DOI 10.18372/2786-5487.1.18726
УДК 801.675.2

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PECULIARITIES OF AI-TOOLS UTILIZATION AS A SUPPORTER DURING THE MARTIAL LAW

Анотація. *У цій статті розглядаються особливості використання інструментів штучного інтелекту в навчальному процесі в унікальному контексті України, яка перебуває в умовах воєнного стану. У дослідженні вивчаються психологічні профілі головних інструментів штучного інтелекту, таких як ChatGPT та Gemini, порівнюючи їхню здатність відображати цінності та особистісні риси. Крім того, дослідження вивчає вплив впровадження ШІ-інструментів на сприйняття студентами соціальної підтримки. У дослідженні пропонується модель «Лідерські якості – довіра», щоб сприяти інтеграції інструментів штучного інтелекту в академічне середовище шляхом зміцнення довіри та взаєморозуміння. Дослідження підкреслює важливість врахування «психологічного типу» інструментів штучного інтелекту та їхнього потенційного впливу на динаміку*

взаємовідносин між студентами та викладачами. Дослідження надає цінну інформацію про можливості та виклики використання інструментів штучного інтелекту у викладанні в умовах воєнного стану в Україні.

***Ключові слова**: штучний інтелект, соціальна підтримка, лідерство, MBTI, ChatGPT, Gemini.*

***Annotation.** This article examines the specific considerations for utilizing AI tools in teaching process within the unique context of Ukraine under martial law. The study investigates the cultural and psychological profiles of popular AI tools like ChatGPT and Gemini, comparing their ability to reflect national values and personality traits. Additionally, the research explores the impact of AI-tools implementation on students' perceived social support. The study proposes a pattern «Leadership Qualities-Trust», to facilitate the integration of AI tools in the academic environment by fostering trust and understanding. The study highlights the importance of considering the «psychological type» of AI tools and their potential impact on student-teacher dynamics. Study provides valuable insights into the opportunities and challenges of utilizing AI-tools at teaching within the specific context of Ukraine under martial law.*

***Key words:** artificial intelligence, social support, leadership, MBTI, ChatGPT, Gemini.*

Introduction and relevance of the study. Does AI have personality? What about its social values? What a kind social support could it give? To which extents could it compete with human teacher? To which extents it facilitates the independent & critical thinking? And, at last, how deeply it could be trusted? Our strong believe is that for Ukraine these questions are of substantial interest when talking of AI perspectives both in the teaching process and in day-by-day life. Obviously, AI utilization in teaching process already is an extensively explored research field but to our opinion, its socio-psychological context is significantly less treated. Ukrainian reality gives substantial specifics to it as our country is now in the state of war and deep and principial changes were introduced in the teaching process organization.

The situation in scientific literature devoted to the AI-tools utilization in education reminds a situation when a new market is created – the proposition is fragmented, competition isn't yet strong and there always is a place for a newcomer (new ideas in our case). Nevertheless, some trends in the contemporary approaches could be identified.

At the same time Ukraine provides the experience of AI-tools utilization in teaching of exceptional interests since right now the country is at the state of war due to full-scale Russian invasion. In majority of cases the teaching process remains either completely or fractionally online and martial law in acting in the country. Correspondingly, the main idea of this study presents an attempt to create certain patterns of AI-tools utilization regarding the extents to which AI-tools utilization could generate support to the students suffering from the consequences of the war.

To resolve that task authors, propose to introduce the pattern *AI Leadership qualities-trust* which could help to trace the most important ethical and psychological problems of AI implementation in the education.

Problem statement in general form. To create these patterns the following specific subtasks which constitute the general problem statement:

- Creating the psychological profile of the AI to discover its prospectives of leadership and support.
- Perceived social support measurement of the students to find a fit for possible support and leading the students.
- Current profile of the AI utilization in the Ukrainian university environment during to identify the attitudes of teaching stuff, universities administration and society towards AI-tools utilization.

