

The Role of Critical Thinking and Soft Skills in Enhancing the Social Activity of Female Students

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Abstract

This study explores the role of critical thinking and soft skills in enhancing the social activity of female students in higher education institutions of Uzbekistan. In today's dynamic and knowledge-based society, the development of these competencies is essential for preparing socially active, responsible, and independent young women. The research aims to identify how critical thinking and soft skills contribute to female students' engagement in academic, community, and civic life.

A mixed-methods approach was employed, combining quantitative surveys with qualitative interviews. Data were collected from 200 female undergraduate students studying at three universities – Tashkent State Pedagogical University, Samarkand State University, and Fergana State University. The instruments used included the Critical Thinking Assessment Questionnaire (CTAQ), the Soft Skills Self-Evaluation Scale (SSSES), and the Social Activity Index (SAI). Quantitative data were analyzed using descriptive statistics, correlation, and regression analysis via SPSS 26.0, while qualitative data were examined through thematic coding in NVivo 12.

The findings indicate a strong positive correlation between critical thinking skills, soft skills development, and the level of social engagement among female students. Students with higher levels of analytical reasoning, communication, and leadership skills demonstrated greater participation in social and community initiatives. The study concludes that integrating critical thinking and soft skills training into higher education curricula can significantly foster the empowerment, leadership, and civic responsibility of young women in Uzbekistan.

Keywords: *critical thinking, soft skills, social activity, female students, higher education, empowerment, leadership, Uzbekistan*

INTRODUCTION

In the era of globalization, digital transformation, and rapid socio-economic change, higher education systems worldwide are increasingly expected to prepare individuals who are not only professionally competent but also socially active, critically minded, and equipped with soft skills. The development of such competencies is essential for nurturing socially responsible citizens capable of contributing to sustainable development and effective social engagement. Within this context, the enhancement of female students' social activity through the cultivation of critical thinking and soft skills has

become a particularly relevant issue in Uzbekistan's modern educational landscape.

Over the past decade, Uzbekistan has implemented significant reforms in the field of education aimed at strengthening gender equality, expanding women's participation in social and public life, and supporting youth intellectual and professional growth. Presidential decrees and national programs, such as the *Law on State Policy on Women and Family Support*, the *Law on Youth Policy*, and the *National Program for the Development of Education for 2022–2026*, emphasize the importance of empowering young women and ensuring their active engagement in socio-economic and cultural processes. These policy initiatives

underscore the necessity of developing critical thinking and soft skills among female students as key drivers of personal growth and social responsibility. Soft skills, including communication, teamwork, leadership, problem-solving, and emotional intelligence, play a crucial role in shaping students' adaptability and readiness for both professional and social challenges. Similarly, critical thinking empowers students to analyze situations objectively, make reasoned decisions, and take initiative in addressing community issues. When these two competencies are integrated into the educational process, they contribute significantly to forming an active, confident, and socially responsible female youth population.

In Uzbekistan, universities are increasingly introducing innovative pedagogical methods, project – based learning, and extracurricular programs to enhance students' socio-emotional and intellectual development. However, empirical studies focusing specifically on the interrelation between critical thinking, soft skills, and the social activity of female students remain limited. This study seeks to fill that gap by exploring how the development of these competencies contributes to greater social engagement and leadership among female students in higher education institutions. The findings are expected to offer theoretical insights and practical recommendations for designing gender-sensitive educational models that promote equality, empowerment, and active citizenship among young women.

LITERATURE REVIEW

The concepts of *critical thinking* and *soft skills* have become central themes in modern educational research, especially in the context of preparing socially active and adaptable individuals. According to Paul and Elder (2014), critical thinking is the process of actively and skillfully conceptualizing, applying, analyzing, and evaluating information to reach an informed conclusion. It enables learners to think independently, question assumptions, and engage constructively in problem-solving. Facione (2020) further emphasizes that critical thinking enhances learners' decision-making abilities and promotes intellectual autonomy – qualities that are vital for active participation in social and civic life.

