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Gender Characteristics of Reflection in Higher Education Students in Relation to Social Intelligence

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Abstract: *Purpose of article: to highlight the results of an empirical research on the gender characteristics of the differential type of reflection in higher education students in relation to social intelligence. Systemic reflection, which allows simultaneous coverage of both the subject and object poles, is found at a high level in all male and almost all female participants; at an average level, it is found in a small number of female participants. Introspection, which promotes focusing on the experiences of both own and other people, is identified at a high level in three-fifths of the male participants and slightly less than one-second of the female participants; at an average level, it is found in two-fifths of the male participants and slightly more than one-second of the female participants. Quasi-reflection, which involves detachment from the real situation due to a focus on an ideal object, is found at a high level in three-fifths of the male participants and slightly more than one-second of the female participants; at an average level, it is found in two-fifths of the male participants and slightly less than one-second of the female participants. No low levels of systemic reflection, introspection, or quasi-reflection were observed. Statistically significant differences were found only in the levels of introspection between male and female participants. Statistically significant correlations between the overall social intelligence indicator and systemic reflection, introspection, and quasi-reflection have demonstrated that reflection is a psychological mechanism of the development of social intelligence in higher education students with special educational needs.*

Keywords: *social intelligence; systemic reflection; introspection; quasi-reflection; female participants; male participants; higher education students.*

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Introduction

The intensification of Ukraine's integration process into the European Union actualizes the research of social intelligence and reflection of higher education students, which significantly influences their adaptation to society. According to the provisions of the Law of Ukraine "On Higher Education" (Ministry of Education and Science of Ukraine, 2020), academic mobility of higher education students has been implemented, requiring them to have a high level of social intelligence and reflection. This emphasizes the importance of psychological empirical research on the social intelligence and reflection of Ukrainian higher education students.

Recent foreign and Ukrainian empirical psychological studies have revealed various aspects of the problem of social intelligence and reflection in higher education students of different genders. A foreign research empirically proved that the social intelligence of higher education students does not depend on their gender (Ali et al., 2019). A Ukrainian research empirically established a statistically significant impact of gender on the social intelligence of higher education students with special educational needs. Unlike male students, a larger number of female students are characterized by higher levels of both the overall indicator and the constructs of social intelligence, specifically the abilities related to understanding interactions between others and their nonverbal and verbal behavioural expressions, as well as the ability to predict the behaviour and actions of other people (Starynska, 2023). Another Ukrainian research empirically demonstrated the absence of statistically significant differences in the development of reflection among higher education students of different genders (Balashov, 2020).

As a result of the theoretical analysis of recent empirical psychological studies on this issue, it has been found that the gender characteristics of reflection types among Ukrainian higher education students with special educational needs and their connection to social intelligence have not been studied. The Law of Ukraine "On Higher Education" (Ministry of Education and Science of Ukraine, 2020) declares the importance of creating the necessary conditions for education persons with special educational needs, given their individual opportunities. The importance of solving urgent state problems increases the importance of research on the ability of the individual to successfully adapt that is integrated in his social intelligence. In view of the above, the problem of development of social intelligence of higher education applicants with special educational needs is relevant for modern psychological science and pedagogical practice.

Literature review

Social intelligence is a complex, integrated set of personal abilities to understand and solve tasks that ensure successful interactions with other people. Social intelligence integrates the following personal abilities: perceiving and understanding the general properties and manifestations of others' behaviour; noticing and differentiating the manifestations of verbal and nonverbal behavioural expressions of others; determining the goals, aspirations, and consequences of others' behaviour in interactions with them; predicting their actions (Guilford, 1967).

An important psychological function of a personality's social intelligence is understanding the psychological characteristics, motives, and reasoning of others, which ensures the prediction and construction of effective interactions with them (Goleman, 2021; Lyepikhova, 2005). We assume that one of the significant psychological mechanisms of the individual's social intelligence functioning is reflection.

Indeed, through the intensification of reflection, an individual is capable of critically comprehending, evaluating, predicting, and choosing the form of their internal activity in interactions with other people, in accordance with social norms (Savchenko, 2017).

Purpose of the article: to reveal the results of an empirical research on the gender characteristics of differential types of reflection and to determine their connection with the overall social intelligence indicator of higher education students with special educational needs.

Methodology

Methods. The empirical research of the overall social intelligence indicator levels of the participants was facilitated by the application of the Social Intelligence Test by Guilford & O'Sullivan (1978). The test includes subtests that allow revealing the personality's ability levels to understand: different interaction situations between other people (subtest 1), manifestations of nonverbal (subtest 2) and verbal (subtest 3) behavioral expressions of other people, as well as the ability to predict the behavior of others (subtest 4). The overall social intelligence indictor of the participants is the sum of the points obtained from the four subtests (Mikhailova (Aleshina), 2001).

