Problems of Developing Media and Information Competence of Future Journalists on the Basis of Case Technologies

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Abstract: Case technologies in training are an effective interactive method of teaching, the use of which is very relevant for developing the skills necessary for work in future journalists. The purpose of this work is to consider the problems of developing media-information competence using case technologies for training future journalists. This study used empirical methods involving teachers (n=8) and journalists (n=8), and journalism students (n=168) in a programme to develop students' media literacy skills. A form was used to assess the students at the end of the programme. During the programme, the teachers and journalists observed the activities and reached a consensus. The quantitative findings revealed that the least developed media information literacy skills of the future journalists are the lack of knowledge regarding the management and regulation of the media, the lack of knowledge to identify and manage inappropriate behaviour in all media and understanding how to present content (style or context) that can affect the perception of the content. Case technologies are effective for teaching journalists in general, but for the formation of media information literacy, additional classes are needed especially thematic classes using case technology to form media information literacy. The results of the study are applicable for the development of training programmes for future journalists in higher educational institutions, self-education of journalists and to improve the pedagogical activities.

Keywords: Education, Information sources, Interactive method, Journalism, Teaching

1. Introduction

The digital transformation of the media industry has created a need to learn new skills and abilities. Journalists must be able to quickly adapt to new platforms and formats while maintaining high quality reporting. Accordingly, the training of future journalists should include both traditional journalistic skills and new ones: creating content on social media platforms, using data analysis tools and software, understanding and incorporating data into their reporting, and much more. To do this, it is important for future journalists to create a learning environment that will contribute to the development of the skills of a modern journalist. In addition to the basics of theory, it is necessary to train future journalists in the use of new technologies that allow them to search for information, verify and create the necessary and high-quality content. In order to train students in the ability to perceive, process and provide information to society, it is necessary to carry out the learning process using the latest learning tools, and widely use active learning methods (Spilsbury, 2018). Researchers have

demonstrated the effectiveness of innovative pedagogy, and the training of future journalists at all stages – individual, group and network (Drake, 2017).

The effectiveness of using active learning methods for students has been repeatedly emphasised (Galatsopoulou et al., 2022). Also, these researchers studied the effectiveness of using video in active learning scenarios. That is, the students were trained using the scenarios seen in the video and solved the questions that arose in these scenarios. Learning using case technology involves the application of acquired knowledge in the process of a certain scenario (that is, the scenario of specific situations of the work of a journalist). This method is actively used in business schools to improve many practical skills and master the features and nuances of the profession. It is also referred to as case studies. This method is effective for teaching practical skills, allowing you to deepen your understanding of the topics studied, develop interpersonal skills, gain practical experience in teamwork and communication in a professional environment. Despite these advantages, there are few studies on the effectiveness of training future journalists using case technology (Breit, 2020).

Additionally Larrondo et al. (2018) proved the effectiveness of developing practical skills in future journalists using active learning methods. Using the case study method or case technologies in this study, students should learn to cope with the task of a modern journalist – how to properly use the skills of collecting, organising and presenting information. In the process of learning using case technologies, students learn new skills, and apply the knowledge gained in the process of theoretical studies in practice. Also, students analyse the problems that arise during the creation of content in a playful way, analyse the possible consequences of publishing different content, and examine the perception of content by different readers. Thus, the use of the case method helps to approach the journalistic style of writing through practical projects, content production, comparisons of print and non-print (online) media to draw one's own conclusions. It is necessary to study what theoretical and practical information could help in solving problems during training using case technology.

The actual need to update the skills and knowledge, the methods used in the training of future journalists (Herrero-Diz et al., 2022; Wahl-Jorgensen & Carlson, 2021) can be observed. The formation of media information literacy is part of professional modern journalism (Auberry, 2018). Rodriguez-Hidalgo et al (2020) and Korczak (2019) shared that information and media literacy is key in training journalists and a necessary condition for their future work. The training of journalists requires the conceptualization of curricula in terms of cognitive skills, forms, methods and learning environments. Various activities are being carried out in the Republic of Kazakhstan towards improving the quality of education and media literacy of journalists. This includes updating curricula, introducing interactive and active teaching methods (Laila, 2016). The effectiveness of conducting classes for students with professional journalists has been experimentally proven whereby students have been made aware of the challenges in modern journalism and the application of interactive teaching methods (Poplavska et al., 2022). Despite a large number of studies providing recommendations for journalists, the problems in their training, trends and challenges of the modern world remain unresolved. According to researchers, the use of case technology allows students to learn the skills of practical work. Therefore the purpose of the study is to explore the problems revolving the development of media and information literacy among students using case technologies.

