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COVID-19 Impact on Media Education in Technical University

ВПЛИВ COVID-19 НА МЕДІАГРАМОТНІСТЬ В ТЕХНІЧНОМУ УНІВЕРСИТЕТІ

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Abstract

The article considers raising students' media literacy as the response to the pandemic challenges highlighting the problem of deficiency of information verifiability and the importance of raising students' critical thinking as a crucial tool in decreasing the COVID-19 pandemic potential damage. The focus of the study lies in the research what sources/genres students of technical universities resort to in getting the information concerning the pandemic, what is their ability to distinguish facts from opinions, trustworthy information from misinformation as well as what are possible differences among students of technical and humanitarian specialities in terms of media literacy. The findings of the survey of 511 students majoring in different specialities at the National Technical University of Ukraine' Igor Sikorsky Kyiv Polytechnic Institute' (after this, the official abbreviated name – Igor Sikorsky KPI) revealed a need in raising students' media literacy in terms of critically assessing information concerning the coronavirus.

Анотація

У статті розглядається підвищення медіаграмотності студентів у відповідь на виклики пандемії, що підкреслюють проблему надійності інформації та важливість виховання критичного мислення студентів як найважливішого інструменту для зменшення потенційної шкоди від пандемії COVID-19. У центрі уваги роботи лежить дослідження того, до яких джерел/жанрів вдаються студенти технічних університетів, щоб отримати інформацію про пандемію, наскільки вони здатні відрізняти факти від думок, достовірну інформацію від дезінформації, а також які можливі відмінності між студентами технічних та гуманітарних спеціальностей з точки зору медіаграмотності. Результати опитування 511 студентів різних спеціальностей Національного технічного університету України «Київський політехнічний інститут імені Ігоря Сікорського» (офіційна скорочена назва - КПІ Ігоря Сікорського) виявили необхідність підвищення медіаграмотності студентів з точки зору критично оцінювати інформацію про коронавірус.

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Introduction

Media literacy is closely connected with quality education with its integral components: quality learners, quality learning environment, quality content, quality processes, and quality outcomes. Quality education is the strategic aim of the National Technical University of Ukraine, «Igor Sikorsky Kyiv Polytechnic Institute," ranked first in the Top200 Universities of Ukraine. Its international recognition is confirmed by the QS World University Ranking Webometrics (Kyrychok, Trishchuk, & Figol, 2021). That is why our research focuses on the problem of Media education in learning English in technical universities. We are interested in finding the answers to questions concerning the impact of the pandemic and, as its consequence, online learning on students, their sources of Covid-related information, their critical thinking abilities and strategies for their improvement.

COVID-19 pandemic has put a significant challenge for English teachers in Ukraine regarding specific problems of online learning as the primary medium of the learning process and from the standpoint of students' mental health concerns. According to UNESCO's statement, more than 300 million students experience e-learning via such synchronous conferencing platforms as WebEx, Zoom, Google Meets, etc. However, online learning presupposes dealing with a significant amount of information, which demands critical assessment, especially during the COVID-19 pandemic. With this aim in mind, we researched learners' essential abilities to think about the news concerning the pandemic at the Igor Sikorsky KPI. The survey encompassed 511 students of 4 faculties and two institutes and was evaluated through the questionnaire. As a result, we formed a hypothesis that a) learners' critical thinking abilities concerning Covid-related information need enhancement by a set of strategies, b) the level of media education of humanitarian and technical students will vary due to the content of their syllabi.

Literature Review

A significant number of people, including academic personnel and students, were demanded to follow the implemented general and/or partial lockdown worldwide (Cooper, Mondal, & Antonopoulos, 2020). Access to the classrooms was restricted due to the imposed long-term lockdown. The closure of educational institutions greatly affected students' cognitive abilities and raised mental health issues (Araújo, de Lima, Cidade, Nobre, & Neto, 2020). The academic staff has also faced new challenges requiring the development of student's critical thinking ability, which became crucial. It is claimed that the e-learning model replaced traditional face-to-face learning leading to educational transformations (Firmansyah et al., 2021).