The empirical research of the reflection levels of the participants was facilitated by the use of the "Differential Type of Reflection" questionnaire (Leontiev & Osyn, 2014), which was tested on a Ukrainian-speaking sample

(Balashov, 2020). The questionnaire contains 30 statements, each of which needs to be rated according to the proposed scale. Based on the processing of the results using the key, low, medium, and high levels of systemic reflection, introspection, and quasi-reflection were determined. Systemic reflection is associated with self-distancing and viewing oneself as if from the outside, allowing the simultaneous coverage of the subject and object's poles. Introspection pertains to the individual's focus on their mental state and experiences. Quasi-reflection involves the individual's focus on an object unrelated to the current life situation, indicating a detachment from this situation. Systemic reflection is productive, whereas introspection and quasi-reflection are unproductive.

Statistical methods. Statistical processing of the quantitative data was performed using Fisher's φ* angular transformation criterion and Pearson's correlation coefficient r. The values of Fisher's φ* angular transformation criterion and Pearson's correlation coefficient r for $p \leq 0.01$ are marked *, for $p \leq 0.05$ are marked ** (Rudenko & Rudenko, 2009).

Participants. The empirical research was conducted at higher education institutions in the cities of Kyiv, Kamianets-Podilskyi, and Zaporizhzhia (temporarily relocated from Berdiansk). The research involved 224 higher education students with special educational needs, among whom were: 34 with hearing impairments, 86 with visual impairments, 69 with speech impairments, and 35 with musculoskeletal disorders. Of all respondents, 105 were male and 119 were female. Their ages ranged from 17 to 22 years old.

The research was conducted in compliance with the Ethical Code of Psychologist of Ukraine. The study did not require the approval of the ethics commission. All the respondents agreed to participate in the experimental study. All the respondents were informed of the confidentiality of their participation and the possibility of withdrawing their results.

Results

This research uses quantitative results from the empirical examination of the overall social intelligence levels of these male and female higher education students with special educational needs, which are covered in publication O. Starynska (2023). A low level of overall social intelligence was empirically found only in male participants (40%); a below-average level was found in male (40%) and female (81.52%) participants; an average level was found in male (20%) and female (9.24%) participants; an above-average level was found only in female (9.24%) participants. No high levels were found among the participants.

The obtained quantitative data of the conducted empirical research of levels of the systemic reflection, introspection and quasi-reflection of male and female participants are presented in figure 1 and figure 2.

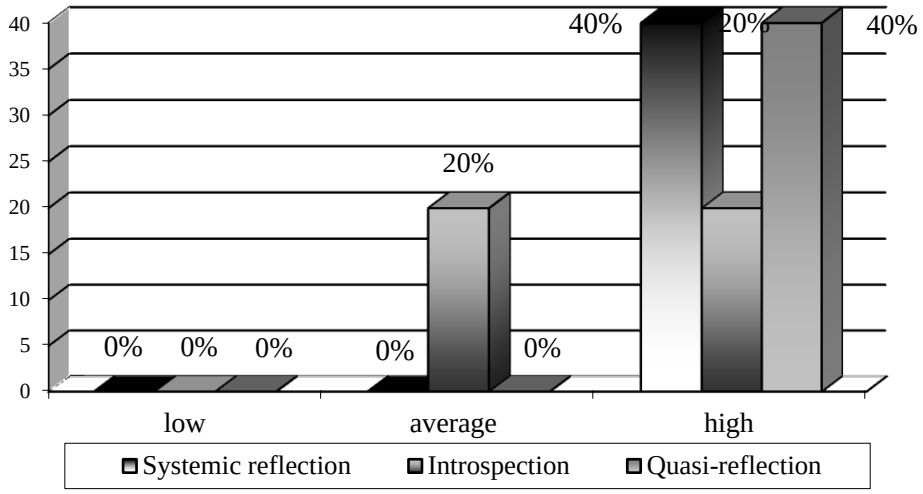


Figure 1. Levels of systemic reflection, introspection and quasi-reflection in male participants

