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APPLICATION OF THE OPEN-BOOK EXAM IN THE EDUCATIONAL ENVIRONMENT: ANALYSIS OF THE OPINIONS OF TEACHERS AND STUDENTS

Abstract. The article considers the prospects of using the open-book exam in the educational environment using the example of the Academy of Physical Education and Mass Sports of Astana. The study is aimed at studying the opinions of teachers and students regarding the effectiveness of this form of knowledge assessment. The survey involved 12 teachers of the Department of Physical Education and Coaching, as well as 73 students of the training program "Physical Education Teacher and Sports Coach". The majority of the surveyed teachers (87%) are ready to consider the possibility of using open-book exams, highlighting among the advantages stress reduction (75%), development of critical thinking (50%) and compliance with academic integrity (37%). Students also positively assess the potential of the format: 55% expect a decrease in stress, 66% consider it useful for their future profession. At the same time, 77% of students noted the possibility of maintaining academic integrity when using this format. Particular attention is paid to the analysis of preferred variations of the open-book exam: the majority of teachers (62%) prefer to use their own notes, 37% - educational and scientific literature. The complete refusal to use Internet resources demonstrates a cautious attitude towards digital technologies in the process of knowledge assessment. The data obtained indicate a high potential for the introduction of open-book exams into the educational process of universities of physical education and sports, provided that the methodology and content of examination tasks are carefully developed.

Keywords: open-book exam, academic integrity, student stress, critical thinking, physical education and sports, knowledge assessment, educational process, professional competencies.

Introduction

Modern education is experiencing a period of active changes caused by the rapid development of technologies, globalization and growing demands of the labor market. Today, the emphasis is shifting from mechanical memorization of information to the development of critical thinking, analytical skills and the ability to apply knowledge in practical situations (Mamhusseini, 2020). However, traditional forms of knowledge assessment, such as closed-book exams, often do not meet these new challenges. They focus on memory testing, which creates significant stress for students and does not always reflect their real competencies (Akhtar, 2021).

One alternative approach is to use open-book exams, a format in which participants are allowed to use study materials, notes, or even online resources. This method allows the focus to be on analysis, problem solving, and application of knowledge rather than simply reproducing it (Battaglia, 2019a). Despite the obvious advantages, the introduction of open-book exams raises many questions: how do teachers and students feel about this format.

This format is becoming increasingly popular in global educational practice, but its effectiveness remains a subject of debate. Studying the opinions of participants in the educational process about the role of open-book exams seems to be an important step towards improving modern methods of knowledge assessment.

Methods and materials

To study the topic of using open-book exams, we conducted a survey among teachers and students of the Academy of Physical Education and Mass Sports, Astana, Kazakhstan. A total of 12 teachers of the Department of Physical Education and Coaching, as well as 73 1st and 2nd year students of the 6B01405 Physical Education Teacher and Sports Coach program took part in the survey.

The teachers were surveyed as part of the department's methodological seminar before the start of the third trimester, during which a report on the open-book exam was presented. A similar report was given to students in the first week of training, explaining the course procedure and the syllabus for the discipline being taught. Percentages reflect survey responses without inferential statistical testing.

The familiarization methodology included a historical overview of the development of this format (since 1950) and its use primarily in medical education in the United States. Particular attention was paid to the disclosure of the positive and negative aspects of the format. The advantages included: stress reduction, the ability to create project assignments, and the development of critical thinking. The disadvantages included: the complexity of checking hard skills and the need to carefully study the questions. Two training models were proposed: with limited use of mobile devices and the Internet or with full access to information resources. Potential problems and solutions were described for each model. The methodology concluded with a specific example of an exam question on sports training and a demonstration of possible answers using AI. This clearly demonstrated both the capabilities and limitations of the format.

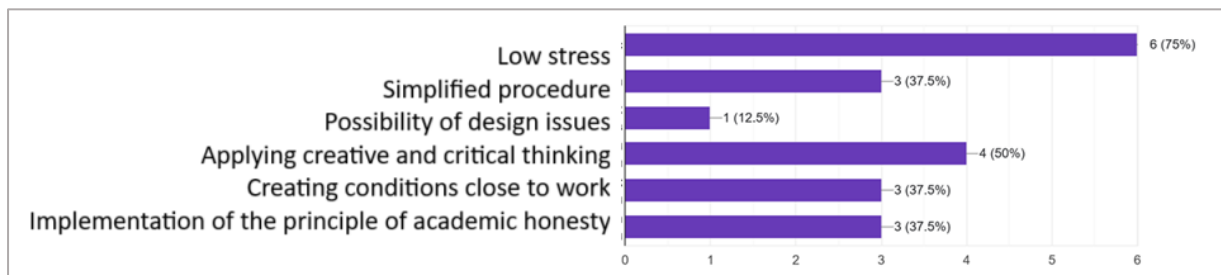
Results and Discussion

Among the teachers of the Academy of Physical Culture and Mass Sports, the majority of respondents (75%) answered that there is a need to improve the forms of conducting examinations, while only one teacher answered that there is no need. In general, the opinion of teachers in an oral conversation showed a desire for something new and a desire to improve the education system. Before the report on the open-book exam form, 37% of teachers knew about the open-book exam form, the remaining 63% learned about it at a methodological seminar.