The success of e-learning systems depends on the programme's level of students' and teachers' performance (Thongsri, N. S., Shen, L., & Bao, Y., 2019). However, in many universities, online courses are successfully developed and implemented into the process of learning. It can be exemplified by a pedagogical experiment on applying the authors' teaching methodology to form students' terminological competence in bilateral interpreting in the Moodle-based e-learning course (Kalay, Fedorenko, Gureyeva, Kolomiiets, 2020).

Even though online teaching is one of the promising trends of traditional classroom teaching, according to recent studies, students negatively perceive online learning behaviour (Rohman, Sudjimat, Sugandi, & Nurhadi, 2020). This might significantly influence students causing psychological distress (Fradelos et al., 2019).

It is worth mentioning that e-Learning is the best option of studying in the current situation and, in general, is close to traditional training; 'an internet-based meta-analysis concluded that 25% of students of the USA are suffering from severe anxiety due to e-learning crack-up' (Hasan, & Bao, 2020). According to the research (Lee, 2020), 83% of students suffer from the worst possible situation, and 26% cannot get access to mental health support. This situation resulted in the negative attitude to the e-learning appealing to the demand to measure the psychological stress level among university students (Hasan, & Bao, 2020), helping them develop critical thinking skills regarding the information and news assessment within the framework of the pandemic.

Identity development is considered one of the critical issues of 'a student-oriented digital citizenship model' (Gleason, Guillern, 2018). In such a way, the digital citizenship concept means not only appropriate technology application and the ability to study online (skills to find, evaluate and use information) but to develop, create and implement social and cultural practices; this issue helps develop the discussion about the interrelation of literacy practices, identity, and digital citizenship.

Due to the research 'Tweens, teens, tech, and mental health: coming of age in an increasingly digital, uncertain, and unequal world 2020', conducted to study crisis among young people in the USA, 61% of respondents are worried they or someone in their family will be exposed to the virus (Odgers, & Robb, 2020).

Thus, the question may arise about the trustworthiness of the information sources concerning the COVID-19 pandemic and the ability to think critically in interpreting and evaluating the information under consideration. In other words, to raise students' media literacy which is the subject of numerous studies, some scholars treat it as a complex object with multiple underlying literacies and definitions (Mendoza, 2007). Others define it as the ability to access, analyze, evaluate, and create messages in a wide variety of forms.

Media literacy is developed in the process of Media Education, the foundations of which have been developed through the works of Len Masterman with his eighteen basic principles for media awareness education (Masterman, 1989) and Elizabeth Thoman's (Thoman, 2001) five concepts represented by five questions:

– Who created this message, and why are they sending it?
– What techniques are being used to attract my attention?
– What lifestyles, values, and points of view are represented in the message?
– How might different people understand this message differently from me?
– What is omitted from this message?

These theories are further developed in different aspects of:

– general issues of media education (Fedorov, & Mikhaleva, 2020);
– critical thinking development (Bearne, 2003);
– digital media practice (Couldry, 2012);

– controls for news feed (Frantz, 2015);

Special attention is paid to news as a genre and to study the role of media education in learning EFL and ESP (Dvorghets, & Shaturnaya, 2015).

We share the idea that literacy education enhances critical thinking and students' reading, listening comprehension, message analysis and interpretation, and writing skills (Hobbs, & Frost, 2003).

It should be noted that training highly qualified specialists presupposes developing strategies of combining different sources of information from the main disciplines to ensure the continuous development of theoretical knowledge and the accumulation of new experiences. Besides, there is the need to develop specific skills to consume and interpret information to gain new knowledge. The work with information provides a whole range of operations for information search, systematization, processing, and production.

