Revista Românească pentru Educație Multidimensională
ISSN: 2066-7329 | e-ISSN: 2067-9270
Abstracting & Indexing | Clarivate Analytics - Web of Science (WoS); EBSCO; Google Scholar; ICI Journals Master List - Index Copernicus; Ideas RePeC; Econpapers; Socionet; CEEOL; Philpapers; KVK; WorldCat; CrossRef; J-GATE

2025, Volume 17, Issue 3, pages: 786-797 | https://doi.org/10.18662/rrem/17.3/1043
Submitted: May 1, 2025| *Accepted for publication:* August 1, 2025

The Relationship between Social Intelligence and Empathy in Students of Ukrainian Universities During Martial Law

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Abstract: *The study presents the relationships between components of social intelligence and empathy in 240 students at Ukrainian universities during martial law. Statistically significant relationships were identified between the first, third, and fourth components of social intelligence and empathy in university students. The inverse and strong relationship between respondents' ability to understand the life situations of others and empathy suggests that excessive sensitivity to the emotional needs of others may hinder this ability. However, students correctly interpret others' emotions based on facial expressions and can attune to their emotions. The inverse and fairly strong relationship between students' ability to understand manifestations of verbal behavioral expression and empathy indicates that this ability is not dependent on their sensitivity to the emotional needs of others or their ability to understand even hidden emotions. The direct and fairly strong relationship between students' ability to predict others' behavior and empathy demonstrates that this ability depends on their accuracy in understanding even hidden emotions and communicative cues related to the emotional needs of others, recognizing emotions through facial expressions, and sensitivity to others' emotional needs. During martial law, components of social intelligence (the ability to understand the life situations of others, the ability to interpret verbal behavioral expression, and the ability to predict others' behavior) are statistically significantly related to empathy in students at Ukrainian universities.*

Keywords: *social intelligence; abilities; empathy; university student.*

How to cite: Starynska, O. & Melnyk, Z (2025). The relationship between social intelligence and empathy in students of Ukrainian universities during martial law. *Revista Românească pentru Educație Multidimensională, 17*(3), 786-797. https://doi.org/10.18662/rrem/17.3/1043

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Research background

The continuous integration processes in the modern world, which persist even under stressful conditions caused by emergencies (such as pandemics, natural disasters, and military conflicts), highlight the relevance of studying social intelligence, which significantly contributes to successful communication and effective socio-psychological adaptation, both within one's own country and in interactions with representatives of other nations. Social intelligence is a complex set of abilities, including understanding various life situations, interpreting nonverbal and verbal behavioral expressions, and predicting the actions of others, which ensure the effectiveness of interpersonal interactions (Guilford, 1967; Goleman, 2006; Boyatzis et al., 2015). The social intelligence of the individual is important for his interactions with other participants in professional organizations. Therefore, it is important to develop social intelligence of personality in the conditions of vocational training (Esmaili et al., 2024). The advantages of social intelligence in stressful conditions caused by emergencies have been empirically studied among university students. Research findings related to the COVID-19 pandemic and wartime in Ukraine have identified links between students' social intelligence and their psychological well-being (Azañedo et al., 2020), mental health (Starynska et al., 2021; Starynska & Spivak, 2024), socio-psychological adaptation (Starynska et al., 2023b), empathy, and self-esteem (Monis et al., 2024).

At the same time, the development of social intelligence among university students in the context of academic mobility has been recognized as one of the key objectives in the Law of Ukraine "On Higher Education" (Ministry of Education and Science of Ukraine, 2020). Therefore, scientific empirical research on the factors influencing the development of social intelligence is of significant importance, as it directly contributes to addressing national educational priorities.

An analysis of recent scientific studies has shown that psychologists have obtained empirical data regarding factors affecting the development of social intelligence in university students under stressful conditions. It has been found that gender and place of residence do not influence the social intelligence of students in Pakistan universities, whereas age does (Ali et al., 2019). The impact of locus control and achievement motivation on the social intelligence of Ukrainian university students has been confirmed (Starynska, 2023a). Statistically significant relationships have been established between components of social and emotional intelligence and empathy (Fedakova & Jelenova, 2004). However, the relationship between social intelligence and

empathy has been empirically studied primarily among students of Indian secondary schools, considering factors such as gender, school type, and region of residence (Magar & Magre, 2023).