An important indicator for assessing the need for an open-book exam are the advantages that teachers highlight (Figure 1). Thus, 75% of teachers noted reduced stress as the main advantage of this form of exam. The use of creative and critical thinking was identified as the main advantage by 50% of teachers. 37% of teachers each noted the simplified exam procedure, the creation of conditions close to work, and the implementation of the principles of academic honesty as advantages. And the least advantage of the open-book exam, according to teachers, is the possibility of project questions.

Figure 1

Important advantages of the open-book exam according to teachers.



When identifying the negative aspects of the open-book exam, half of the teachers identified two criteria as the most negative: the lack of testing of one's own knowledge and too lenient assessment conditions (Figure 2). Only 25% of teachers answered that the negative aspect is the contradiction with the principles of traditional exams. Only one teacher noted the complexity of composing exam questions as a negative aspect.

An important indicator is the consent of teachers to use the open-book exam format in their exams (Figure 3). Many teachers (87%) are ready to consider the possibility of using this exam format, while 12% of teachers are not ready to do so. It is interesting that none of the teachers answered unequivocally about their readiness to use the open-book exam format.

Figure 2

Negative aspects of the open-book exam according to teachers

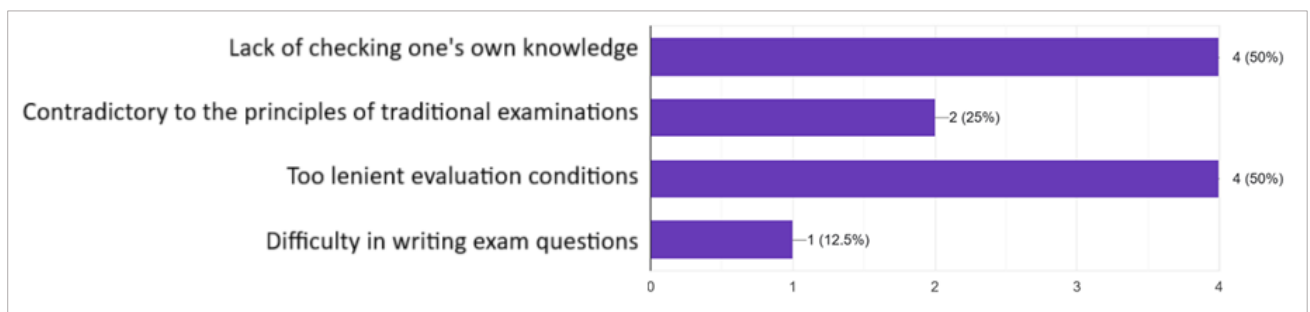
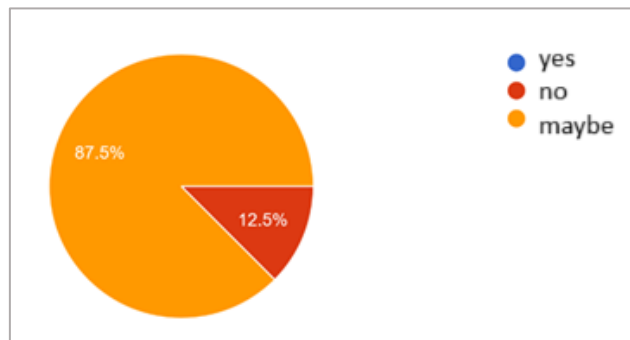


Figure 3

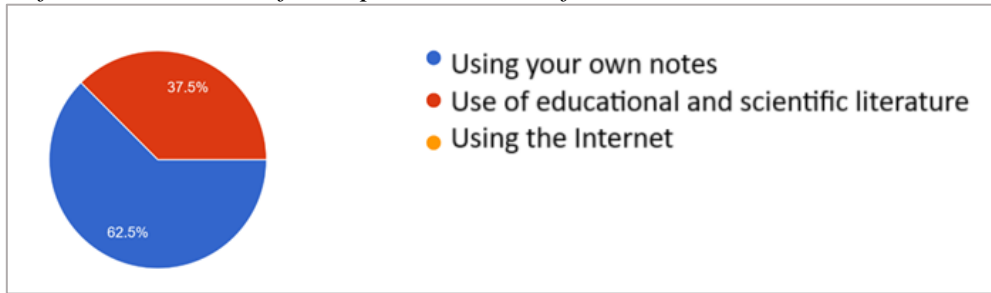
Readiness of teachers to use the open-book exam in their work



