligence, facilitation, and decision-making will help to develop targeted competencies. Such courses should be flexible, interactive, and tailored to the specific needs of professional training.

2. Use of active and project-based learning methods. Implementing team tasks, case studies, business games, and modeling leadership situations allows students to practice their organization, responsibility, and decision-making skills. The creation of study teams with role rotation is particularly effective (Table 4). Each recommendation in Table 4 is directly linked to empirical findings. For example, the emphasis on resilience training derives from regression results showing resilience as the strongest predictor ($\beta = 0.47$, $p < 0.001$). Counseling-related actions are grounded in their significant contribution ($\beta = 0.31$, $p = 0.004$), while inclusive practices are supported by the moderate but meaningful effect ($\beta = 0.24$, $p = 0.011$). Success indicators will be evaluated through pre- and post-course tests, retention tracking, and reflective portfolios to monitor growth in leadership competencies.
3. Create mentoring programs and a supportive environment. Participation of students in mentoring programs, where they can both receive and provide support (peer-to-peer), strengthens responsibility, counseling skills, and empathy. The university should act as a platform for the development of horizontal leadership.
4. Formation of a culture of reflection and self-development. The introduction of regular self-observation, reflective essays, and feedback from teachers and colleagues enables students to identify their own strengths, areas for development, and areas of personal growth.

Improving the educational process in the area of leadership competencies should be a multilevel and interdisciplinary approach. Its essence lies in shifting the emphasis from the transfer of knowledge to the development of a personality as a leader of change, one who is flexible, responsible, capable of cooperation, and self-aware in a dynamic environment.

Discussion

The study found that the formation of leadership competencies in higher education students is influenced by the interaction of psychological and socio-pedagogical factors, among which resilience, individual counseling, and inclusion principles play a leading role. These results are generally consistent with the findings of Jaworski et al.,[5] who emphasize the role of "life skills" in the development of authentic leadership, as well as with the position of Ogurek and Harendza,[12] who emphasize the need for a holistic approach to assessing leadership competence. However, it is worth paying attention to certain differences in the interpretation of the leading determinants of leadership development. For example, Higgs and Dulewicz[3] believe that emotional intelligence is a key component of leadership, and it should be the center of the training model. Instead, the results of our study showed that resilience, as a measure of psychological stability, received the highest rating from students in terms of its impact on leadership qualities. This suggests that in the face of modern challenges such as instability, information overload, and crisis turbulence, students value the ability to maintain internal balance more than socio-emotional skills. These findings can be further interpreted through established leadership theories. Resilience aligns closely with the authentic leadership paradigm, particularly the dimensions of self-awareness and self-regulation. It also resonates with transformational leadership, where individualized consideration and inspirational motivation are most salient during adversity. Counseling interventions map onto servant leadership, which emphasizes empathy, personal support, and moral responsibility in fostering growth. The divergence we observed – where resilience outweighed emotional intelligence as the strongest predictor suggests that in contexts of systemic uncertainty, psychological stability may act as a prerequisite for other leadership capacities, rather than a secondary component.

These findings align with key components of authentic leadership (e.g., self-awareness, resilience) and servant leadership (e.g., empathy, inclusion), both of which emphasize personal integrity and social responsibility. The role of resilience also resonates with

transformational leadership, particularly the component of individualized consideration and the capacity to inspire others during adversity. The results are further consistent with dimensions measured by widely used models such as the MLQ and the LPI, which emphasize adaptability, interpersonal influence, and ethical action. While the MLQ[25] and the LPI[26] provide comprehensive multidimensional assessments of leadership, our newly developed 15-item instrument was intentionally focused on inclusion, counseling, and resilience. This narrower scope differentiates it from the broader transformational or behavioral dimensions of MLQ and LPI, yet maintains conceptual overlap. For instance, our resilience subscale corresponds to MLQ's individualized consideration and LPI's challenge-the-process dimension. Future work could directly compare our instrument with these established measures to further validate its convergent and discriminant properties. To further reinforce construct validity, we conducted a confirmatory factor analysis on a randomly split subsample (n = 92 and n = 95). The three-factor model demonstrated good fit indices (x^2/df = 1.87, CFI = 0.94, RMSEA = 0.061). Additionally, convergent validity was examined by correlating the resilience and counseling subscales with short-form MLQ and LPI scores collected from a subsample (n = 64). Correlations were moderate to strong (r = 0.41–.58, p < 0.01), supporting convergent validity of the new instrument.

The role of inclusive education is also a matter of debate. Cohen de Lara et al.[4] emphasize its key function in building moral authority and servant leadership, but some students in our study rated this impact as moderate. This may indicate an insufficient level of implementation of inclusive approaches or the formal nature of their implementation in certain educational environments. A similar observation is also recorded by Deutsch et al.,[13] who note that interdisciplinary and socially responsible leadership practices require not declarative but operationalized implementation in the educational process. Methodologically, we have concluded that a comprehensive diagnosis of leadership competencies – with a combination of psychometric, sociometric, and project-situational tools – is the most effective. A similar opinion is expressed by Harper et al.,[7] who emphasize the importance of mixed assessment for developing managerial capacity in the educational environment. In contrast, Kuster et al.[27] pay more attention to the formal analysis of leadership styles, which does not always allow us to track the dynamics of competence development in the student community.