Research methodology. The following methods and approaches were used in the study:

Psychological profile of AI. Psychological profile of AI was measured by MBTI-inspired 94 items survey (Briggs & Myers, 1993) [1], the Keirsey Temperament Sorter of 70 questions (Keirsey & Keirsey, 2009) [3] and full-scale MBTI 166

questionnaire (Mayers *et al*., 1998) [7]. Similarly to the preceding research the AI tools were asked to play a role of national professors. ChatGPT proved to be very capricious frequently avoiding making clear selection of proposed statements. Gemini was much more definitive. It should be noted that in this setting Gemini 1.5 Pro rejected to act as professor. Being asked directly avoiding any professional affiliation it immediately had identified the MBTI questionnaire and informed about necessity to ask for a certified assistance. The questions were used both in one-by-one mode and simultaneously. In the latter case Gemini also immediately identified MBTI tool but did not refuse to answer.

Social support measurement. Starting from the period of return to the online classes after the forced break caused by Russian full-scale aggression in mid-March of 2022 at Alfred Nobel University, Dnipro, Ukraine we begun to collect general data on priorities, attitudes and needs of the support of our students.

Currently, in the social psychology there is a huge amount of research on the perception of the support from the others. The most popular is the model (theory) of three doors that a person can enter in case of need for support (Zimet *et al.*, 1987) [9]. These three doors are family support, friends support, and support from special others (Zimet *et al.*, 1987) [9]. According to the concept developed within this theory, the level of support from these sources should be balanced, otherwise there is a certain imbalance and, accordingly, a feeling of psychological and emotional discomfort. Considering the topic of current research we consider AI-tools as being special others to our students due to leadership qualities as stated in the introduction.

The *Soziale Unterstützung* (*SozU*) (Fydrich *et al*., 1999) [2] and *Multidimensional Scale of Perceived Social Support* (*MSPSS*) (Zimet *et al*., 1988) [10] are widely recognized tools for measuring the support that respondents could get from various sources. The *MSPSS* questionnaire lacks such an important factor as the respondents' perception of the current social burden, so we will present the statistical analysis results only for the *SozU*. It should be noted that the results obtained by the *MSPSS* only confirm the results based on the *SozU*, i.e., this questionnaire was used as a cross-verification tool. The measurements of these sacles were held during whole

period of the full-scale invasion from March 2022 until September 2023 (Momot & Lytvynenko, 2023) [8].

Presentation of the main research material.

Psychological profile of AI. Both techniques utilized to define the «psychological type» of ChatGPT gave almost the same result. According to the Keirsey Temperament Sorter ChatGPT indicates a features of ENFJ personality, while MBTI identifies it as ESFJ, while N-S transition between these measurements could be explained just by the fact that ChatGPT demonstrate kind of «cross-border» temperament along this specific dimension (50,5% of S against 49,5% of N according to Keirsey Temperament Sorter). In case of Gemini the results of both methods coincide absolutely but its «psychological type» proved to be different – INFP. So main AI-tools have different "personalities"! That situation is extremely important because the branching over the first psychological type's dimension provides broader embrace of qualities which could be necessary for AI-tool to become more trusted advisor to the students and to the academic stuff.

In the context of AI-tools utilization in the teaching process it is rother interesting to think about leadership qualities of the «personalities» which were demonstrated by AI-tools. Compiling the type descriptions given on the official MBTI site (www.mbti.org) we could get the following descriptions of these leadership types.

ENFJ (Extraverted, Intuitive, Feeling, and Judging) individuals possess a unique blend of qualities that make them exceptional leaders. The following features define an ENFJ leader:

- *Emotional Intelligence* (EI): ENFJ leaders excel in emotional intelligence. They possess heightened empathy, self-awareness, and intuitive communication. When entering a room, they quickly gauge the atmosphere, read people's emotions, and use this information to navigate complex social landscapes. Their ability to remain composed even in stressful situations creates a sense of calm and stability among team members.