When choosing the open-book exam variations, three options were presented: using educational and scientific literature; using one's own notes and using the Internet (Figure 4). Most teachers (62%) chose the exam option using the students' own notes. Using educational and scientific literature in the exam was preferred by 37% of teachers. It is worth noting that not a single teacher accepted the use of the Internet in the exam.

Figure 4

Preferred variations of the open-book exam for teachers

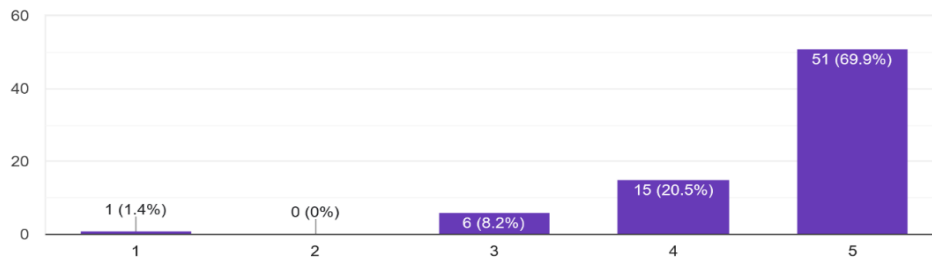


Similar questions were formulated among students of the Academy of Physical Education and Mass Sports, designed to study their opinion about the open-book exam and compare them with the opinion of teachers. After the presentation and explanation of the open-book exam form, 75% of students answered that enough information was provided (5 points). 20% of students rated the report on the exam form at 4 points. Only 8% of students rated the sufficiency of information at 3 points. And only 1 student answered that there was not enough information and rated the report at 1 point.

The question of stress level is key when choosing this form of exam. Students were asked about the expected stress level in the open-book exam (Figure 6). Half of the students (55%) agree with the reduction of stress level.

Figure 5

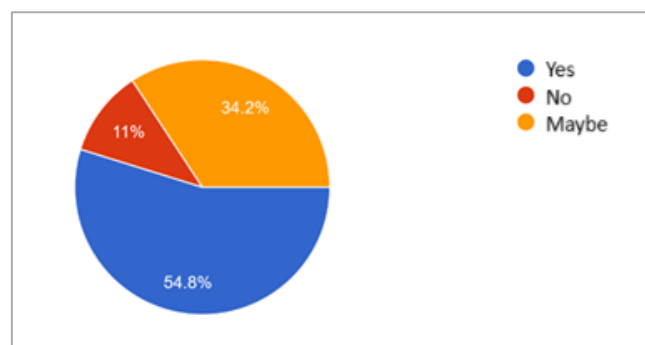
Students' satisfaction with the information provided about the open-book exam format (where 5 is completely satisfied, 1 is completely dissatisfied)



Only 34% of students answered about the possibility of reducing stress. And 11% of students answered that there will be no reduction of stress in the open-book exam form.

Figure 6

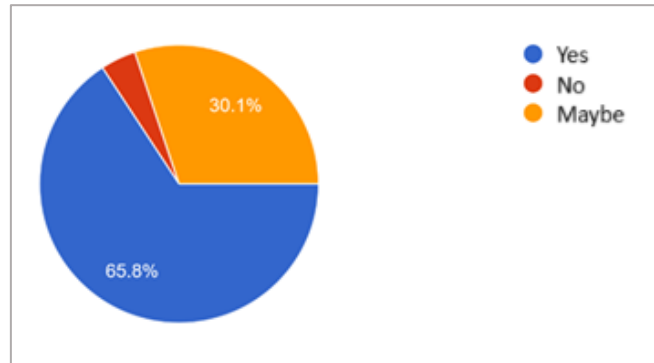
Students' perceived reduction in stress levels during open-book exams



Studying the degree of application of the acquired knowledge and its assessment during the course, we asked students about how much the exam form will help them in their future profession. Most students (66%) believe that the open-book exam form has application in their future profession. 30% of students spoke about the possibility of practical significance of such an exam form. However, 4% of students answered that there is no application of such an exam form in practice.