A theoretical analysis of existing research indicates that psychological studies have not yet explored the relationship between social intelligence and empathy among Ukrainian university students during martial law.

Research Aim: To empirically study the relationship between social intelligence and empathy in university students. **Research Objectives:** 1. To empirically study and determine quantitative data on the levels of social intelligence in university students. 2. To empirically study and establish quantitative data on the levels of empathy in university students. 3. To determine the relationship between social intelligence and empathy in university students.

Methodology

To achieve the research aim and objectives, the Social Intelligence Test (O'Sullivan & Guilford, 1978) was applied. This test consists of four subtests designed to assess respondents' abilities in the following areas: understanding others' interaction situations (Subtest 1), interpreting their nonverbal (Subtest 2) and verbal (Subtest 3) behavioral expressions, and predicting people's behavior and actions (Subtest 4). The total social intelligence score is calculated as the sum of all subtest scores.

Respondents were instructed to carefully read the example description and the instructions for each subtest before beginning. Tasks were to be completed only after fully understanding the instructions.

• Subtest 1: "Stories with Completion" consists of 14 sets of illustrated story sequences. Each set includes an initial image on the left depicting a specific situation, with possible resolutions shown in images on the right.

• Subtest 2: "Expression Groups" contains 15 sets of illustrated sequences. Each set features images on the left showing the same emotional state, while one image on the right matches that state.

• Subtest 3: "Verbal Expression" includes 12 sets of phrases. Each set presents a fragment of dialogue between two people on the left, with one description on the right depicting a completely different communicative intent.

• Subtest 4: "Stories with Supplementation" comprises 14 sets of illustrated story sequences. Each set includes three images with one missing in the top row, and four images in the bottom row, one of which correctly completes the sequence. Results were processed using the test scoring key.

We hypothesized that university students' social intelligence is related to an individual's empathy, as empathy manifests in the ability to listen to others, demonstrate sensitivity to their emotional needs, and understand their emotions (Batson, 2014; Cuff et al., 2016; Frankovský & Birknerová, 2014; Ferguson, 2016; Levett-Jones & Lathlean, 2008).

Empirical research on university students' empathy was conducted using the Mehrabian and Epstein Empathic Tendency Questionnaire (Pashukova et al., 2000). This questionnaire consists of 33 statements to which respondents indicate their agreement or disagreement. An empathy index was calculated based on the scoring key.

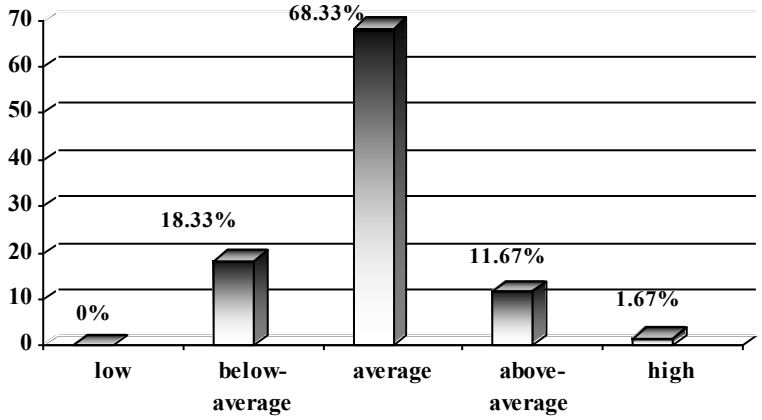
The obtained results were statistically processed using Pearson's correlation coefficient. If $p \leq 0.01$, the significance level is marked with *; if $p \leq 0.05$, it is marked with **.

Data analysis and results

A total of 240 students from Ukrainian universities: Kyiv, Kamianets-Podilskyi, and Zaporizhzhia participated in the study during 2022-2024. Their ages ranged from 17 to 22 years old. All respondents were informed about the Ethical Code of Psychologists of Ukraine and gave their consent to participate in the study. All the respondents agreed to participate in our study and gave full answers.

The results regarding university students' ability to understand social interactions with other people are presented in Figure 1.

