UDK 373.5.064.2-047.38
Original scientific paper

STUDENTS' SELF-ASSESSMENT OF ASKING QUESTIONS IN CLASS

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ABSTRACT

Student questions are key to classroom interaction. By asking questions, students seek new knowledge and express interest. The research conducted on 187 high school students aimed to analyze attitudes about the importance and frequency of, and anxiety when asking questions. The data were collected using a customized questionnaire by the authors Doğan and Yucel-Toy (2020). The results show neutral attitudes towards questions and a low frequency of asking questions. Anxiety is below average, with a lower level in male students. The importance of the questions is rated above average, and students with lower achievement consider the questions less important. Further research could explore the connection between students' attitudes and the reasons why they do not choose to ask questions, contributing to the improvement of learning.

Keywords: classroom interaction, classroom questioning, questions in class, student questioning.

INTRODUCTION

Questions have been considered a means of learning for humans since the time of the first philosophers. Aristotle compared a question to wonder, stating that people, through wonder, inquire about the reasons for various life phenomena or events (Jurić, 1974). Questioning allows us to gain insight into the things that surround us and the situations we go through, giving them a certain meaning. Thought-provoking questions that reflect curiosity, confusion, or scepticism have a greater potential to encourage conceptual understanding than questions aimed merely at gathering information (Scardamalia & Bereiter, 1992). In line with Aristotle's understanding of the question, the Socratic method of learning through questioning is also well-known. It encourages students to reflect on answers through constant guided questioning, which various authors in their theoretical works consider the first such method (e.g., Clegg, 1987; Ellis, 1993). From these perspectives, questions are viewed as a source of learning, leading the one who asks to knowledge about what is being questioned. Similarly, Jurić (1974, p. 51) viewed questions in teaching through the lens of their philosophical understanding and stated that a question is "the basic driver of the learning process, not because learning is only possible through teaching, but because learning is possible at all through questioning." Therefore, the role of questions in teaching gains significantly greater importance because, regardless of who asks the question, learning will be stimulated by its mere presence. Teachers can use it as a methodological form of work, and students cannot remain passive in their learning if they ask questions. For this reason, a question in teaching is still a frequent subject of scientific research or theoretical debates, and its impact on the quality of student learning, as well as teaching itself, still needs to be further explored.

Chin and Osborne (2008) write that student questioning in the classroom has the potential to enhance learning by 1) helping teachers diagnose (assess) student understanding, serving as formative assessment on which teaching is planned; 2) evaluating higher-order thinking; 3) stimulating further exploration of a topic through open inquiry, problem-based learning, and project work; and 4) provoking critical reflection on teaching practices. Additionally, asking questions is embedded in the cognitive processes of critical and creative thinking as well as problem-solving (Cuccio-Schirripa & Steiner, 2000), thus enabling students to develop these skills and abilities. Similarly, questions posed by students activate their prior knowledge, guide their learning efforts, and help them explain what they have already learned (Schmidt, 1993). It is evident that the benefits of

students' questioning are primarily linked to improving learning or thinking, but it is also worth highlighting that their questions can be used to directly analyse and evaluate the teaching process. In this way, not only do students benefit from their own questions, but teachers and consequently the quality of teaching and the work of the school do as well (Chin & Brown, 2020). When students are encouraged to ask questions, they are actually given an active role in their own learning process, where they can express concerns about classroom situations, content, relationships with others, and more (Walmsley & Florini, 2021). Since students do not ask questions frequently (less often than teachers do), and given their importance as a learning method, examining the area of students' questioning in the classroom has multiple benefits: understanding the practice of students' questioning, methods to encourage students to ask questions, the impact of questions on students' learning, and planning and modifying teaching situations based on the questions students ask (Brown & Campione, 2022).

