

Why Do Students Prefer Different Question Types?

Nihan Sölpük Turhanⁱ

Fatih Sultan Mehmet Vakif University

Abstract

Measurement tools that are used in education are important factors that affect course success and motivation of students. This study aims to determine the opinions of high school students on different question types. As the subgoals of the research, the study aims to determine the reasons for multiple choice test preference and its effect on learning motivation level according to the grade. Study group consists of 355 students who are 10th, 11th and 12th graders in state schools in Istanbul province center in spring term of 2018-2019 school year. Mixed method and convergent parallel design were utilized for the study. “Academic Motivation Scale (AMS)” that was developed by Bozanoğlu (2004) and “Inventory of Motives to Prefer Written, Short-Answer, True-False and Multiple-Choice Questions (IMP)” that was developed by Eser (2011) were used for data collection in the study. Interview method was utilized to determine the opinions of teachers on test types. Therefore, semi-structured interview form was prepared as a data collection tool. Data analysis was made by using Multivariate Analysis of Variance (MANOVA). As a result, the study found that the motives to prefer multiple-choice questions and averages of learning motivation vary significantly in favor of 10th grade students and final year students in high school. The study revealed that student performance varies by question type. The study also found that multiple-choice questions can be considered as a motivation factor for high school students and a good way of testing the goals and achievements.

Keywords: High School Students, Learning Motivation, Mixed Method, Question Types

DOI: 10.29329/ijpe.2020.248.10

ⁱ Nihan Sölpük Turhan, Assoc. Prof. Dr., Educational Science, Fatih Sultan Mehmet Vakif University, ORCID: 0000-0002-9279-7699

Correspondence: nsolpuk@fsm.edu.tr

INTRODUCTION

Exam is a method that is applied to measure the accumulation of knowledge and development of students in the education process. Nowadays, it has become an obligation in some way and also one of the efficient methods particularly in receiving feedbacks for the results of the education system. Students encounter exams at all stages of their education life beginning from primary school. In addition to this, exams continue for the whole life after university education is complete. For this reason, exams have an important place in people's life. Considering such an important factor in detail, we encounter different types of exams. In a study on students, student motivation is split into four types: external, internal, social and achievement motivation (Jenkins,2001).

Common question types encountered in the education system are classified as written, multiple-choice, open-ended, gap-filling, matching, classification, true-false and short-answer questions. Students may have different opinions on these exam types. According to Kılıç and Çetin (2018), one of the reasons for the students to have different opinions on the exam types is that exam type preferences of students may be affected by the difference in their strengths and weaknesses. Besides, it is emphasized that exam type preferences of students may vary by their understanding of learning or the level of exam anxiety. In addition, success of students is largely attributed to their awareness of their own learning style and being able to direct their learning. While some students think that they express themselves better in open-ended questions, others think that they find the definitive answer in multiple-choice questions. Among such exam types, multiple-choice and open-ended questions come to the forefront.

While students choose the answer among the predetermined options in multiple-choice exam questions, there is no such option for the answer in open-ended questions. The answer totally depends on the knowledge and skills of students. Therefore, differences of opinion particularly on these two types have arisen among the students; while some students turn towards multiple-choice exam type, others consider open-ended questions suitable (Gronlund, 1998). Clarke et al. (2005) began studying the research question "Is there any difference between student preferences and evaluation types?" and verified the fact that there is a significant difference in student preferences and MCQ test is the most preferred option on average.

Academic motivation is an effective factor that determines the determination and energy of the individual, guides their behavior and ensures their continuation (Dunn & Stephens, 1972). They experience difficulties as the negative attitudes and beliefs about learning change in later years. Therefore, the change of motivation for learning at an early age plays an important role (Patrick et al., 2008).

In literature, studies related to exam type preferences (Kılıç, 2016; İlhan Beyaztaş & Senemoğlu, 2015; Bal, 2013; Demir, 2012; Eser, 2011; Büyüköztürk & Gülbahar, 2010; Bayrak, 2007) were found. In the research conducted by Grandt (1987), the gender effect on success in the multiple choice exam type was analyzed. Accordingly, it has been revealed that male students perform better in the multiple choice exam type than female students. Zeinder (1987), in his study on high school students, stated that the students found multiple choice questions more simple, understandable, interesting and fair. In addition, they found that they preferred the multiple choice question type to open-ended questions.