Figure 1. Levels of university students' ability to understand social interactions between other people

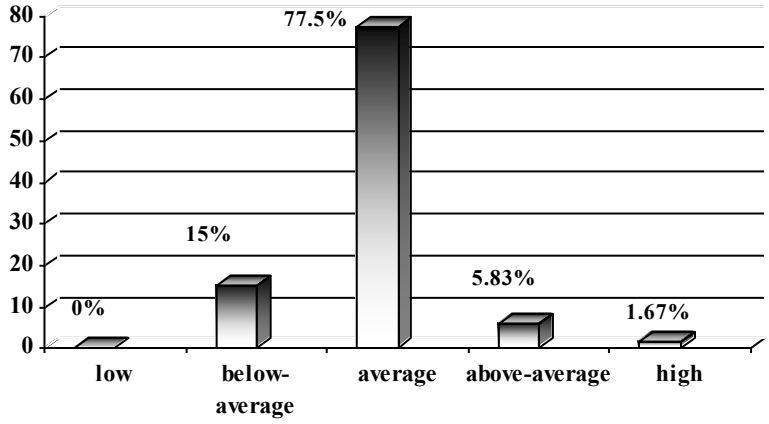


Source: authors' own conception

As seen in Figure 1, the majority of university students (68.33%) demonstrated an average level of ability to understand social interactions. They could correctly interpret about half of the given social interaction situations. A smaller percentage of respondents (18.33%) had a low-average level, correctly understanding about one-quarter of social interaction situations. A slightly smaller group (11.67%) showed an above-average level, accurately interpreting about three-quarters of social interactions. Only 1.67% of students exhibited a high level of ability to understand social interactions, meaning they could correctly interpret almost all social interaction scenarios. No students demonstrated a low level of this ability.

The quantitative results regarding students' ability to understand nonverbal behavioral expressions of other people are shown in Figure 2.

Figure 2. Levels of university students' ability to understand nonverbal behavioral expressions of other people

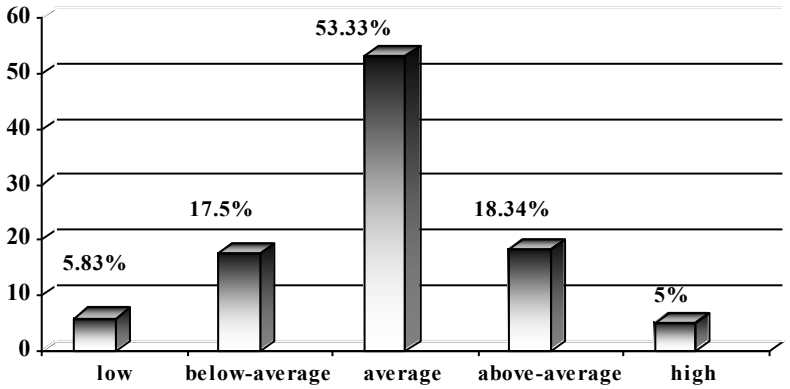


Source: authors' own conception

As illustrated in Figure 2, the majority of university students (77.5%) had an average level of ability to understand nonverbal behavioral expressions. These students could correctly interpret about half of such expressions. A smaller percentage (15%) exhibited a low-average level, correctly understanding about one-quarter of nonverbal expressions. A slightly smaller group (5.83%) had an above-average level, accurately interpreting about three-quarters of nonverbal behavioral expressions. Only 1.67% of students demonstrated a high level, meaning they could correctly interpret almost all nonverbal expressions. No students showed a low level of nonverbal behavioral expressions understanding.

The quantitative results regarding students' ability to understand verbal behavioral expressions of other people are presented in Figure 3.

Figure 3. Levels of university students' ability to understand verbal behavioral expressions of other people