- *Empathy and Understanding*: ENFJ leaders are active listeners. They genuinely care about others' well-being and show interest in their concerns. This empathetic nature fosters strong relationships and helps resolve conflicts effectively.
- *Visionary Thinking*: ENFJ leaders are passionate visionaries. They desire to see the world become a better place. Their dynamic leadership style is characterized by empathy, vision, and a deep commitment to building positive relationships within their teams. They can rally people around a common cause, inspiring action and positive change.
- *Charisma and Communication*: Comfortable in the limelight, ENFJ leaders shine through their exceptional communication skills and natural charisma. They are influential communicators, capable of addressing pressing issues and making a significant impact on society.

Concluding this, ENFJ leaders combine warmth, empathy, charisma, and organizational skills to create a supportive work environment and drive positive transformation.

ESFJ (Extroverted, Sensing, Feeling, and Judging) individuals make exceptional leaders due to their unique blend of qualities. The following characteristics define an ESFJ leader:

- *Charismatic and Facilitative*: ESFJ leaders are charming, warm, and gregarious. They effortlessly connect with people and create a positive atmosphere. Their approach is both task-oriented and people-oriented, striking a balance between achieving goals and nurturing relationships.
- *Servant Leadership*: ESFJs are proactive and caring leaders. They step forward to help and meet the needs of their team members. When someone faces a crisis, the ESFJ leader provides support and empathy. Their genuine concern for others often wins hearts and builds strong bonds within the team.
- *Appreciation and Loyalty*: ESFJ leaders are strong encouragers. They appreciate their teammates' contributions and work. Their loyalty to the team is

unwavering, and they prioritize the collective needs over their own. ESFJs are practical and true servant leaders.

In summary, ESFJ leaders combine charisma, empathy, and practicality to create a harmonious work environment. Their ability to connect with others and provide genuine support makes them valuable assets in any leadership role.

INFP leaders are gentle idealists possess unique traits that make them stand out in leadership roles. Here are the features which define a INFP leader:

- *Powerful Visionaries*: INFPs have a core strength in their high intuition. They envision idealistic goals vividly, like scenes from a movie playing in their minds. Their ability to perceive the big picture allows them to create abstract checklists for successful plans. When these plans align with their idealism, they bring about true change.
- *Keen Eye for Flaws*: INFPs can spot flaws from a mile away. Their quick perception of the whole picture enables them to navigate future paths, identifying errors and considering alternative approaches.
- *Remarkably Contagious Idealism*: INFPs lead not for fame or money but to help others and unite everyone toward a larger purpose. Their idealism is contagious, inspiring those around them to believe in positive change.
- *Mentors of Untapped Potential*: As leaders, INFPs reveal the untapped potential in others. Their caring and creative approach encourages growth and development in those they lead.
- *Emotional Proficiency*: INFP leaders maximize performance through emotional intelligence. Their empathy and compassion create a supportive environment, fostering collaboration and understanding.
- *Annoyance with Hierarchies*: INFPs find hierarchies annoying. They value equality and prefer collaborative decision-making over rigid structures.
- *Childlike Celebration*: When success is achieved, INFP leaders celebrate like children, appreciating the journey and the shared accomplishments.

It should be noted that, not all INFPs fit the stereotypical quiet and aloof mold. Some are confident, outgoing visionaries who lead with humility and reliance. Their unique blend of qualities makes them powerful and inspiring leaders.

Discussion. *Pattern «AI Leadership qualities-trust».* Slightly against the expectations leadership qualities of AI do not demonstrate an undisputable effect on the students perception of the social support coming outside the family and the closest friends (items like *There are people who take me as I am, After some conversations I really feel better, I have a trusted person with whom I can discuss all personal things, I wish for more security and closeness*). Even despite that most recognized AI-tools have different personality, it seems that students could not assign such human qualities as emotional intelligence, empathy and understanding to the AI-tools. Quite possibly it happened since they just think of very utilitarian usage of AI for saving their efforts during the studying at the martial law conditions. At the same time in authors' opinion the «leadership qualities» of ChatGPT are perfect fit to establish itself as trusted one for the students provided, they will have an opportunity to discover these qualities. As to Gemini the introvert psycho of it will hardly enable to become a confident leader in the turbulent situation of war and violence.