2. Methodology

In the current study, a programme was developed for journalism students. The researchers used media information literacy skills assessment of future journalists, and interviewed teachers and journalists who participated in the teaching activities. Finally, the results of assessment and interviews findings have been summarised.

The training programme was developed and implemented using case technologies for future journalists. Teaching activities were carried out by teachers and journalists with 5-10 years of experience. The purpose of the classes was not the formation of media information literacy, but teaching the practical skills of a journalist in different situations, discussing problem solving, and identifying missing knowledge. Features of the classes for the first task included simulation of authentic conditions of real world situations, setting of tasks, deadlines for submitting assignments, and specific types of material submission.

The topics and goals that were used during the course of the programme are presented as follows: (1) A report on public affairs (about housing, transport, not extra news, but about ordinary life), which must be presented in an interesting way for readers (in a newspaper), viewers (video), listeners (radio); (2) Interview with an athlete and his coach about the path to specific competitions, training conditions. Encourage the younger generation and their parents to start playing sports, but without completely bypassing the difficulties of the sports path; (3) Report on the state of the ecology of the region. How to file so that people consciously sort waste, but at the same time not to hook and not reproach the government for polluting the region. Separately discuss the submission of content for radio, print media and video reporting; (4) Health reports. The state of the clinics (submit in compliance with the rules of ethics), the possibility of free counselling and treatment for different segments of the population, progress in medicine in the region and the country; (5) International affairs and relations with other countries (presidential meetings, parliamentary meetings, new laws and their impact); (6) Reporting on construction in the region (residential and non-residential facilities) for the purpose of advertising; (7) A report about the novelties of home appliances (for students), new cars (for students), their functions, price ranges, opportunities, disadvantages, comparison of models; (8) Conducting a study of the ratings of higher educational institutions of the country, agree on the submission of a report with the government.

All topics were discussed for submission in the form of a radio report, a print publication and a video report. Teachers and journalists also made it difficult for students to deliver content during class (for example, people not wanting to give interviews, competition with other journalists, significant comments from the editor-in-chief when the content is almost ready to be released, and so on). Thus, classes using case technology were held once a week during one academic semester. A total of 80 lessons were conducted using case technologies; 10 lessons for each teacher. The teachers and journalists observed the students during class and after the programme was conducted, they assessed the students' media information literacy skills on a 5-point Likert scale. The literacy skills were presented via Google Forms (reported in Table 1).

Table 1. Teachers and journalists' form for assessing media information literacy among students

Media information literacy skills	**5 Excellent**	**4 Good**	**3 Average**	**2 Below Average**	**1 Weak**
1. Understanding how content is created and edited.					
2. Ability to distinguish between different types of content, facts, thoughts, advertisements.					
3. Understanding the role of independent media in a healthy democratic society, representing different views, promoting informed discussion, holding accountable.					
4. Understanding media messages while reading, listening, comparing.					
5. Evaluation of content and services for truthfulness, reliability, independence and impartiality.					
6. Understanding how the presentation of content (style or context) can affect the perception of content.					
7. Recognition of influencers, stereotypes, bias, irrational portrayal, inappropriate content or context, lack of evidence.					
8. Create content with text, images, audio, video, and code.					

Media information literacy skills	5 Excellent	4 Good	3 Average	2 Below Average	1 Weak
9. Recognizing and managing inappropriate behaviour across all media.					
10. Participation in public discussion by expressing thoughts, and responding to the thoughts of other people.					
11. Confidence in knowing your rights and obligations regarding data and privacy Competence in data management and privacy when using (social) media services.					
12. Knowledge of how different media are regulated or not.					
13. Understanding how social and search services work and how technology can influence media choices, behaviours, and content/view diversity (e.g. use of algorithms).					
14. Knowing who owns different media and how content is funded (e.g. private property, public funding, advertising, sponsorship).					