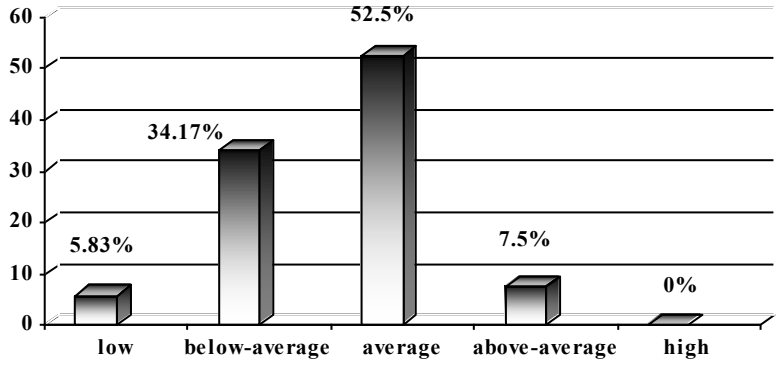
Source: authors' own conception

As seen in Figure 3, the majority of university students (53.33%) had an average level of ability to understand verbal behavioral expressions of other people. They could correctly interpret about half of such expressions. A significantly smaller number of respondents (18.34%) showed an above-average level of ability to understand verbal behavioral expressions in other people, meaning they could accurately understand almost three-quarters of verbal behavioral expressions in other people. A smaller proportion of respondents (17.5%) were found to have a low-average level of ability to understand manifestations of verbal behavioral expression in others. They are characterized by the ability to correctly interpret only about one-quarter of such manifestations. The smallest proportion of respondents (5%) showed a high level of ability to understand manifestations of verbal behavioral expression in other people. They are distinguished by their ability to correctly interpret almost all such manifestations.

The smallest proportion of respondents (6.25%) demonstrated a low level of ability to correctly understand manifestations of verbal behavioral expression in others. They can accurately interpret only a few verbal behavioral expressions. No respondents were found to have a high level of ability to understand verbal behavioral expression in other people.

The obtained quantitative results regarding university students' ability to predict other people's behavior are presented in Figure 4.

Figure 4. Levels of university students' ability to predict other people's behavior



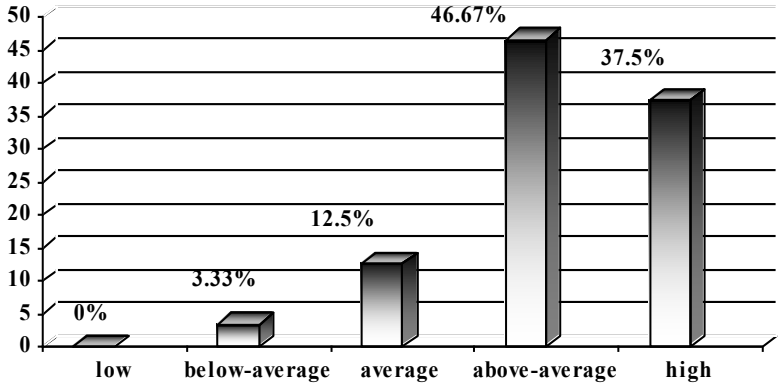
Source: authors' own conception

As shown in Figure 4, the majority of university students (52.5%) demonstrated an average level of ability to predict other people's behavior. They are capable of accurately predicting behavior of other people in about half of social interaction situations. A smaller proportion of respondents (34.17%) showed a low-average ability to predict behavior of other people. They can correctly predict behavior in approximately one-quarter of social interactions.

A significantly smaller proportion of respondents (7.5%) demonstrated an above-average level of ability to predict others' behavior. They can accurately predict behavior in nearly three-quarters of social interactions. Meanwhile, the smallest proportion of respondents (5.83%) were found to have a low-average level of ability to predict others' behavior. They can accurately predict behavior in only about one-quarter of social interactions. No respondents were found to have a high level of ability to predict behavior.

The obtained quantitative results regarding university students' levels of empathy are presented in Figure 5.

Figure 5. Levels of university students' empathy



Source: authors' own conception

As shown in Figure 5, the largest proportion of university students (46.67%) demonstrate an above-average level of empathy. They believe they can exhibit empathy in nearly three-quarters of social interaction situations. A slightly smaller percentage of respondents (37.5%) report a high level of empathy, stating that they can display empathy in almost all social interactions. A significantly smaller proportion (12.5%) of respondents have an average level of empathy. They consider themselves capable of demonstrating empathy in about half of social interactions. The smallest proportion of respondents (3.33%) exhibit a low-average level of empathy, believing they can express empathy in approximately one-quarter of social interactions. No respondents were found to have a low level of empathy.