It is claimed that one of the problems in teaching English is the inadequate ability to integrate professional foreign language abilities into the learning process (Li, 2020). The interdisciplinary approach proves to be the possible solution to the problem (Fedorenko, Kolomiiets, ikan, & Tsepkalo, 2020).

Methodology

The study employs such methods as analysis of educational, that is, sociological, psychological, and pedagogical sources on the issue under consideration; the questionnaires as the tool of needs analysis; observation of the educational process; the genre-based approach (Burns, Candlin, & Mercer, 2001), (Nallaya, 2018), (Ding, 2007) was chosen for the research with the aim not only to solve students' difficulties in learning English writing but also in terms of media education; research of non-profit organization Common Sense Media' Teens and the Media 2020' (Teens and the Media, 2021) which revealed specific problems of online learning that has become the mainstream tool during this crisis.

The theory of Media education (Masterman, 1989) provides an understanding of how to implement the positive results of the genre approach in teaching ESP written production at the Publishing and Printing Institute of the Igor Sikorsky KPI in developing strategies of raising students' media literacy.

The research procedures employed in the study were relevant to its aim and involved:

− survey based on the questionnaire;
− classroom observation;
− development of strategies for raising media education.

As the most objective data collection method, the questionnaire provided a sufficient and trustworthy basis for developing students' media literacy during the COVID-19 pandemic.

The survey involving 511 students majoring in different specialities at the Igor Sikorsky KPI was conducted in February 2021. The questionnaire was selective in forming two groups of respondents – engineering students of various specialisms and humanitarian students of specialisms 147 and 035 (Ukraine's higher education standard, bachelor level).

The questions of the questionnaire were aimed at eliciting the following:

− general information on students' worries in terms of the pandemic;
− data about the sources and genres of information about the coronavirus challenges;
− self-assessing the level of critical thinking skills;
− ways of distinguishing misinformation.

The questionnaires consisted of closed-type questions; each interviewee worked with a Google Form that contained ten problematic questions. The online service of Google Forms automatically processed the answers and displayed them in the corresponding charts; it was fast and convenient. The respondents answered anonymously, i.e., no emails and real names were required since not many students want to leave their data.

Results and Discussion

The questionnaire began with the introductory part, indicating the purpose of the survey and recommendations on how to complete it. Then, the introductory part adjusted the respondents' cooperation to obtain objective answers. Here are some sample questions and an analysis of the findings.

As has been already mentioned, due to the pandemic and distance learning, students face psychological problems. That is why the first question dealt with the students' worries concerning COVID-19.

Answers to the first question about how much the respondents are worried if they or someone in their family will be exposed to the coronavirus are as follows. 33.3% of the students majoring in technical specialities are 'worried very much', compared with 59% of future journalists and translators. However, as can be seen, the percentage of those who 'worried very much' in both groups of students is about the same and shows the high level of worry concerning the pandemic news.