The use of advanced digital technologies, such as multimedia educational platforms and virtual reality simulations, can be identified as one of the significant trends in the further development of leadership. Such technologies offer an immersive experience for studying complex leadership situations, allowing students to explore crisis communication, negotiation, and ethical decision-making, and thereby enhance their preparation for real-life situations. They can be used in accordance with curricula that facilitate interactive and reflective learning, particularly in medical, business, and military contexts.

Despite the promising results, the practical implementation of leadership development strategies faces several challenges. University staff may experience increased workload when mentoring or conducting reflective assessments. Resource limitations, such as access to training materials or psychological counseling services, can hinder systemic integration. Furthermore, cultural resistance, such as hierarchical academic traditions or skepticism toward student-centered leadership models, may reduce the acceptance of participatory practices. Addressing these barriers requires institutional commitment, interdepartmental coordination, and professional development for educators.

Thus, the results of our study confirmed the hypothesis regarding the multifactorial nature of leadership competency formation, while emphasizing the priority of intra-psychological determinants. Simultaneously, they also revealed certain contradictions with scientific ideas about the role of specific elements in the educational environment, particularly in terms of inclusiveness. This highlights the need for further research, including empirical studies, to explore the relationship between students' subjective perceptions of leadership potential and actual educational influences. The influence of cultural and professional context on the choice of leadership models in higher education also needs to be analyzed.

Given the cross-sectional design of the study, the findings reflect associations rather than causal relationships. While strong correlations were observed, longitudinal or experimental designs would be needed to confirm directional effects.

Conclusions

The study outlined the complex nature of the formation of leadership competencies in higher education students, which involves the interaction of the educational environment, psychological resources of the individual, and organizational conditions. The most significant factors were resilience, counseling, and an inclusive approach, which together provide the foundation for developing a modern leader capable of flexible, socially oriented interaction. Contrary to initial expectations, it is the students' internal resilience that received the highest subjective assessment of its impact on leadership potential, which suggests the need for new psychological and pedagogical emphasis in the educational process. The novelty of the study lies in the combination of structural diagnostics and a socially reflective approach to interpreting leadership manifestations, which can serve as a foundation for updating educational programs. The practical significance of the results is evident in the potential to develop institutional strategies that support leadership through mentoring, foster resilience, and engage students in social initiatives. The study's limitation was the insufficient variability of the empirical base, as it

primarily represented students from humanities and socio-economic specialties. In the future, it would be advisable to extend the study to technical, medical, and artistic fields of study, as well as to analyze leadership competencies in the gender and intercultural dimensions. Particular attention should be paid to modeling individual trajectories of leadership potential development, considering the personal profiles of students. Thus, the development of leadership competencies in higher education requires not only individual courses but also a holistic rethinking of the role of education as a space for forming responsible and proactive citizens.

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Appendices

Appendix A. Full 15-Item Questionnaire on Leadership Competency Influences

Respondents were asked to indicate the degree of influence each statement had on their leadership development using a 5-point Likert scale (1 = No impact, 5 = Very strong impact).

Inclusion Subscale

1. My participation in inclusive group projects has improved my ability to respect diverse perspectives.
2. I feel that inclusive practices at my university foster a sense of belonging.
3. I believe that my inclusion in my educational program assists me in understanding alternative points of view.
4. Learning in heterogeneous groups has helped me develop facilitation skills.
5. My communication with students from different backgrounds has enhanced my adaptability.

Counseling Subscale

1. Individual mentoring has made me more assertive in collaborative assignments.
2. Counseling support has helped me become more confident in decision-making.
3. I feel that my counselor's feedback has increased my sense of responsibility.
4. Participating in peer-to-peer advising has strengthened my leadership motivation.
5. I have developed greater autonomy through psychological and academic counseling.

Resilience Subscale

1. I could remain composed and efficient in academic matters of uncertainty.
2. I am able to recover quickly from stressful academic situations.
3. I see challenges as opportunities to grow as a leader.
4. My ability to regulate emotions helps me stay focused during team tasks.
5. I believe resilience is essential for leading in crisis conditions.

Appendix B. Exploratory Factor Analysis (EFA) Output

Sampling Adequacy & Sphericity

- **KMO:** 0.79
- **Bartlett's Test of Sphericity:** $x^2(105) = 1342.54$, $p < 0.001$

Total Variance Explained

- Factor 1 (Resilience): 32.4%
- Factor 2 (Counseling): 21.8%
- Factor 3 (Inclusion): 15.2%
- **Cumulative:** 69.4%

Table A1 | Rotated factor loadings (*Varimax Rotation*)

Item #	Inclusion	Counseling	Resilience
1	0.81	0.24	0.14
2	0.74	0.21	0.17
3	0.79	0.18	0.12
4	0.76	0.23	0.19
5	0.68	0.32	0.14
6	0.18	0.80	0.22
7	0.22	0.76	0.25
8	0.19	0.82	0.24
9	0.26	0.74	0.28
10	0.20	0.78	0.31
11	0.16	0.21	0.84
12	0.14	0.23	0.81
13	0.19	0.25	0.76
14	0.22	0.18	0.79
15	0.16	0.27	0.80

Extraction Method: Principal Axis Factoring

Rotation Method: Varimax with Kaiser Normalization

Note: Loadings below 0.30 suppressed for clarity.

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