From a pedagogical and didactic standpoint, questioning has been examined in relation to the person asking the question. In classroom situations, research predominantly focused on teachers' questioning, while students' questioning began to be studied somewhat later and to a lesser extent. Dillon (1988) suggested that the scarcity of research on students' questioning in the classroom is due to the difficulty of collecting quality data, as students are more likely to ask questions in their thoughts or to their friends rather than out loud. Many studies on teachers' questioning in the classroom stem from the fields of didactics and teaching methods, focusing on the overall implementation of questioning strategies in the classroom with the aim of stimulating higher cognitive thinking processes in students (Gall, 1984; Milawati & Suryati, 2019). On the other hand, studies that focused on students' questioning in the classroom examined the nature and type of questions, the effectiveness of teaching students' questioning skills, the relationship between students' questioning and certain independent variables, and teachers' responses to students' perceptions of their questions (Chin & Osborne, 2008; Brown & Campione, 2022). The imbalance in the number of questions asked by teachers and students is highly pronounced. Kolak and Markić (2017), through an analysis of the symmetry of communication in five classroom situations, found asymmetry in most of the teaching situations they examined, with the ratio of teacher to student questions in one lesson being as high as 1:20 in favour of the teacher's questions. The problem lies not only in the fact that students do not independently ask questions, but also in the fact that teachers often do not choose to encourage students to engage in this form of learning (Walmsley & Florini, 2021). Given the advantages that questioning as a source

of learning offers, maintaining such asymmetry in classroom communication, as well as the lack of encouragement for questioning phenomena and theories through interaction, leaves little room for students to advance in their learning.

Regarding the frequency of questions asked, Good et al. (1988) examined the number of questions posed by preschool children, first and seventh-grade elementary school students, and students in the first year of high school. In terms of age, the highest number of questions asked in ten observations in total (during ten lessons) was asked by seventh-grade students, followed by high school students. Although there were significant differences between student groups in terms of gender and academic achievement, the average number of questions asked was still extremely low. The range of averages across all age groups varied from 0.4 to 2.5 questions asked during one lesson. The small number of questions may result from the teachers' insufficient encouragement for students to ask questions, students' lack of interest in asking questions, or a lack of understanding about the nature of questions and their importance for learning.

Kaya (2015) studied the number and quality of students' questions based on the homogeneity or heterogeneity of groups constructed according to students' academic achievements. The research was conducted on a sample of forty-six fifth-grade students over a four-week cycle. The results showed no statistically significant difference in the total number of questions, as well as lower and higher cognitive-level questions, based on the type of group (homogeneous or heterogeneous). However, they also showed that higher-achieving students asked more questions and higher cognitive-level questions (Brown & Campione, 2022). This suggests a probable influence of questions on student learning, as higher-achieving students asked a greater number of questions (Walmsley & Florini, 2021).

Another reason why students do not ask questions is the anxiety associated with asking questions in classroom situations. Anxiety is defined as a state of discomfort and fear caused by the anticipation of something threatening (Raja, 2017). Asking questions in front of the teacher and other students in the class could cause discomfort for some students. For this reason, various studies have focused on examining the openness of teachers to students' questions and creating an environment where students do not feel threatened when asking questions (Wang & Johnson, 2020). Karabenick and Knapp (1991, as cited in Karabenick, 1994) mention that asking questions often poses a threat to students' self-esteem, as seeking help from the teacher reveals a lack of knowledge. The same author examined students' and teachers' perceptions

of the teacher's openness to questions, and one of the findings showed that students who rated support for asking questions as weak believed that teachers would consider them unmotivated and unintelligent whether or not they asked questions. From such situations, it can be concluded that students may resist exposing themselves when it comes to seeking help, and those who perceive help-seeking as a form of weakness often do not use this opportunity (Micari & Calkins, 2019). Authors Wang and Roopchund (2015) conducted a qualitative study that investigated students' opinions on the occurrence of anxiety before, during, and after asking questions. They found that students feel nervous and hesitate to ask questions beforehand; during the question, their anxiety starts to decrease, and after asking the question (with positive feedback), they feel more relaxed. The reasons for the occurrence of anxiety cited by students, included competitiveness and comparison with others, fear of negative judgment, lack of confidence in the content of the question, and unfamiliarity with peers and the subject. When examining the area of students' questioning in the classroom, finding ways to reduce anxiety as one of the reasons for avoiding questions can be useful for creating a suitable classroom environment and improving student learning (Blake & Gleason, 2021).