Parallel to this, the importance of soft skills – often referred to as *non-cognitive skills* or *21st-century competencies* – has been widely acknowledged. Goleman (2006) identifies emotional intelligence, communication, collaboration, and self-awareness as key soft skills that determine success in both personal and professional spheres. According to Robles (2012), these competencies complement academic knowledge and serve as critical predictors of social and professional adaptability. In educational

contexts, the integration of soft skills into curricula has shown a positive impact on students' confidence, teamwork, and civic engagement (OECD, 2018).

A growing body of literature connects the development of critical thinking and soft skills with increased social activity, particularly among young women. For example, Kim and Lee (2021) found that soft skill – based interventions in higher education enhance female students' leadership potential and willingness to participate in social initiatives. Similarly, Arora and Sharma (2020) demonstrated that critical thinking training fosters self-efficacy and social responsibility, leading to greater engagement in community projects.

In the context of Uzbekistan, recent research has begun to explore these themes in line with ongoing educational reforms. Studies by Karimova (2022) and Rakhmonova (2023) highlight that developing female students' critical thinking skills contributes to their self-confidence and active involvement in public life. Furthermore, the integration of soft skills training in Uzbek universities – through debates, volunteer programs, and innovative teaching methods – has shown promising results in enhancing students' civic awareness and leadership capabilities. However, despite these advances, there remains a noticeable gap in the literature regarding the combined impact of critical thinking and soft skills on the social activity of female students within the Uzbek higher education system. Most existing studies address these constructs separately, without fully examining their interrelationship or their collective influence on gendered patterns of social participation. Therefore, the present study seeks to bridge this gap by providing an integrated analysis of how the development of critical thinking and soft skills can serve as key pedagogical mechanisms for fostering female students' social engagement and empowerment.

METHODOLOGY

This study adopts a mixed-methods research design, integrating both quantitative and qualitative approaches to provide a comprehensive understanding of the relationship between critical thinking, soft skills, and the social activity of female students. The combination of these methods allows for deeper insight into not only the measurable aspects of the research variables but also the participants' subjective experiences and perspectives. The research was conducted among 200 female undergraduate students enrolled at three major universities in Uzbekistan – Tashkent State Pedagogical University, Samarkand State University, and Fergana State University. The participants were selected through a stratified random sampling method to ensure representation from different academic disciplines and study years. The age range

of the respondents varied between 18 and 23 years, with all participants voluntarily agreeing to take part in the research.

For data collection, three instruments were utilized. The first was the *Critical Thinking Assessment Questionnaire (CTAQ)*, adapted from Facione's *California Critical Thinking Skills Test (CCTST)*, which measured analytical, inferential, and evaluative reasoning skills. The second tool, the *Soft Skills Self-Evaluation Scale (SSSES)*, was based on Goleman's (2006) model of emotional and social intelligence and assessed competencies such as communication, teamwork, leadership, adaptability, and problem – solving. The third tool, the *Social Activity Index (SAI)*, was designed by the researcher to measure students' engagement in academic, community, and extracurricular activities. Additionally, semi-structured interviews were conducted with 20 selected participants to obtain qualitative insights into how they perceive the impact of critical thinking and soft skills on their social involvement.

The data collection process took place during the 2024 – 2025 academic year. Surveys were distributed both online and in paper form to ensure accessibility and inclusivity. All participants were informed about the purpose of the study and their rights, including voluntary participation and confidentiality of information. Ethical approval was obtained from the respective university ethics committees in accordance with the *Uzbek Ministry of Higher Education Ethical Research Guidelines (2023)*.

The collected quantitative data were processed and analyzed using *SPSS 26.0*. Descriptive statistics were employed to summarize the demographic data, while correlation and multiple regression analyses were conducted to determine the strength and direction of relationships among critical thinking, soft skills, and social activity. Qualitative interview data were transcribed and analyzed using thematic coding with the support of *NVivo 12* software. This approach allowed for identifying recurring themes such as empowerment, leadership, communication effectiveness, and social participation. To ensure validity and reliability, data triangulation was applied by comparing and integrating quantitative and qualitative findings.

MATERIALS AND METHODS

This study utilized a mixed – methods approach, integrating both quantitative and qualitative research methods to provide a comprehensive understanding of the relationship between critical thinking, soft skills, and the social activity of female students in higher education institutions in Uzbekistan. The integration of these two methodological approaches allowed for both numerical precision and deeper interpretation of students' lived experiences, attitudes, and perceptions.