We found it essential to question the sources of the pandemic concerning news (Fig. 1). When asked where they get news about the coronavirus pandemic, the overwhelming majority (81.6%) of the respondents from technical faculties and 68% from humanitarian ones admitted social media as the primary source of information; 39.1% of the respondents from technical faculties and 25.2% mentioned printed or electronic media. However, on answering the question concerning the frequency of receiving news about the coronavirus pandemic, approximately one-third of the respondents – 35.4% of the respondents from technical faculties and 29.9% from humanitarian ones – admitted that they rarely get this information. Considering that it accounts for approximately one-third of the respondents, we argue that sharing the pandemic news should become regular classroom activity.
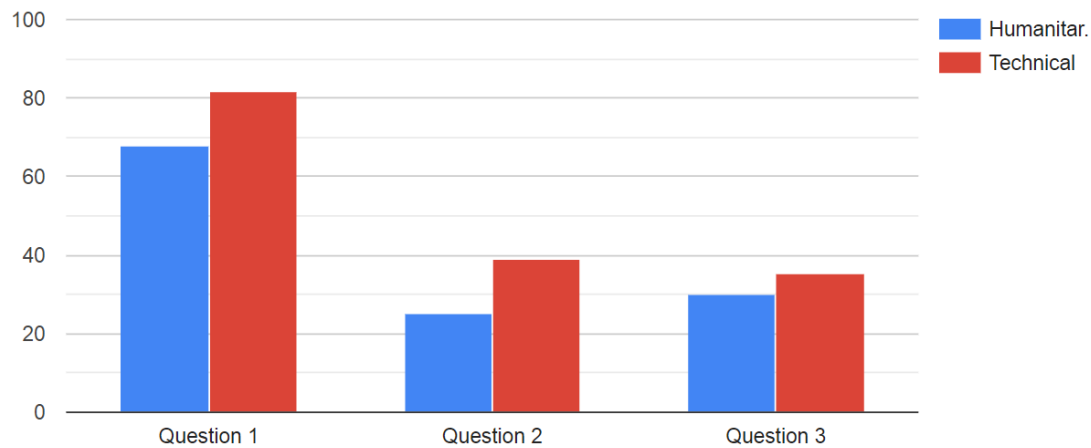
Fig. 1. Sources of news.

We can see that the difference between the two groups of respondents is not significant (not more than 14%; Questions 4-6 aimed to define the students' level of critical thinking (Fig. 2).

Whereas question 4 is concerned with understanding the essence of critical thinking, question 5 - 'How do you assess your skills in critical thinking concerning the news?' - dealt with students self-assessment of their skills in critical thinking and the sixth question – focused on students' ability to distinguish fakes. The following results were obtained on this set of questions.

The majority of respondents (72.6% of future journalists and translators and 66.7% of those majoring in technical subjects) considered that the ability of critical thinking is to identify the relevance and importance of ideas.

In self-assessing their skills in critical thinking, 26% of respondents majoring in technical subjects choose 'well-developed skills', 50.8% - 'developed enough to distinguish fakes, while the answers of students from humanitarian faculties being 64.8% and 22.1%, respectively. However, in our opinion, these results need to be verified by certain classroom activities.
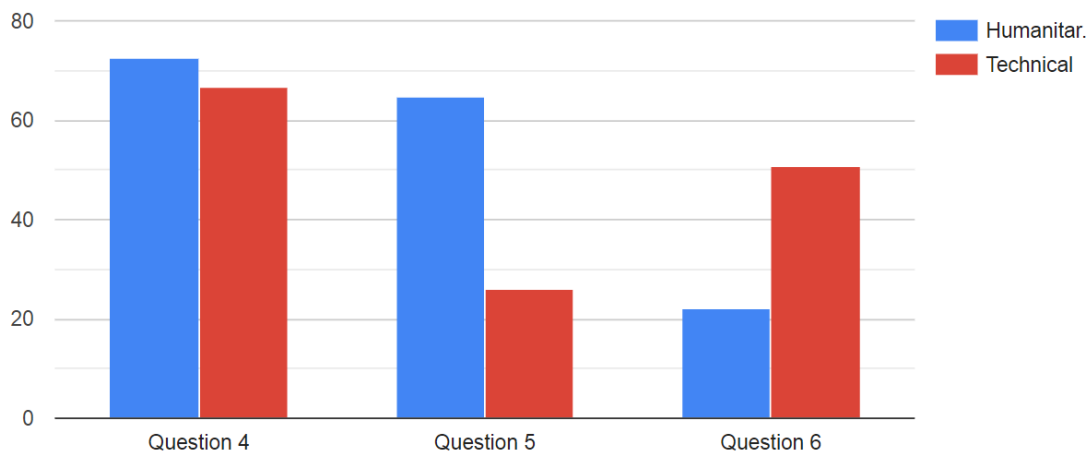
Fig. 2. Defining the students' level of critical thinking.