The quasi experiment involved 4th year students. It involved 168 students from the Journalism Faculty, Universities of Kazakhstan. This involved 79 males and 85 females, average age – 22±2 years) and 8 teachers of professionally oriented disciplines of the curriculum (4 females, average age – 35±5 years, 4 males, mean age 38±3 years). All the teachers who participated in the experiment had a Ph.D. Also, working journalists (n=8) with 5-10 years of experience (5 females aged 34±3 years, 3 males aged 36±3 years) were invited to conduct classes and assess media literacy skills of students. In addition, they were interviewed regarding students' media information literacy skills and the problems of developing such skills during classes using case technologies. The duration of a lesson was about 2 hours, and classes were held by the teachers with the journalists.

After the training programme, the experts assessed the level of development of media information literacy skills of their students. While observing the students, the experts noted the students' discussions of problem solving, knowledge or even ignorance of the nuances. To highlight the problems of the formation of media and information literacy among future journalists during the classes on case technologies, a theoretical (analysis, synthesis), empirical methods (pedagogical experiment), sociological methods (questionnaires, interviews), methods of mathematical statistics were used. The results obtained were processed in Google Tables; the average values of information literacy skills assessment, deviations, differences between different groups of students, between male students and female students, the difference in assessments of teachers and journalists were studied and reported as follows.

3. Results

Each group was assessed by the teacher after discussion with the journalist. This assessment did not affect the student's semester grades in order to avoid subjective assessment. The results obtained are shown in Table 2.

Table 2. The results of assessing the media information literacy skills of future journalists

Media information literacy skills	Evaluation of teachers			Evaluation of journalists		
	students (women)	students (men)	*p*	students (women)	students (men)	*p*
1. Understanding how content is created and edited.	4.38	4.44	>0.05	3.34	3.25	>0.05
2. Ability to distinguish between different types of content, facts, thoughts, advertisements.	4.42	4.24	>0.05	3.55	3.88	<0.05
3. Understanding the role of independent media in a healthy democratic society, representing different views, promoting informed discussion, holding accountable.	3.27	3.41	>0.05	2.87	2.87	>0.05
4. Understanding media messages while reading, listening, comparing.	3.49	3.55	>0.05	2.78	3.14	>0.05
5. Evaluation of content and services for truthfulness, reliability, independence and impartiality.	2.26	2.98	<0.05	2.33	2.14	>0.05
6. Understanding how the presentation of content (style or context) can affect the perception of content.	1.91	2.11	>0.05	1.97	2.14	>0.05
7. Recognition of influencers, stereotypes, bias, irrational portrayal, inappropriate content or context, lack of evidence.	2.31	2.25	>0.05	2.11	2.31	>0.05
8. Create content with text, images, audio, video, and code.	2.24	2.11	>0.05	2.05	2.54	<0.05
9. Recognizing and managing inappropriate behaviour across all media.	1.74	1.85	>0.05	1.84	2.32	<0.05
10. Participation in public discussion by expressing thoughts, and responding to the thoughts of other people.	2.31	2.24	>0.05	1.85	2.11	>0.05
11. Confidence in knowing your rights and obligations regarding data and privacy Competence in data management and privacy when using (social) media services.	2.37	2.03	<0.05	2.35	2.47	>0.05
12. Knowledge of how different media are regulated or not.	1.57	3.54	<0.05	1.68	2.11	<0.05
13. Understanding how social and search services work and how technology can influence media choices, behaviours, and content/view diversity (e.g. use of algorithms).	2.79	3.34	<0.05	2.57	3.21	<0.05
14. Knowing who owns different media and how content is funded (e.g. private property, public funding, advertising, sponsorship).	2.63	3.11	<0.05	2.4	2.69	>0.05
Average score	2.69	2.94	-	2.4	2.65	-

The results show that there are statistically significant differences between the assessments of female students and male students in media information literacy skills. This is also observed in the assessment by teachers and journalists. It can be noted that there are statistically significant differences in assessment in the skill "Understanding how content is created and corrected", there are no differences in assessment of other skills (see Figure 1).