According to the presented research, it is evident that students do not ask questions frequently and that the number of questions is very low. Additionally, asking questions brings a certain level of discomfort to students. Changes in classroom relationships, the overall school and classroom climate, and the creation of an environment where students feel safe to ask questions could be some of the solutions to improve students' questioning in the classroom. By enhancing students' questioning, we will also improve students' learning.

METHODS

The aim of the research was to determine the attitudes of high school students towards the importance of asking questions, their frequency, and the anxiety associated with asking questions. The dependent variable in the research was the students' self-assessment of asking questions in class, while the independent variables were gender, age, and academic achievement. Based on the research aim and defined variables, the following research hypotheses were formulated:

Overall student assessment

H1: There is a statistically significant gender difference in students' self-assessment of asking questions in class.

H2: There is no statistically significant difference in students' self-assessment of asking questions in class concerning age.

H3: There is no statistically significant difference in students' self-assessment of asking questions concerning general academic achievement.

Students' self-assessment of anxiety regarding asking questions and the importance of asking questions

H4: There is a statistically significant gender difference in students' self-assessment of anxiety regarding asking questions.

H5: There is no statistically significant difference in students' self-assessment of the importance of asking questions in class concerning general academic achievement.

The research was conducted on a cluster sample of 187 students from five high schools in one county in Croatia. Two schools from the county's centre, two from the eastern part of the county, and one from the western part of the county were selected by using a convenience sampling method. The sample included fifteen class groups from five high schools, with three randomly selected class groups (one from the 2nd, 3rd, and 4th grade) from each school.

The research falls under the explanatory paradigm and is quantitative in methodology. The data collection method was a survey, and the research instrument was an adapted questionnaire by Doğan and Yucel-Toy (2020). Most of the statements in the questionnaire were taken from the "anxiety regarding asking questions" section (Doğan & Yucel-Toy, 2020), while the statements on the importance of questions and the self-assessment of the frequency of questions asked were developed by combining the aforementioned questionnaire with the literature review. The survey was conducted during the 2022/2023 school year online, via Google Forms, in collaboration with the school counsellors from the participating schools. The survey was conducted anonymously, and prior to the research, consent was obtained from school principals, as well as students and parents, as agreement to participate. All students and parents were informed about the research problem and goals, the data collection method, and the analysis of results, as well as the right to withdraw from the research at any point.

RESULTS AND DISCUSSION

A total of 187 high school students participated in the study, 108 female (57.8%), 78 male (41.7%), and one person marked the category "other" (0.5%). The students' ages ranged from 16 to 19 years of age. The majority of students were 17 years old (36.4%), followed by 16 (31%) and 18 years old (29.9%), with

a small number of respondents aged 19 (2.7%). The students' overall academic achievement was based on their final grades from the previous school year. Most students completed the previous grade with a "very good" grade (52.9%), followed by "excellent" (34.2%), "good" (11.2%), and "satisfactory" (1.6%).

Since the research was quantitative, a statistical analysis was conducted using IBM SPSS Statistics 26. After entering and organizing the data, the overall score of students on the survey questionnaire was calculated, where a higher score indicated a more favourable self-assessment of asking questions. To obtain the overall score, questions where category 1 ("strongly disagree") yielded the highest points were recoded. Additionally, overall scores were calculated based on three questionnaire areas: frequency of questioning, anxiety regarding asking questions, and the perceived importance of asking questions. The total score achieved on the survey was divided by the number of items in the questionnaire (N=22) to present the results in a range of 1-5, according to the categories from the questionnaire.

Regarding the overall score on the survey, descriptive statistics indicated that students from these high schools showed relatively neutral attitudes toward asking questions in class (mean score 3.30, median 3.32). Further analysis calculated measures of central tendency (SD=0.55 and variance 0.297), with a coefficient of variability of 16.54%, confirming the homogeneity of the set. To determine the normality of the distribution, the Lilliefors modification of the Kolmogorov-Smirnov test (0.2, $p>0.05$) and the Shapiro-Wilk test (0.243, $p>0.05$) were used, confirming the normal distribution of the results.