Considering this in authors' opinion the main lesson that teachers should learn now in the context of pushing students to proper AI-tools utilization is to persuade them to ask AI to play some role making «human» qualities of AI more apparent. Such approach seems to be quite involving for the students and could lead to more concise and responsible use of it. It should be noted that researchers from Asia & Pacific region (mostly originating from the South Korea) investigated the students' perception of student-AI collaboration and the impact of student-AI collaboration on the students' performance when mastering the STEM disciplines are coming out with some hints towards that distinguishing between cognitive, socio-emotional, and artifact-mediated interaction (Kim & Lee, 2022), (Kim & Cho, 2023) and (Kim et al., 2022) [4 - 6]. which could only arise when AI is not taken just as a utilitarian tool as engineering drawing enhancement tool. Obviously, such a research direction is

extremely promising and authors plan to continue it during coming teaching year pre-training students to specific mode of AI-tools utilization considering the pattern *AI Leadership qualities-trust* and socio-emotional interaction peculiarities.

In the context of above-mentioned the most appropriate role that AI-tools could play both not violating the academic honesty and reaching a high level of the emotional interaction with AI-tool is *a critical friend*. The *critical friend* concept is quite popular in the British education system aimed on better motivation, communication and collaboration of the students when dealing with creative brainstorming results, individual or group assignments. The opinion of the *critical friend* is considered being a powerful enhancement mean before the «raw» results would be presented to the "external" environment – module leaders, other co-students or teachers.

The main principles of the *critical friend* arranged to the AI-tools utilization include the following

- *Reciprocity*: Both participants (student and AI-tool) in the process are "critical friends" to each other, giving and receiving feedback, so dialog with AI-tools could turn out to be quite extensive exploiting such a quality of AI as the *Emotional Intelligence* and *Emotional Proficiency*
- *Trust*: Both participants must trust each other and be open to honest but constructive feedback – that is direct reference to AI now being *Charismatic and Facilitative* and its *Appreciation and Loyalty*
- *Openness*: Students need to be ready to receive criticism from AI-tool, even if it is not always pleasant because of *Annoyance with Hierarchies*
- *Positivity*: Criticism should be aimed at improvement, not at humiliation – appeal to such qualities as *Keen Eye for Flaws & Remarkably Contagious Idealism* and *Untapped Mentoring Potential* of Gemini.
- *Specificity*: Feedback should be clear, specific and based on facts, direc reference to *Keen Eye for Flaws* again

• *Focus on the project*: Criticism should be focused on the project, not the individual

The typical scenario of critical friend roleplaying look like the following:

1. Goalsetting: Goals and criteria (rules, template) for getting the feedback should be set to the AI-tool.

2. Presenting the «raw» results: the students present their work (project, text, presentation) to the AI-tool playing the role of *critical friend*.

3. Receiving feedback: The AI-tool playing the role of *critical friend* provides constructive criticism, focusing on improving the project.

4. Discussion: The feedback received and solutions to problems are discussed together based on the criteria (and format) specified.

5. Implementation: iterative feedback utilization to improve the outcome.

Benefits of AI-tools utilization as a *Critical Friend*:

- *Obtaining an objective assessment*: Helps you get an outside perspective on your work, see weaknesses and possible improvements

- *Developing self-criticism*: Teaches you to analyse your own work and accept constructive criticism

- *Improving communication skills*: Develops communication and feedback skills.

- *Increased motivation*: Receiving support and constructive criticism motivates you to continue working

Some pre-requestives of AI-tools utilization as a *Critical Friend*:

- It is important that the user is prepared for honest and constructive criticism.

- It is necessary to clearly define the scope/areas of criticism.

- It is important to be able to instantly use criticism to enrich an idea.

General conclusions. Thus, summarizing the general results of the study of the problems that arise regarding socio-psychological support during the remote educational process at martial law conditions, the following general conclusions can be drawn:

- In general, academic society is quite optimistic towards AI-tools utilization in the teaching process and scientific activity despite certain concerns. At the same time public opinion is slightly more pessimistic in that instance even being compared with Universities' administration.