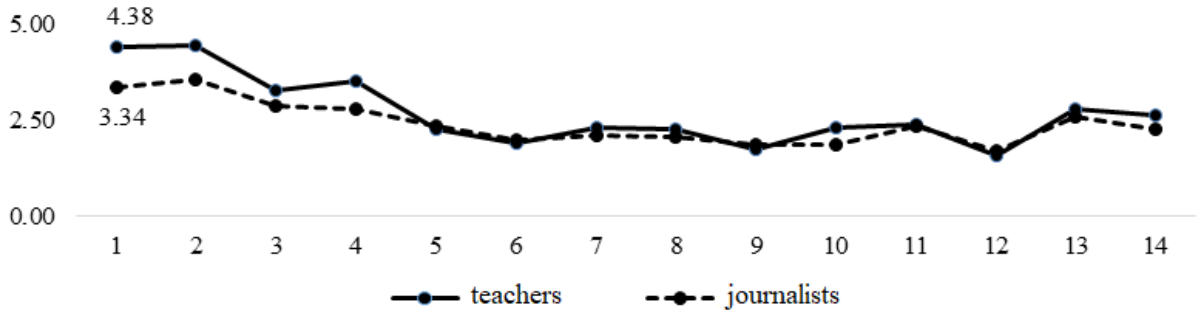

Fig. 1 Assessment of media information literacy skills of female students by journalists and teachers

Male student ratings show that there are statistically significant differences in the skills "Understanding how content is created and adjusted" and "Knowing how different media are regulated or not" (Figure 2).

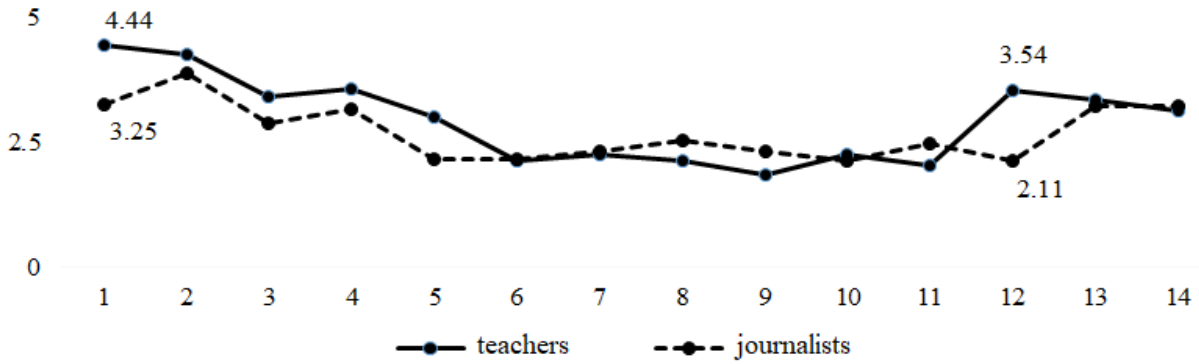

Fig. 2 Assessment of media information literacy skills of male students by journalists and teachers

This can be explained by different perceptions of teachers and journalists about the level of development of these skills in students. It also indicates the need for interaction between teachers and journalists in the process of practical training of students who would be future journalists. The researchers believe that journalists are more demanding in terms of skills since they are constantly on the job, however, this does not mean a lack of competence among the teachers.

Based on the results obtained, the main problems of the formation of media information literacy among future journalists have been identified via the low assessment results of these skills and interviews with teachers and journalists. The first problem is the lack of knowledge regarding the management and regulation of the media. This skill was rated by teachers and journalists, respectively, at 1.57 and 1.68 points among female students, at 3.54 and 2.11 points among male students. Accordingly, it is necessary to supplement the curriculum or a targeted thematic lesson using case technologies to study this issue further. The second problem is the lack of knowledge to identify and manage inappropriate behaviour in all media. The third problem is the skill "Understanding how the presentation of content (style or context) can affect the perception of content" also did not score well. In general, the use of case technologies showed an average level of literacy development among students. These results have many causes, which the researchers tried to explore further during the interview. Interview data with teachers and journalists is discussed as follows.