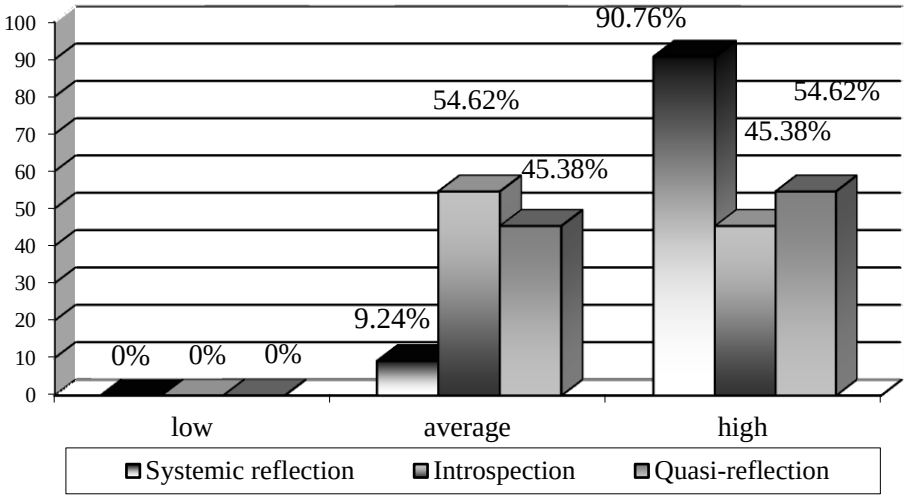


Figure 2. Levels of systemic reflection, introspection and quasi-reflection in female participants

As seen from Figure 1 and Figure 2, regarding systemic reflection, a high level is evident in the majority of participants – 100% of males and 96.76% of females. Those with a high level almost always contemplate what

is happening to them. Continuously analyzing their own actions allows them to learn more about their new properties and qualities. To better understand many interaction situations, participants often "take a timeout". Self-awareness contributes to a better understanding of significant others. In order to better understand interaction situations with significant others, participants often try to relate this situation to their own emotions that caused its appearance. It is important to first understand one's own emotions in many interaction situations. They often pay attention to their own reactions to interaction situations and other people in these situations. Highlighting the differences in opinions between significant others and their own is an important source of information for them.

The average level of systemic reflection is found in only a small percentage of female participants (9.24%). Those with an average level ponder what is happening to them in these situations in almost half of various life situations. By analyzing their actions in almost half of different life situations, they learn more about their traits and characteristics. Sometimes, to better understand interaction situations, they "take a pause". Participants do not often attempt to understand themselves, which hinders their ability to better understand significant others. In order to better understand at least half of the interaction situations with significant others, they try to identify their own emotions that led to the emergence of such situations. In almost half of interaction situations with significant others, participants try to understand their emotions first. In almost half of interaction situations, they notice both their reactions and those of others. Participants rarely pay attention to the differences between their own thoughts and those of significant others, which would provide important information for them.

The obtained quantitative data on high and medium levels of systemic reflection in male and female participants do not allow the application of Fisher's angular transformation criterion.

A low level of systemic reflection was not observed in the participants.

As for introspection, a high level was identified in 60% of the male participants and 45.38% of the female participants. Participants with a high level of introspection mostly agree that sometimes focusing on their own experiences distracts them from their main tasks. They tend to dwell on a situation for quite some time. If they fail to achieve a successful outcome in any activity, they find it difficult to distract themselves from it. Before starting any activity, the participants ponder for a long time as they are overly concerned about their outcomes. If they notice their emotions, their

level of anxiety significantly increases. They constantly think about their urgent needs. The participants remember their failures. Sometimes they are so deeply affected by their mistakes that they cannot correct them.

The average level of introspection was found in 40% of the male participants and 54.62% of the female participants. Participants with a high level of introspection infrequently agree that sometimes focusing on their own experiences can distract them from their main tasks. They infrequently dwell on a particular life situation for a long time. If the participants cannot succeed in an activity, they can distract themselves from it. When starting any activity, they hesitate briefly as they are not overly concerned about the outcome. If the participants pay attention to their emotions, their level of anxiety increases insignificantly. They often think about their daily needs. The participants try not to mention their failures often. They do not excessively dwell on mistakes they have made, so they can correct them.

The differences in quantitative data between the high and medium levels of introspection in male and female participants are statistically significant ($\varphi^*=2.188^*$). A low level of introspection was not observed in the participants.

Regarding quasi-reflection, a high level was established in 60% of the male participants and 54.62% of the female participants. Participants with a high level of quasi-reflection enjoy fantasizing and dreaming about things that are not real in their real lives. When lost in thought, they can easily become distracted and forget about everything around them. They enjoy imagining random encounters and themselves in various interactions with other people. While engaging in any activity, they may picture themselves in a different place, mentally traveling to new countries. Participants often imagine an alternative life path.