- Academic society perception of AI-tools impact in education being definitely negative towards students utilizing the AI-tools enables to conclude that teachers are much concerned about academic honesty violation by students, lacking trust in the results provided by AI-tools to the students, and quite possibly are jealous of possible competition with AI in the future. That is a standard situation which arises not only in the marketing education.

- The measures of risks mitigation related to the AI-tools utilization in the field of marketing education being either general, like *Developing an AI policy, Regular auditing of AI utilization* or rother straightforward like *Teaching students and academic staff to use AI, Computer and technological control over the use of AI* nevertheless evoke an optimism among Ukrainian academic society. Remarkable is that the prohibition of the AI utilization proved to be the least supported option.

- It is discovered that psychological types of both tested AI-tools do not coincide and differ over the main dimension of the psychological profile thus providing with extended possibilities to provide a supportive leadership to the students.

- At the same time leadership qualities of Gemini proved to be insufficient at the conditions of martial law, while ones of ChatGPT despite being realistically fit to the pattern *Leadership qualities-trust & perceived support*, are still unfamiliar to the students.

- The most appropriate movement to raise the students' involvement, conscientiousness, and responsibility when utilizing the AI-tools is to persuade them to ask AI to play some role making «human» qualities of AI more apparent.

- The most appropriate role that AI-tools could play both not violating the academic honesty and reaching a high level of the emotional interaction with AI-tool is *a critical friend.*

Known limitations of the study consist in indirect students' involvement into study on the level of face-to-face interviews which is obviously difficult considering the war in the Ukraine. But obviously such a study could help to understand complicated issues connected with the extents of the AI perceived leadership. The MBTI-type survey utilization also could be criticized but at the same time the alternatives to it are even more questionable.

References

1. Briggs, K. C., & Myers, I. B. (1993). *Myers-Briggs Type Indicator: Form G self-scorable*. Consulting Psychologists Press.

2. Fydrich, T., Geyer, M., Hessel, A., Sommer, G., & Brähler, E. (1999). Fragebogen zur Sozialen Unterstützung (F-SozU): Normierung an Einer Repräsentativen Stichprobe. *Diagnostica*, *45*(4), 212–216. https://doi.org/10.1026//0012-1924.45.4.212

3. Keirsey, D., & Keirsey, D. (2009). *Please understand me II: Temperament, character, Intelligence*. Topeka Bindery.

4. Kim, J., & Cho, Y. H. (2023). My teammate is AI: Understanding students' perceptions of student-ai collaboration in drawing tasks. *Asia Pacific Journal of Education*, 1–15. https://doi.org/10.1080/02188791.2023.2286206

5. Kim, J., & Lee, S.-S. (2022). Are Two heads better than one?: The effect of student-AI collaboration on students' learning task performance. *TechTrends*, *67*(2), 365–375. https://doi.org/10.1007/s11528-022-00788-9

6. Kim, J., Lee, H., & Cho, Y. H. (2022). Learning design to support student-AI collaboration: Perspectives of leading teachers for AI in Education. *Education and Information Technologies*, *27*(5), 6069–6104. https://doi.org/10.1007/s10639-021-10831-6

7. Mayers, I. B.-, McCaulley, M. H., Quenk, N. L., & Hammer, A. L. (1998). *A Guide to the Development and Use of the Myers-Briggs Type Indicator*. Consulting Psychologists Press.

8. Momot, V., & Lytvynenko O. (2023). The importance of perceived social support for higher education students during the hybrid educational process under martial law. *Formation of Competencies of Gifted Individuals in the System of Extracurricular and Higher Education, 2,* 74-86. https://doi.org/10.18372/2786-823.1.18158

9. Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1987). Perceived social support scale. *PsycTESTS Dataset*. https://doi.apa.org/10.1037/t72079-000

10. Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment*, *52*(1), 30–41. https://doi.org/10.1207/s15327752jpa5201_2