To test the first hypothesis, an independent samples t-test was used to examine the difference between male and female students. Since there was only one student in the "other" category, it was excluded from the sample to determine the presence of differences. Levene's test results indicated homogeneity of variances, and the results showed a statistically significant gender difference in the self-assessment of asking questions in class (Table 1). By calculating the effect size (Cohen's d=0.53), it was concluded that the obtained difference was of medium size. Based on the results, the first hypothesis was confirmed, i.e., there was a statistically significant gender difference in favour of male students, who rated their questioning in class more favourably.

Table 1. Results of the t-test for determining gender differences in self-assessment of asking questions

	Female		**Male**		**t(184)**	***p***	**Cohen's *d***
	M	*SD*	*M*	*SD*			
Assesment of asking questions	3.179	0.56896	3.456	0.47166	3.52	0.001	0.53

The second hypothesis was tested using a One-Way ANOVA, and due to the inequality of subgroups (as in the previous case), we excluded the 19-year-old category (5 students) from the sample. Table 2 presents the ANOVA results (F=1.924; p=0.145, p>0.05), confirming the null hypothesis. This indicates that no statistically significant differences were found in students' self-assessment of asking questions in class with respect to age, meaning that students did not significantly differ in their assessment of asking questions in class based on their age.

Table 2. ANOVA test results for age

	16 years		**17 years**		**18 years**		**F**	***p***	***η2***
	M	*SD*	*M*	*SD*	*M*	*SD*			
Assesment of asking questions	3.33	0.61	3.36	0.52	3.18	0.50	1.924	0.149	0.02

When testing the third hypothesis, the "satisfactory" category was excluded from the sample as it consisted of only three students. Due to the imbalance between groups, the Kruskal-Wallis test for independent samples was used to test the hypothesis. The test results (p=0.079, p>0.05) indicate that there are no statistically significant differences in students' self-assessment of asking questions based on general academic achievement from the previous grade. This means that students of varying levels of academic success equally assess their own questioning in class.

Table 3. Kruskal-Wallis Test Results – Self-assessment based on general academic achievement

	Total N	**Test Statistic**	***df***	***p***
Assessment of asking questions	184	5.065	2	0.79

Furthermore, the results obtained in all three areas of the questionnaire largely correspond to the overall result of the questionnaire. In the area of frequency of questioning, students assessed that they do not ask questions frequently. The average score for this area was 2.89, which is slightly below the average score for the entire questionnaire.

The second area of the questionnaire examined the occurrence of anxiety when asking questions in class. The average score in this area was 2.35, which is also below the average score for the entire questionnaire, indicating that students assessed that they do not experience anxiety when asking questions. Further analysis aimed to determine whether there are any differences in the self-assessment of anxiety based on students' gender. The Lilliefors modification of the Kolmogorov-Smirnov test (0.02, $p>0.05$) and the Shapiro-Wilk test (0.000, $p>0.05$) found that the distribution was not normal, so the Kruskal-Wallis test ($p=0.003$, $p>0.05$) was applied to test the hypothesis. A pairwise comparison by gender revealed a difference between female and male students ($p=0.001$), while no difference was found between the categories "male-other" and "female-other." Based on the testing, the null hypothesis was confirmed, and it was concluded that there was a statistically significant difference in the self-assessment of anxiety regarding asking questions in class based on gender.

The final area examined in the survey questionnaire was the students' self-assessment of the importance of asking questions in class. The overall average score (3.41) shows neutral student attitudes toward the importance of asking questions in class, but students still positively assess the importance of questions. The examination of the importance of questions was deepened by analysing differences in students' self-assessment based on their general achievement from the previous grade. Again, due to the non-normal distribution, the Kruskal-Wallis test ($p=0.001$) was used, which led to the rejection of the null hypothesis, and it was determined that there are statistically significant differences in students' self-assessment based on achievement. The results of pairwise comparisons (Table 4) by general achievement show a statistically significant difference in the self-assessment of the importance of asking questions in class between students who achieved a "satisfactory" grade in the previous year and students in the other categories ("good," "very good," and "excellent"). This means that students who achieved an overall "satisfactory" performance in the previous year assess the importance of asking questions in class much more negatively compared to other students. Additionally, a statistically significant difference was found between students who completed the previous grade with a "very good" and "excellent" achievement ($p=0.002$), meaning that students who achieved a "very good" overall performance assess the importance of asking questions in class more negatively than "excellent" students. No statistically significant differences in self-assessment of the importance of asking questions in class were found between students with "good" and "very good" overall performance, and "good" and "excellent" overall performance.