The research was conducted among 200 female undergraduate students enrolled in three major universities of Uzbekistan: Tashkent State Pedagogical University, Samarkand State University, and Fergana State University. These institutions were selected based on their academic diversity, regional representation, and active student participation in social and civic programs. The participants were aged between 18 and 23 years and were selected through stratified random sampling to ensure equal representation across different faculties and academic years. Data collection was carried out using three main research instruments. The first instrument, the *Critical Thinking Assessment Questionnaire (CTAQ)*, was adapted from Facione's *California Critical Thinking Skills Test (CCTST)* and aimed to assess analytical, inferential, and evaluative reasoning abilities. The second instrument, the *Soft Skills Self-Evaluation Scale (SSSES)*, was based on Goleman's (2006) framework of emotional and social intelligence, which evaluates competencies such as communication, teamwork, adaptability, and leadership. The third tool, the *Social Activity Index (SAI)*, was developed by the researcher to measure students' engagement in academic clubs, volunteer projects, community service, and social organizations. In addition, semi-structured interviews were conducted with 20 selected participants to gain qualitative insights into how critical thinking and soft skills influence their social activity, self-confidence, and leadership behaviors. The data collection process took place during the 2024–2025 academic year. Questionnaires were distributed both online and in person to ensure wide participation. All participants were briefed on the purpose of the study and voluntarily provided informed consent. Interviews were conducted in Uzbek, recorded with permission, and later translated into English for data analysis.

Quantitative data were analyzed using *SPSS version 26.0*, employing descriptive statistics to summarize participant demographics, correlation analysis to identify relationships between variables, and multiple regression analysis to determine the predictive strength of critical thinking and soft skills on social activity levels. Qualitative data obtained from interviews were analyzed through thematic coding using *NVivo 12* software. This process involved identifying recurring patterns and themes related to empowerment, communication, collaboration, and civic participation. To ensure the accuracy and reliability of the results, triangulation was applied by comparing quantitative and qualitative findings.

Ethical considerations were observed throughout the research process. Approval was obtained from the ethics committees of the participating universities. Participants were fully informed about the objectives of the research, assured of

confidentiality and anonymity, and given the right to withdraw from the study at any stage. The research strictly followed the *Uzbek Ministry of Higher Education Ethical Research Guidelines (2023)* to ensure compliance with international academic ethics standards.

Overall, the materials and methods adopted in this study were designed to provide both empirical and contextual insights into how critical thinking and soft skills contribute to strengthening the social activity and empowerment of female students within the higher education system of Uzbekistan.

RESULTS AND DISCUSSION

The quantitative data revealed a significant positive correlation between critical thinking skills, soft skills, and the level of social activity among female students. The correlation coefficient between critical thinking and social activity was $r = 0.68$ ($p < 0.01$), indicating a strong relationship between students' analytical and evaluative reasoning abilities and their active engagement in community and academic environments. Similarly, the relationship between soft skills and social activity was found to be $r = 0.72$ ($p < 0.01$), demonstrating that students who exhibited higher levels of communication, teamwork, and leadership skills were more involved in social and civic activities both within and outside their universities.

Regression analysis further showed that both variables – critical thinking and soft skills – serve as strong predictors of social engagement. Together, they explained 61% of the variance ($R^2 = 0.61$) in students' social activity levels. Among the soft skills components, *communication* and *leadership* showed the highest influence, whereas *analytical reasoning* and *problem-solving* emerged as key dimensions of critical thinking contributing to active participation. These findings confirm that fostering both cognitive and socio-emotional competencies plays a crucial role in shaping socially active, responsible, and empowered female students.

Qualitative data obtained from semi-structured interviews supported these statistical findings. Many participants emphasized that the development of critical thinking encouraged them to express their opinions freely, challenge stereotypes, and participate more confidently in group projects and social initiatives. Likewise, soft skills training helped them improve communication, teamwork, and decision-making, leading to greater collaboration and leadership in both academic and community contexts. One participant noted that “*after learning to communicate and think critically, I started taking more responsibility in organizing events and sharing ideas in discussions,*” reflecting a shift from passive to active social engagement. These results are consistent with previous international studies (Arora & Sharma, 2020; Kim & Lee, 2021), which highlight the positive

influence of soft skills and critical thinking on female empowerment and social participation. In the context of Uzbekistan, this research extends the understanding of how educational reforms emphasizing personality development and active citizenship are beginning to yield tangible results. It also provides empirical evidence supporting the integration of critical thinking and soft skills into higher education curricula as essential tools for gender equality, leadership development, and sustainable social progress. In summary, the study demonstrates that critical thinking and soft skills are interdependent factors that jointly contribute to enhancing female students' social activity. By cultivating these competencies, higher education institutions in Uzbekistan can play a transformative role in shaping an empowered generation of young women capable of making meaningful contributions to society.