One of the teachers noted:

> *..students find information, but do not always check its authenticity, do not adhere to copyrights or forget about the ethics of a journalist. When developing reports on some topics, one can see a lack of student knowledge on a specific topic (laws, nuances that are not visible at first glance), or they do not always think about the consequences of reports.*

Another teacher noted:

> *It is difficult for students to create content that meets the requirements of ethics and does not contradict the purpose and style of publications. They can create content, but it needs to be refined, because nuances are important in journalism.*

And another teacher noted:

> *The case technology classes were very interesting, but it is difficult for students to distinguish true information from false information, or to search for information in depth when you need to quickly create content. I believe that such classes should be continued in the future so that students develop a certain "observation", skills to distinguish the truthfulness of information, its search and processing in modern conditions.*

Several other teachers agreed that during case technology classes, students use the information they found on the web without checking its authenticity, do not understand the consequences of publishing content, and rush to publish extra news without knowing the specifics of managing media resources. All teachers agreed that in order to correct the current situation, it is necessary, firstly, to improve the programme of theoretical and practical classes of the course, and secondly, to continue using case technology and other active teaching methods with invited journalists and other participants in the journalist's work process (e.g. editors, directors).

The invited journalists noted the important nuances of student education, taking into account the dynamics of the information flow and its impact on the public. Journalists and teachers mutually agree on the need for more time for students' practical work, learning the skills to distinguish information and create it, taking into account a number of factors. The use of case technologies in teaching seemed to have stirred a strong interest in students, to solve problems, and to contribute to the development of skills for work. For the formation of media information literacy, however, more attention is needed.

4. Discussion

The study once again shows the need to revise and improve the curriculum for future journalists in higher education institutions (Poplavska et al., 2022). Despite the fact that the current programme was compiled at a fairly high level, the use of case technology classes with the involvement of journalists showed the lack of students' media information literacy skills, and the need for careful selection of topics for classes using case technologies. Case technologies are effective for developing practical skills in future journalists, and evaluation by teachers and journalists separately made it possible to study the problems of forming media information literacy during these classes. In general, journalists rated students' media information literacy skills somewhat lower than their teachers. This suggests that existing journalists have more practical experience in their work, and consequently, more requirements for the manifestation of certain skills of media information literacy among students. The situation can be corrected by applying methods for improving the qualifications of teachers (self-study, courses), drawing up training programmes by teachers together with journalists, discussing criteria for evaluating different knowledge and skills of students. Cervi et al (2021) also write about the need to update the content and apply various teaching methods. Also, the results obtained confirm the need to pay more attention to the practical work of students during their studies at a higher educational institution, as stated by Valencia-Forrester (2020). This can be supplemented by the fact that the use of practical and interactive classes is more important in senior courses.

The use of case technology classes with the invitation of acting journalists showed insufficiently developed media information literacy skills of students, and the problems of their formation using this active and effective teaching method. These results can be explained by the peculiarity of the developed programme, which provides for the implementation of a holistic journalistic task – the creation of a report. The use of case technology in the training of future journalists helps in developing the practical skills of students, as well as other active teaching methods. The disadvantages of using this method are the lack of knowledge on conducting classes on case technology, the selection of scenarios taking into account the level of knowledge of students and those that need to be supplemented. This was the result of the low assessment of media information literacy skills among students.

In future research, it is rational to create topics and content of classes that will contribute to a more purposeful formation of media literacy skills, and this requires careful preparation, meetings of teachers and technology developers, editors. This will eliminate the problems of the formation of media information literacy and will allow students to be trained taking into account the requirements for a modern journalist. This topic is continued by Ramírez et al (2020), Chan et al (2021), Tandoc et al (2019) regarding the need to teach students new skills and find effective means to do so. Such classes need to be developed for online and face-to-face learning, which also has many features of different perceptions. Indeed, in full-time work, as in face-to-face training, the same means have an impact on the assimilation of skills and knowledge, while the online format requires a different approach. This continues the results of research on the selection of teaching methods, taking into account its format. Conducted interviews confirmed that media information literacy is critical for the success of future journalists, they need to understand and be able to apply a lot of knowledge to create, present and manage a variety of information (Himma-Kadakas and Palmiste, 2019; Chiu et al., 2020). The work of a journalist has many varieties, and during classes using case technology, you can study, "feel" the features of different work roles (Sidiropoulos et al., 2019). Also, the results of the study confirm the data of Cervi et al (2021) on the inconsistency of the curriculum in a higher education institution with the requirements in the workplace. But this is not a shortcoming of the curriculum, but a lack of application of practical skills, real stories in the educational process, which is successfully levelled by the use of inviting professional acting journalists.