The average level of quasi-reflection was identified in 40% of the male participants and 45.38% of the female participants. Participants with an average level of quasi-reflection infrequently indulge in fantasies and dreams about unreal objects in their lives. Dreams that arise unexpectedly rarely distract them from reality. Sometimes they enjoy imagining random encounters and themselves in various interactions with other people. If they are performing an activity, they infrequently become distracted and picture themselves in a new place or country. Participants rarely think about how their lives could have been different.

The differences in quantitative data between the high and average levels of quasi-reflection in male and female participants are statistically insignificant ($\varphi^*=0.814$). A low level of quasi-reflection was not observed in the participants.

In higher education students with special educational needs, statistically significant correlations have been identified between the overall indicator of social intelligence and systemic reflection ($r=0.6$; $p\leq0.01$), introspection ($r=0.23$; $p\leq0.01$), and quasi-reflection ($r=0.16$; $p\leq0.05$). Participants with high and average levels of the overall social intelligence indicator often analyze their own and others' emotional expressions, reactions, and behaviour in interactions with other people due to their high or medium levels of systemic reflection. Participants with high and medium levels of the overall social intelligence indicator interact ineffectively with other people because they often do not focus on their own feelings regarding unsuccessful outcomes, failures, and mistakes, and try to forget about them due to their high or medium levels of introspection. Participants with high and medium levels of the overall social intelligence indicator interact unsuccessfully with other people because they often become engrossed in fantasies about unreal situations in their own lives, imagine random interaction scenarios, and themselves in those situations, due to high or medium levels of quasi-reflection.

Therefore, the obtained results of the empirical research statistically confirmed our assumption that reflection serves as a psychological mechanism of a personality's social intelligence functioning.

Discussion

Instead, social intelligence causes impact on mental health (Starynska et al., 2021) and ensures the effectiveness of social and psychological adaptation of university students with special educational needs (Starynska et al., 2023). Social integration allows university students with special educational needs to interact effectively with other participants in the educational process (Bossaert et al., 2012).

Students with special educational needs, as well as students without them, can also achieve efficiency in learning and emotional social interactions, provided they create an inclusive educational environment (Adibsereshki & Salehpour, 2014; Gebhardt et al., 2012; Jouni & Al-Hroub, 2023) with universal design for learning (Frumos, 2020) and the readiness of university teachers to work in an inclusive educational environment of higher education (Myronova et al., 2021).

We assume that university students with special educational needs, as well as university students without them, can also reach a certain level of academic success and effectiveness in emotional social interactions with other participants in the educational process in the conditions of inclusive

educational environment. The assumption will be verified, and the results of the audit will be covered in our following scientific publications.

The experimental results obtained can be useful for psychologists and teachers of higher education for the development of male and female university students' social intelligence of who have special educational needs, given their reflection.

Conclusions

The conducted empirical research led to the following conclusions. Social intelligence is determined by a complex integrated set of individual abilities that contribute to their success in various interaction situations with other people. Systemic reflection ensures simultaneous coverage by the individual of both the subject and object's poles. Through introspection, the individual focuses attention on their mental state, recognizing emotions, both their own and those of other people. Quasi-reflection involves the individual's detachment from the real situation due to their focus on an ideal object.

In contrast to a considerable number of male participants, female participants do not exhibit a low level of overall social intelligence. Compared to male participants, almost twice as many female participants stand out with below-average levels. Compared to female participants, almost twice as many male participants have average levels. In contrast to a small number of female participants, male participants do not have above-average levels. A high level is absent.

Regarding systemic reflection, it was determined that a high level distinguishes all male participants and almost all female participants; a medium level is only characteristic of a small number of female participants. Regarding introspection, it was found that a high level characterizes three-fifths of male participants and significantly fewer than one-second of female participants; a medium level is present in two-fifths of male participants and significantly more than one-second of female participants. Regarding quasi-reflection, it was established that a high level distinguishes three-fifths of male participants and significantly more than one-second of female participants; a medium level is present in two-fifths of male participants and significantly fewer than one-second of female participants. A low level of systemic reflection, introspection, and quasi-reflection was not detected.

Statistically significant differences are found only in the quantitative data of introspection in male and female participants.

The statistically significant relationships established between the overall indicator of social intelligence and systemic reflection, introspection,

and quasi-reflection confirm that reflection is an important psychological mechanism of social intelligence functioning in higher education students with special educational needs.

The prospect of further scientific research in the empirical research of psychological factors influencing the development of social intelligence constructs in higher education students with special educational needs, taking into account their gender affiliation is recognized.

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