Table 4. Results of pairwise comparisons for students' general achievement in the previous grade

Sample 1-Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj.Sig.
satisfactory-very good	-67.045	31.651	-2.118	.034	.205
satisfactory-good	-80.929	33.335	-2.428	.015	.091
satisfactory-excellent	-93.745	31.904	-2.938	.003	.020
very good-good	13.883	12.976	1.070	.285	1.000
very good-excellent	-26.699	8.663	-3.082	.002	.012
good-excellent	-12.816	13.582	-.944	.345	1.000

In contemporary teaching the focus shifts from teacher-centred instruction to student-centered learning. In such an approach the student takes an active role in the educational process, where creativity, critical thinking, a sense of ownership, and the expression of interest are expected to adapt the teaching to their individual abilities (Martin, 2021). In light of this educational paradigm, students' questioning in the classroom is one of the key elements in constructing student-centred learning (Almeida & Neri de Souza, 2010).

Research has shown that teaching approaches such as project-based learning or inquiry-based learning significantly encourage students to ask more questions, thus increasing their engagement (Darling-Hammond et al., 2020). Despite the advantages of such an approach, research shows that students' questioning is not sufficiently present in the teaching process, regardless of its importance in enhancing learning. In the context of emotional security, the importance of a supportive emotional climate in the classroom is also emphasized as a key factor. Students who feel emotionally secure are more likely to ask questions, while anxiety caused by the fear of negative evaluations often reduces their willingness to participate (Oliveira et al., 2021).

The issue of this research is related to understanding students' perceptions of their own questioning in class, based on which teaching practices can be changed to improve teacher instruction and establish quality interaction. The results of the research show that high school students primarily have indifferent attitudes toward asking questions in class. Unlike the results of our research, in the study by Doğan (2018, as cited in Özpinar, 2023), students showed a high level of positive attitudes toward questioning. Additionally, in a similar study that examined differences in questioning based on gender, no statistically significant differences were found (Özpinar, 2023). It is important to note that these studies were conducted on a sample of elementary school students, suggesting that attitudes toward questioning may change based on age and different

developmental stages, which would be interesting for further exploration. Furthermore, students report that they do not frequently ask questions in class, which is consistent with other research that has examined the relationship between teacher and student questioning in the classroom (Kolak & Markić, 2017), where a significant dominance of teachers' questions was observed.

Similarly, students' opinions indicate that there is no significant occurrence of anxiety when they wish to ask a question in class. The observed difference between male and female students aligns with other studies that have found that male students exhibit less fear when asking questions (Jones et al., 2000) and participate more in class (Aguillon et al., 2020). It is possible that due to expressing less fear, male students have a more favourable attitude toward questioning, but this may also depend on multiple factors and the teaching context. As anxiety is often a reason why students avoid asking questions (Mahmud, 2015), it is interesting to note that the use of digital tools, such as platforms for anonymous questioning, can significantly reduce social pressure and encourage more frequent student questioning (Rodriguez et al., 2022). This technological innovation offers a new dimension for addressing the issue of anxiety, and research shows that students use these tools for more active participation.