Students majoring in humanitarian sciences proved to be more confident in their skills in critical thinking, while their technical counterparts feel more confident in distinguishing fakes.

In our opinion, these results need to be verified by certain classroom activities.

The last set of questions considers ways of distinguishing misinformation (Fig. 3). Answering Question 7, 'What helps you tell the difference between opinion and facts?' more than

a half of respondents chose 'genre of the source'. At the same time, 46.2% of technical students and 23.3% of those studying at humanitarian faculties claimed 'intuition' as a tool in the difference between opinion and facts. The result is somewhat disturbing and shows that self-assessment of critical thinking ability can't be considered entirely objective. Finally, we posed Questions 8 and 9, bearing in mind clarifying the role of the genre approach in identifying misinformation. The figures elicited show that more than one-third of the respondents from both groups of students identify misinformation by distinguishing the genre of the text and about one

half (42.9%) of humanitarians and more than a half (58.6%) of technical students identify manipulation in information by violating the genre requirements, e.g., excessive use of evaluating vocabulary in informative genres.

It was surprising to see that technical students are more genre-oriented in identifying misinformation. The last question is aimed at eliciting information on the most popular genres in getting the information. The results show that information articles with 66.2% answers of technical students and 51.7% – of students from humanitarian faculties enjoy the most popularity.
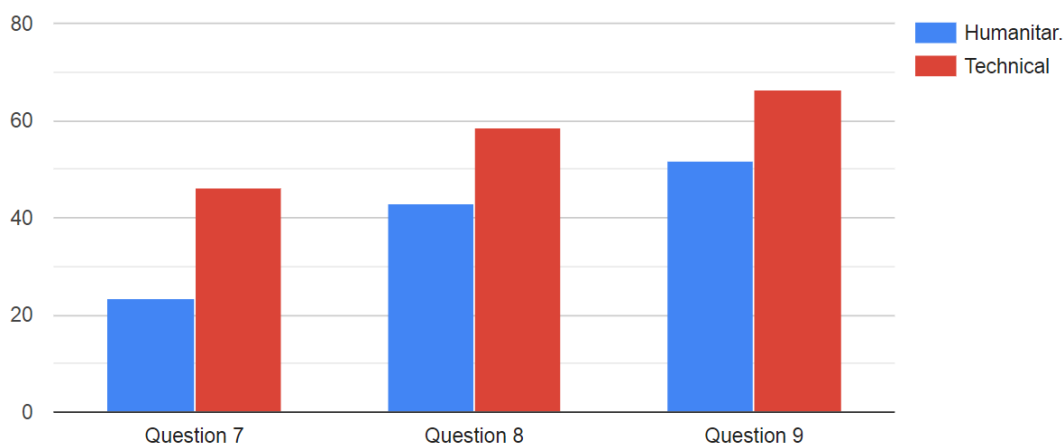

Fig. 3. Ways of distinguishing misinformation.

Surprisingly, the percentage of technical specialism students assessing their skills as 'well developed' is three times less than those from humanitarian faculties. Question 6 was aimed at assessing students' critical thinking by asking how often they can understand biases. More than 70% of respondents of both groups of students claim that they always or often understand preferences.

We argue that in terms of developing students' critical thinking skills and raising their media literacy which is of particular importance in the time of the pandemic, it is advisable to focus on the genre-based strategies in media education, to which we include:

– strategies of differentiating genres;
– strategies of distinguishing facts from opinion;
– strategies of identifying misinformation;
– strategies of making use of information in formulating an idea.

We suggest several activities that promote the development of these strategies.

Strategies of differentiating genres:

1) Read the text about journalism genres and be ready to discuss the information with your fellow students.

1. What are the principal types of journalism?
2. What are the informative texts?
3. What is the purpose of an informative text?
4. What are some types of informative texts?
5. Why is a news article the most essential article type in journalism?
6. How are informative texts organized?
7. What is the difference between a 'tabloid' newspaper and a 'broadsheet'?
8. What are the different promotion strategies used in mass communication?