The manifestations of empathy among university students, based on their levels (high – in almost all social interactions, above average – in about three-quarters of interactions, average – in about half of interactions, low average – in about one-quarter of interactions), include:

• The ability to listen to complex issues that concern other people; sensitivity to the emotional needs of others; a good understanding of even hidden emotions in other people.

• The ability to accurately recognize emotions in other people based on their facial expressions.

• The ability to correctly interpret communicative signals that indicate others' needs.

• The ability to accurately attune to the emotions of other people.

Statistically significant correlations between social intelligence components and empathy were identified among university students (Table 1).

Table 1. Correlation analysis between social intelligence components and empathy

	A1	A2	A3	A4	B
A1	–	–	–	–	–
A2	–	–	–	–	–
A3	–	–	–	–	–
A4	–	–	–	–	–
B	-0,21*	-0,06	-0,14**	0,15**	–

Note:
• A1 – First component of social intelligence (ability to understand life situations of other people).
• A2 – Second component of social intelligence (ability to understand manifestations of nonverbal behavioral expression).
• A3 – Third component of social intelligence (ability to understand manifestations of verbal behavioral expression).
• A4 – Fourth component of social intelligence (ability to predict people's behavior and actions).
• B – Empathy.

Pearson's correlation coefficient r is marked * for $p \leq 0.01$ and ** for $p \leq 0.05$.

As seen in Table 1, there is an inverse and strong correlation between university students' ability to understand other people's life situations and their level of empathy ($r = -0.21^*$; $p \leq 0.01$). This suggests that excessive sensitivity to others' emotional needs, the ability to accurately recognize emotions through facial expressions, and emotional attunement may hinder respondents' ability to objectively understand others' life situations.

The correlation between university students' ability to understand other people's verbal behavioral expressions and their empathy is also inverse and quite strong ($r=-0.14^{**}$). This indicates that respondents' ability to interpret verbal behavioral expressions is not directly influenced by their empathy level, sensitivity to others' emotional needs, or their ability to understand even hidden emotions.

The correlation between university students' ability to predict other people's behavior and their empathy turned out to be direct and quite strong ($r=0.15^{**}$). This suggests that students' ability to predict others' actions depends on their capacity to understand even hidden emotions, differentiate emotions based on facial expressions, recognize communicative signals related to emotional needs, and exhibit sensitivity to others' emotions.

Discussions

Among students with special needs who studied at Ukrainian universities under stressful conditions – during the pandemic period (2021) and under martial law (2022) – statistically significant relationships were found between various components of social and emotional intelligence. In particular, a direct and strong relationship was established between respondents' ability to understand verbal behavioral expression (the third component of social intelligence) and their empathy ($r = 0.29^*$). This relationship suggests that students' ability to correctly interpret verbal behavioral expression depends on their high level of empathy, sensitivity to others' emotional needs, and ability to understand even hidden emotions. Additionally, a direct and strong relationship was found between respondents' ability to predict others' behavior (the fourth component of social intelligence) and their empathy ($r = 0.34^*$). This indicates that the ability to predict others' actions is influenced by a good understanding of hidden emotions, accurate recognition of emotions through facial expressions, sensitivity to others' emotional needs, and correct interpretation of communicative signals related to emotional needs (Starynska et al., 2023a).

The experimental results we have obtained can help to resolve the complex question of the development of empathy in connection with the components of social intelligence in university students of the during their professional training.

Conclusions

The study highlights the extent to which components of social intelligence are interconnected with university students' empathy. Statistically significant and strong relationships were identified between the first component (the ability to understand others' life situations), the third component (the ability to interpret verbal behavioral expression), and the fourth component (the ability to predict others' behavior) and students' empathy.

Regarding the components of social intelligence, it was found that the largest number of respondents have average levels of ability to understand social interactions, nonverbal and verbal behavioral expression of other people, as well as predict the behavior of other people; the smallest number have low and high levels of ability to understand verbal behavioral expression of other people; low and above average levels of ability to predict the behavior of other people; high levels of ability to understand social interactions and manifestations of nonverbal behavioral expression; above-average level of ability to understand manifestations of nonverbal behavioral expression of other people.

Nearly half of the university students exhibit an above-average level of empathy, while the remaining half demonstrate high, average, and low-average levels of empathy. A low level of empathy was not observed among respondents.

The research findings will contribute to fostering more socially aware and empathetic university students.

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