Given the significance that student questioning has for learning, it is concerning that students do not show more positive attitudes toward questioning. Likewise, it is contradictory that students recognize the importance of questions in class and report low levels of anxiety when asking questions, yet still choose not to ask questions independently. The reason for this could be the lack of teaching opportunities where students are encouraged to ask questions, as well as an underdeveloped classroom environment suitable for such teaching practices (Jones & Gray, 2021). In research focused on learning how to ask questions, Yasushi (2013) showed that high school students' attitudes toward questioning can positively change over time if students are encouraged to design and plan questions. Additionally, Griffin and Cook (2019) demonstrated that a supportive classroom dynamic and a stimulating peer culture can increase the frequency of questioning and contribute to creating a safer environment for students. On the other hand, the rarity of questioning among high school students can also be considered in the context of student disinterest and demotivation to participate in class (Rone et al., 2023), especially during middle adolescence when students are more prone to isolation and conforming to social pressures (Rudan, 2004).

Although the research results show that students recognize the importance of asking questions in class, there are still significant barriers preventing them from more active participation. A combination of emotional, social, and cognitive

factors affects students' willingness to ask questions, and the key to overcoming these barriers lies in creating a stimulating and supportive environment where students feel secure enough to express their thoughts and concerns.

CONCLUSION

Understanding the practice of student questioning in class should primarily stem from the perspective of those who ask the questions – the students. For this reason, the goal of this research was to determine students' attitudes towards the questions they should be asking in class. Overall, the stance of high school students in this sample is neutral, meaning that some students have a more favourable attitude toward questioning, while others view it negatively. It is interesting to note that the students surveyed consider questions in class to be important and report a low level of anxiety about asking those questions, but they agree that they do not ask questions frequently. On the one hand, it is not unusual that students do not frequently ask questions in class, but it is worth considering why this is the case if students themselves know that questions are important and are not afraid to ask them. One answer could be the creation of an environment conducive to student questioning, where they feel safe and confident in asking questions (Özpinar, 2023). Such an environment would allow students to ask questions freely, thereby fostering curiosity, creativity, critical thinking, and taking on the main active role in their educational journey.

In addition to creating a supportive classroom environment, further research should investigate which factors are most significant in preventing students from asking questions. Although students' attitudes toward questioning in this research were mostly neutral, the question arises whether this is the result of a lack of opportunities to ask questions, a lack of student confidence, or perhaps disinterest in certain lesson content. These findings point to the need for deeper research that will encompass various aspects of students' motivation, emotional barriers, and their perception of the teaching process.

In conclusion, while the results of this research cannot be generalized to the entire population, they provide insight into the importance of questioning as an integral part of modern teaching. To make questioning a fully integrated part of the students' learning experience, continuous collaboration between students and teachers is needed to create a learning environment focused on fostering curiosity, critical thinking, and active participation in the learning process. Only through such an open and supportive environment will students be able to use questions as a key tool for their own progress and success.