Strategies of distinguishing facts from opinion

• Study the announcement. Transform the informational announcement into an advertising one adding some opinions to the facts. In pairs, check your transformed text

Strategies of identifying misinformation

- Study the news about the COVID-19 virus and share your opinions on how to identify misinformation in pairs.

NEWS 1. Hot weather can kill the novel coronavirus.
NEWS 2. According to the World Health Organization, the COVID-19 virus can be transmitted in all areas, including areas with hot and humid weather.
NEWS 3. Vaccines against pneumonia can protect you against the new coronavirus.
NEWS 4. Vaccines against pneumonia, such as the pneumococcal vaccine, do not provide protection against the new coronavirus. The virus is so new that it needs its vaccine.

Strategies of making use of information in formulating an idea

- Study the news about the COVID-19 virus, and
- Formulate an idea how
a. to distinguish facts from opinions
b. to distinguish misinformation.

The suggested strategies promote the development of media literacy, thus contributing to quality education as the strategic aim of the National Technical University of Ukraine, «Igor Sikorsky Kyiv Polytechnic Institute," (Kyrychok, Trishchuk, & Figol, 2021).

As far as the process of implementing these strategies into learning and teaching practice is concerned, we argue that the online mode during the pandemic period is most effective. (Firmansyah et al., 2021).

Moodle-based e-learning course for forming terminological competence suggested by Turkish and Ukrainian educators (Kalay, Fedorenko, Gureyeva, & Kolomiiets, 2020) can serve as an example.

In addition, developing students' strategic competence studied in an interdisciplinary approach to modelling in teaching English for Specific Purposes (Fedorenko, Kolomiiets, Tikan, & Tsepkalo, 2020) should be taken into consideration. The authors analyze three stages of developing students' strategic competence, namely, preparatory, which activates knowledge in the subject area, cognitive-communicative-where the cognitive processes are activated in order to develop the levels of thinking following the ideas of Bloom's taxonomy and communicative-productive.

In this research, strategies of differentiating genres activate knowledge in media education strategies of distinguishing facts from opinion, strategies of identifying misinformation develop critical thinking resulting in formulating the ideas, which corresponds to the communicative-productive stage.

Conclusions

The survey analysis results allow us to conclude a strong need to raise students' literacy in the pandemic. The major conclusions drawn as the result of the survey can be summarised as follows. Respondents from technical faculties showed a much lower level of worry than those studying at humanitarian faculties (33.3% compared with 59%). It was the only result with such a difference between the two groups of respondents. The results of the answers to the following nine questions did not show more than 14%. The difference between "humanitarian" and "technical students". Students majoring in humanitarian sciences proved to be more confident in their skills in critical thinking, while their technical counterparts feel more confident in distinguishing fakes.

The data and attitudes elicited from respondents proved our assumption that it is advisable to use the genre approach in media education and suggest developing strategies in raising students' media literacy. On the other hand, our hypothesis that the level of media education of humanitarian and technical students will vary has not been fully proved.

We understand that the methodology of media education is extraordinarily complex and cannot be solved entirely in this study. Nevertheless, we suggest the four genre-based strategies for developing students' critical thinking skills while processing the pandemic-concerned information.

The existing data don't allow drawing definite conclusions regarding the prevalence of technical specialisms to have better formed critical thinking abilities regarding the pandemic information in terms of media literacy. Therefore, this question requires further research. However, we clearly see the necessity of including media education in the curriculum for technical and humanitarian specialisms.

We envisage the perspective of the study in the further research on the detailed description of

activities for each strategy, in applying the developed methodology in the teaching process and, in validating its efficacy not only in teaching English but, what is much more critical in enhancing students' critical thinking abilities, thus contributing to providing the Quality education in a technical university.

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