To improve the effectiveness of classes, experienced journalists participated in this study, the results of interviews which show that they have a positive attitude towards the use of such technologies in the educational process of their future employees. According to interviews conducted with them, it is confirmed that employees have to be trained additionally at work, since the curriculum often provides for the development of theoretical material (Hryvko et al., 2020). The use of case technology allows the student to feel like a participant in the process of creating news, and to master the necessary skills for work (Estella, 2021; Guo & Volz, 2021). Also, the use of case technology makes it possible to distinguish the impact of information in different formats, to study different kinds of journalists with the possibility of correction (offline or the possibility of correcting a report before presentation, or live broadcast without the possibility of correction) (Muratova, 2019). The use of case technology allows students to quickly look for solutions to problems, quickly master new technologies, and understand what they need to work on and what to study for effective work and its result (López-García et al., 2017).

The use of active teaching methods contributes to the improvement of students' critical thinking, and media information literacy of a journalist is in many ways the development of critical thinking. The use of case technology creates the need to search, create content, and check sources of information. Also, the use of scenarios for case study technology allows you to develop the necessary skills to work with computer information technologies and apply the developed exercises to verify information in the digital space (Clark et al., 2020; Walker, 2019). As a result of the experiment, the problems of the lack of formation of certain skills of media information literacy among students are highlighted, and this allows you to create new training programmes to correct these problems.

This study is one of the few studies on the use of case studies in general, and in addition, it has made it possible to identify the shortcomings of the use of such studies. But these shortcomings are the result of a lack of experience in using scripted classes, and possibly overly broad topics. Of course, these are scenarios of the real work of journalists, and their application did not imply the development

of media information literacy as the goal of their application. Building a training programme using case technology with a more fractional and consistent selection of topics will level out problems and gradually apply holistic scenarios for the work of a journalist. It should be noted that this study has many limitations, namely: the level of knowledge and skills of the teachers themselves, their ability to conduct classes using case technology, the characteristics of the sample of students (students from Kazakhstan), the training programmes for students of the chosen higher institution before the experiment, the level of knowledge and skills of students in the media information space before the experiment.

5. Conclusions

The experiment showed that case technology classes are very effective for future journalists, but some media information literacy skills need additional classes. Case technology involves the use of a certain scenario and solving the problems that have arisen or its successful completion.

The assessment conducted by teachers and journalists shows that future journalists have an average level of media information literacy skills. The assessment conducted by teachers and journalists shows that future journalists have an average level of media information literacy skills. However, several journalists agreed that methods such as case studies are the best way to understand the development of these skills. Teachers rated the skills of media information literacy among female students at 2.69±0.7, and among male students at 2.94±0.92 out of five points. The journalists rated the skills of the female students at 2.4±0.45, and the male students at 2.69±0.49 points. The least valued skills are identified, on the basis of which the problems of the formation of media information literacy are identified – the lack of knowledge regarding the management and regulation of the media. This skill was rated by teachers and journalists, respectively, at 1.57 and 1.68 points among female students, at 3.54 and 2.11 points among male students. The second problem is the lack of knowledge to identify and manage inappropriate behaviour in all media. This skill was assessed by teachers for female students at 1.74±0.96 points, for male students – at 1.85±1.09 points, journalists rated this skill for female students at 1.84±0.56 points, for male students – at 2.32±0.37 points. Understanding how the presentation of content (style or context) can affect the perception of content is also not highly rated (correspondingly, teachers rated this skill for female students at 1.91±0.78, for male students – at 2.11±0.83; journalists rated this skill of female students as 1.97±0.93 points, male students – by 2.14±0.55 points).

Conducted interviews with teachers show that students easily find information, but do not always check its authenticity, it is difficult to distinguish true information from false information, do not adhere to copyright, journalistic ethics, publication style, and do not always think about the consequences of some reports. The journalists noted the effectiveness of the use of case technology for learning the skills of practical work and agreed with the teachers regarding the problems of forming media information literacy. It is necessary to carefully draw up training programmes, update the training material in relation to the modern requirements of the work of journalists, use a narrow topic of classes (scenarios that will contribute to the formation of a certain skill, and after learning all the skills – a holistic solution to the problem of a journalist), or additional classes (independent or during class time).

6. Co-Author Contribution

There is no conflict of interest in this article. Author 1 and Author 2 were responsible for data analysis and editing. Author 3 contributed to methodology and creating figures. Author4 and Author5 managed the writing of the article.

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