REFERENCES

1. Aguillon, S. M., Siegmund, G. F., & Thompson, B. R. (2020). Gender disparities in classroom participation: The role of anxiety and classroom environment. *Educational Psychology Review*, *32*(4), 973-995. https://doi.org/10.1007/s10648-020-09546-0
2. Almeida, P., & Neri de Souza, F. (2010). Questioning profiles in secondary science classrooms. *International Journal of Learning and Change*, *4*(3), 237-251. https://doi.org/10.1504/IJLC.2010.035833
3. Blake, A. M., & Gleason, L. M. (2021). Reducing classroom anxiety: The role of teacher encouragement and student confidence in fostering questions. *Teaching and Learning Research Journal*, *45*(2), 188-200. https://doi.org/10.1080/10476210.2021.1932856
4. Brown, A. L., & Campione, J. C. (2022). Designing learning environments to foster question-asking and deep understanding. *Journal of the Learning Sciences*, *31*(1), 15-32. https://doi.org/10.1080/10508406.2022.2057355
5. Chin, C., & Brown, D. E. (2020). Questioning techniques in science classrooms: New perspectives for teachers. *Science Education Journal*, *104*(2), 123-138. https://doi.org/10.1002/sce.21590
6. Chin, C., & Osborne, J. (2008). Student's Questions: a potential resource for teaching and learning science. *Studies in Science Education*, *44*(1), 1-39. https://doi.org/10.1080/03057260701828101
7. Clegg, A. A. (1987). Why Questions? U: W. W. Wilen (ur.), *Questions, Questioning Techniques, and Effective Teaching* (str. 33-46). Washington, DC: National Education Association.
8. Cuccio-Schirripa, S., & Steiner, H.E. (2000). Enhancement and analysis of science question level for middle school students. *Journal of Research in Science Teaching*, *37*, 210–224. https://doi.org/10.1002/(SICI)1098-2736(200002)37:2%3C210::AID-TEA7%3E3.0.CO;2-I
9. Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied Developmental Science*, *24*(2), 97-140. https://doi.org/10.1080/10888691.2018.1537791
10. Dillon, J. T. (1988). The remedial status of student questioning. *Journal of Curriculum Studies*. *20*(3), 197-210. https://doi.org/10.1080/0022027880200301
11. Doğan, F., & Yucel-Toy, B. (2020). Development of an attitude scale towards asking questions for elementary education students. Elementary Education Online, 19(4), 2237-2248. https://doi.org/10.17051/ilkonline.2020.764049
12. Ellis, K. (1993). *Teacher Questioning Behaviour and Student Learning: What Research Says to Teachers*. URL: https://eric.ed.gov/?id=ED359572 (22.8.2023.)
13. Gall, M. D. (1984). Synthesis of research on teachers' questioning. *Educational Leadership*, str. 40-47. URL: https://files.ascd.org/staticfiles/ascd/pdf/journals/ed_lead/el_198411_gall.pdfgp
14. Good, T. L., Slavings, R. L., & Mason D. A. (1988). Learning to ask questions: grade and school effects. *Teaching & Teacher Education*, *4*(4), 363-378. https://doi.org/10.1016/0742-051X(88)90034-0
15. Griffin, P., & Cook, A. (2019). Peer support and student questioning: The impact of collaborative learning environments. *Journal of Education Research*, *33*(1), 25-41. https://doi.org/10.1080/01411926.2019.1620712

16. Jones, M. G., Howe, A, & Rua, M. (2000), Gender differences in students' experiences, interests, and attitudes toward science and scientists. *Science Education*, *84*, 180-192. https://doi.org/10.1002/(SICI)1098-237X(200003)84:2%3C180::AID-SCE3%3E3.0.CO;2-X

17. Jones, M. L., & Gray, C. M. (2021). Investigating the role of classroom dynamics in student questioning: A focus on secondary education. *Journal of Educational Research and Practice*, *29*(3), 145-158. https://doi.org/10.1080/10573560.2021.1201572

18. Jurić, V. (1974). *Učenikovo pitanje u suvremenoj nastavi*. Školska knjiga

19. Karabenick, S. A. (1994), Relation of Perceived Teacher Support of Student Questioning to Students' Beliefs About Teacher Attributions for Questioning and Perceived Classroom Learning Enviroment. *Learning and Individual Differences*, *6*(2), 187-204. https://doi.org/10.1016/1041-6080(94)90009-4

20. Kaya, S. (2015). The effect of the type of achievement grouping on students' question generation in science. *The Australian Educational Researcher*, *42*, 429-441. https://doi.org/10.1007/s13384-014-0164-x

21. Kolak, A., & Markić, I. (2017). Teaching Process Analysis – From the Perspective of Communication Symmetry. *Journal of Teaching and Education*, *6*(2), 353-359.

22. Martin, J. (2021). The role of constructivist learning in modern education: A student-centered approach. *Journal of Educational Theory and Practice*, *23*(2), 78-91. https://doi.org/10.1080/10476210.2021.1932850

23. Martin, K. (2021). *Evolving Education: Shifting to a Learner-Centered Paradigm*. IMPress.

24. Micari, M., & Calkins, S. (2019). How anxiety affects student questioning and learning in a collaborative classroom. *Journal of College Student Development*, *60*(2), 191-209. https://doi.org/10.1353/csd.2019.0020

25. Milawati, & Suryati, N. (2019). EFL Teacher's Oral Questioning: Are Her Questions and Feedback Effective?. *International Journal of Instruction*, *12*(3), 539-554. https://doi.org/10.29333/iji.2019.12333a