Figure 7

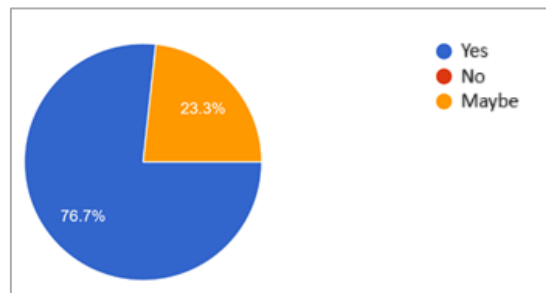
The practical significance of the open-book exam in the future profession



The principle of academic honesty is key when conducting control in universities. Many students (77%) believe that open-book exams allow them to maintain academic honesty, although 23% of students only talk about such a possibility. An important result is the fact that not a single student answered this question negatively.

Figure 8

Students' opinions on compliance with the principles of academic honesty during the open-book exam



During the survey, neither students nor teachers expressed any additional wishes regarding the open-book exam format. No negative opinions were expressed in the oral conversation or additional comments.

The open-book exam has significant benefits for all participants in the educational process. The study showed that 75% of teachers noted stress reduction as a key advantage of the format, and 55% of students confirmed the assumption of less anxiety during such an exam. These data are confirmed by many international studies in various conditions and forms of open-book exams (Davies et al., 2022; Gharib et al., 2012; Ioannidou, 1997).

The development of critical thinking was noted as an important plus by 50% of teachers, which corresponds to modern educational requirements. Students also highly appreciated the practical value of the format - 66% consider it useful for their future profession. It is especially

important that both groups recognized the importance of skills for analyzing and applying knowledge instead of mechanical memorization. This creates a more comfortable and effective educational environment, where the emphasis shifts from memory testing to the development of practical competencies. This opinion is also confirmed by international studies (Battaglia, 2019b; Ioannidou, 1997). In real-life work, physical education and sports specialists are constantly faced with the need to quickly search for and analyze information - from developing training programs to drawing up dietary recommendations. The open-book exam allows you to simulate such professional situations, teaching students to correctly and quickly find the necessary data, critically evaluate their reliability and apply them in specific cases.

When discussing the topic of observing the principles of academic honesty, both groups of participants in the educational process positively assess the possibility of observing academic honesty when using the open-book exam. It is especially indicative that there was not a single negative answer among students on this issue, and teachers included this aspect in the list of advantages of the new format.

The study has a number of limitations associated with the limited sample of participants, which included only 12 teachers and 73 students of one Kazakhstani university, which reduces the representativeness of the results for other areas and specialties. The specifics of the educational field of physical education and sports may affect the peculiarities of the perception of the open-book exam format, which differ from other areas of training. Insufficient information of respondents before the study, their lack of practical experience in using this format and the subjective nature of evaluative judgments could also distort the reliability of the data obtained. In addition, the one-time nature of the study without long-term observation does not allow us to assess the sustainability of the identified trends and their statistical significance. To address these limitations, further research is needed, namely, an experiment with a large sample of students and the presence of control and experimental groups.

Conclusion

The findings of the study indicate a generally positive attitude among both teaching staff and students toward the integration of open-book examinations into the educational process. An overwhelming majority of instructors expressed openness to considering this assessment format as a viable alternative to traditional methods. Participants across both groups consistently identified a key advantage of open-book exams: a marked reduction in examination-related stress compared to conventional forms of assessment.

Furthermore, the open-book format was perceived as conducive to fostering critical thinking and cultivating practical skills in information analysis. A substantial proportion of respondents highlighted its relevance to students' future professional practice, underscoring its applied value. Notably, participants expressed confidence in the feasibility of maintaining academic integrity within this assessment framework. In fact, no student respondents raised concerns regarding breaches of academic honesty in the context of open-book examinations.

With respect to implementation modalities, faculty members demonstrated a clear preference for permitting the use of students' personal notes and prescribed course materials during examinations. In contrast, the inclusion of unrestricted internet resources received limited support among instructors.

The study's results affirm the efficacy of open-book examinations in promoting the development of professional competencies - particularly pertinent for future specialists in physical education and sport. These findings align with international research that associates this assessment format with the enhancement of higher-order cognitive skills and the acquisition of practical competencies.

In light of these outcomes, the adoption of open-book examinations may represent a meaningful advancement in assessment practices, contributing to the modernization of

educational evaluation systems and the overall improvement of educational quality in alignment with contemporary standards for training qualified professionals.

Conflict of Interest Statement

The authors declare no potential conflict interest regarding the research, authorship, or publication of this article.

Author Contributions

Andrey Shunko: Conceptualization, Methodology, Data curation, Writing-Original draft preparation. Zhassyn Mukhambet: Writing-Original draft, Writing-Reviewing and Editing. Daulet Azerbayev: Data Curation.

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