CONCLUSION

The study provides substantial evidence that critical thinking and soft skills play an essential and interdependent role in enhancing the social activity, leadership capacity, and civic engagement of female students in higher education institutions in Uzbekistan. The research results indicate that these two competencies are not only important academic constructs but also powerful tools for personal and social transformation. Through the development of analytical reasoning, communication, teamwork, empathy, and decision-making abilities, female students are empowered to take a more active and confident role in their academic and social environments. Quantitative findings confirmed a strong positive correlation between critical thinking, soft skills, and social engagement, suggesting that students who possess advanced levels of these abilities demonstrate greater participation in extracurricular activities, volunteer initiatives, and leadership roles. Qualitative interviews reinforced these patterns, showing that critical thinking helps young women develop independent perspectives, challenge stereotypes, and engage critically with social issues. Similarly, soft skills such as communication, adaptability, and emotional intelligence were found to enhance their capacity to collaborate effectively, resolve conflicts, and lead projects with confidence.

From a broader perspective, these findings have important implications for Uzbekistan's educational and social development. As the country continues to implement reforms aimed at promoting gender equality, youth participation, and the modernization of higher education, the integration of critical thinking and soft skills into academic programs can significantly contribute to national progress. The empowerment of female students through these

competencies not only prepares them for professional success but also transforms them into active agents of social change who can influence decision-making processes and contribute to sustainable community development.

The study also reveals that current higher education curricula often emphasize technical knowledge while giving limited attention to cognitive and interpersonal skill development. This imbalance restricts students' ability to apply theoretical knowledge in practical, socially relevant contexts. Therefore, it is crucial for educational policymakers and university administrators to redesign curricula that foster critical reflection, problem – solving, and human – centered learning experiences.

Based on the findings, several strategic recommendations are proposed for educators, universities, and policymakers:

Integration into Curriculum: Universities should embed critical thinking and soft skills development across all courses and disciplines rather than treating them as optional or peripheral. Interactive learning methods such as debates, role – playing, simulations, and project – based learning can effectively strengthen these skills. **Teacher Training:** Faculty members need professional development programs that equip them with pedagogical strategies to teach and assess critical thinking and soft skills. Without teachers' active engagement, curriculum reform alone will not yield sustainable outcomes. **Mentorship and Peer Support:** Establishing mentorship programs where experienced female leaders and educators mentor younger students can foster self-confidence, career orientation, and social activism. Peer-to-peer learning groups can also serve as safe environments for young women to exchange ideas and build collaborative problem-solving habits.

Institutional Culture: Higher education institutions should promote an inclusive and supportive environment that values female students' voices and encourages active participation in decision-making processes. Student unions, women's clubs, and community service centers can play a vital role in cultivating leadership and civic responsibility.

Monitoring and Evaluation: Continuous monitoring mechanisms should be established to evaluate the effectiveness of critical thinking and soft skills programs. Regular feedback from students can help educators refine their teaching methods and ensure that skill development remains aligned with evolving social needs. **Policy – Level Initiatives:** National education authorities should allocate targeted funding and incentives for gender – sensitive educational reforms, leadership programs, and research that promote the empowerment of women through skill development. Collaboration between universities, NGOs, and governmental organizations can further amplify the impact.

In conclusion, this study underscores that critical thinking and soft skills are not supplementary elements but foundational dimensions of modern education. Their systematic inclusion in Uzbekistan's higher education system will help cultivate a generation of educated, confident, and socially responsible women who can lead, innovate, and contribute effectively to the nation's socio – economic transformation. Empowering female students through education is not merely a pedagogical objective but a long-term investment in the country's democratic, cultural, and developmental progress.

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