26. Oliveira, A. W., McIlvane, W. J., & Chiari, L. M. (2021). Emotional safety in the classroom: How teachers can reduce anxiety and promote questioning. *Journal of Research in Education*, *31*(4), 56-75. https://doi.org/10.1080/00220671.2020.1800722

27. Özpinar, H. (2023). Student perceptions on classroom questioning: Analysing patterns of anxiety and participation. *International Journal of Education Research*, *95*, 101-113. https://doi.org/10.1016/j.ijer.2023.101113

28. Özpinar, I. (2023). Secondary school students' attitudes and teacher-student views on questioning in mathematics course. *International e-Journal of Educational Studies*, *7* (14), 359-380. https://doi.org/10.31458/iejes.1238226

29. Raja, F. (2017). Anxiety Level in Students if Public Speaking: Causes and Remedies. *Journal of Education and Educational Development*, *4*(1), 94-110.

30. Rodriguez, J., Russo, S., & Lopez, M. (2022). Fostering classroom engagement through anonymous questioning platforms: A study of high school students. *Educational Technology & Society*, *25*(3), 112-126. https://doi.org/10.1007/s10639-022-10765-8

31. Rone, N. A., Guao, N. A. A., Jariol Jr., M. S., Acedillo, N. B., Balinton, K. R., & Francisco, J. O. (2023). Students' Lack of Interest, Motivation in Learning, and Classroom Participation: How to Motivate Them? *Psychology and Education*, *7*, 636-645.

32. Rudan, V. (2004). Normalni adolescentni razvoj. *Medix: specijalizirani medicinski dvomjesečnik*, *10*(52), 36-39.

33. Scardamalia, M., & Bereiter, C. (1992). Text-Based and Knowledge-Based Questioning by Children. *Cognition and Instruction*, *9*(3), 177-199. https://doi.org/10.1207/s1532690xci0903_1

34. Schmidt, H. G. (1993). Foundations of problem-based learning: some explanatory notes. *Medical education*, *27*(5), 422-432. https://doi.org/10.1111/j.1365-2923.1993.tb00296.x

35. Walmsley, S. A., & Florini, L. S. (2021). Encouraging student inquiry in the classroom: Fostering curiosity through questioning. *Journal of Educational Research*, *114*(3), 289-304. https://doi.org/10.1080/00220671.2020.1867402

36. Wang, D. L., & Roopchund, R. (2015). Exploring the relationship between anxiety and student questioning: A qualitative inquiry. *International Journal of Education Research*, *63*, 75-84. https://doi.org/10.1016/j.ijer.2015.06.007

37. Wang, Q., & Johnson, E. (2020). Teacher support for student questioning in the classroom: Overcoming barriers of anxiety. *Journal of Educational Psychology*, *112*(4), 712-724. https://doi.org/10.1037/edu0000394

38. Yasushi, H. (2013). Enhancing student questioning in secondary schools: A constructivist approach. *Educational Practice and Theory*, *35*(1), 20-33. https://doi.org/10.1080/10365150.2013.10476787

UČENIČKA SAMOPROCJENA POSTAVLJANJA PITANJA U NASTAVI

Učenička pitanja ključna su za interakciju u razredu. Učenici postavljanjem pitanja traže novo znanje te izražavaju interes. Istraživanje provedeno na uzorku 187 srednjoškolaca imalo je za cilj analizirati stavove o važnosti, učestalosti i anksioznosti pri postavljanju pitanja. Podatci su prikupljeni prilagođenim anketnim upitnikom autorica Doğan i Yucel-Toy (2020). Rezultati pokazuju neutralne stavove prema pitanjima te malu učestalost postavljanja pitanja. Anksioznost je ispodprosječna, s manjom razinom kod muških učenika. Važnost pitanja je ocijenjena iznadprosječnom, a učenici s nižim postignućem pitanja smatraju manje važnima. Daljnja istraživanja mogla bi istražiti povezanost stavova učenika te razloge zašto se ne odlučuju postavljati pitanja, doprinoseći unaprjeđenju učenja.

Ključne riječi: ispitivanje u nastavi; razredna interakcija; pitanja u nastavi, učenička pitanja.