Purpose and Importance of the Study

The purpose of this study is to find out the opinions of high school students on different exam types and reveal the motives of their opinions. In the meantime, the study aimed to determine the motives of high school students to prefer multiple-choice questions depending on their grades and their effect on the level of learning motivation. In order to hold the optimal exam for students, it is important to take their opinions on different exam types and reveal the motives for them. In addition, it

is also important to analyse the motives of students to prefer multiple-choice questions depending on their grades and their effect on the level of learning motivation.

METHOD

Research Model

In this study, the mixed method in which qualitative and quantitative research methods were employed together was used and the study was developed by using convergent parallel design. According to this design, qualitative and quantitative findings were obtained simultaneously in the study (Creswell, 2012). Phenomenological design which is one of the qualitative research methods was used. A study with phenomenological design focuses on the common meaning of the experiences of several people with respect to a phenomenon or concept (Creswell, 2012). Scanning design is used as quantitative research method. According to this design, it is aimed to reveal a situation as is in a study (Karasar, 2000).

Study Group

Study group of the qualitative part of the study consists of 12 high school students in total in the state schools in Istanbul province, Uskudar district; of the students, four are 10th graders, four are 11th graders and four are 12th graders. Of them, five are male and seven are female.

Study group of the quantitative part of the study consists of 355 students in total who are 10th, 11th and 12th graders in the state schools in Istanbul province, Uskudar district. While 80.8% of the students in the study group (287 students) are female, 19.2% of them (68 students) are male. Besides, 23.1% of the students (82 students) are 10th graders, 26.5% (94 students) are 11th graders and 50.4% (179 students) are 12th graders.

Data Collection Tools

In the part where qualitative method is used, semi-structured interview technique was used as a data collection tool. A pilot study was made beforehand and then final interview questions were obtained. Final semi-structured interview questions consist of five open-ended questions, and flexibility is ensured in these questions according to understanding levels of the students. Face-to-face interviews were made with the students, and notes were taken in the interviews with each student. The interviews lasted for about three hours in total.

Semi-structured interview questions are as follows;

1. Do you think that different exam types have any impact on your success? What are the reasons for thinking or not thinking this way?
2. Do different exam types increase your anxiety or excitement? Could you please explain this along with the reasons?
3. Among multiple-choice, gap-filling, true-false, matching, classification, short-answer questions, open-ended question types, which type would you prefer and what is the reason for this preference?
4. Do you think that multiple-choice questions reflect your actual success? Could you please explain the reasons for your positive or negative thought?
5. If you become a teacher in the future, which exam type would you use in the questions you prepare for your students? Why?

Two scales were used in quantitative method part of the study. One of the scales is “Academic Motivation Scale” that was developed by Bozanoğlu (2004). This scale consists of 20 items and 1 reverse item. 5-point likert scale is used for rating, and the rates are as follows: 1= Strongly not applicable, 2= Not applicable, 3=Neutral, 4=Applicable, 5=Strongly applicable. In the studies made on scale reliability, test-retest method in which 101 high school students participate was applied, and the correlation between the two application was found .87 (Bozanoğlu, 2004).

Another scale that was used in this study is the measurement tool ”Inventory of Motives to Prefer Written, Short-Answer, True-False and Multiple-Choice Questions (IMP)” that was developed by Eser (2011) . This tool was used to measure exam type preference levels of high school students and determine the motives. 3-point Likert scale was used for IMP separately for each exam type, and the rates are as follows: (1) Not true for me, (2) Partly true for me, (3) Entirely true for me (Eser, 2011).

Data Analysis

In the qualitative method part of the study, the data that were obtained from the semi-structured interview results were used in data analysis. Descriptive analysis was used for data analysis. In this analysis method, a descriptive analysis was made based on the words and the language used in qualitative analysis (Kümbetoğlu, 2005). The participants in the study group, for instance, were coded as follows: 1st female student was coded as (F, student 1), 2nd male student was coded as (M, student 2). The data obtained from all of the participants were coded in this way and presented in the findings section.

In the quantitative method part, the data were analysed by using SPSS program. Multivariate Analysis of Variance (MANOVA) was used to test if the dependent variables of the motives to prefer multiple-choice questions and the learning motivation vary by the independent variables of grades.

FINDINGS

In this study, the data were obtained and the findings were analysed by using qualitative and quantitative method simulatenously. In this section, the findings that were obtained by using qualitative method were presented first.

In order to obtain findings through semi-structured interview questions; the students were asked “Among multiple-choice, gap-filling, true-false, matching, classification, short-answer questions, open-ended question types, which type would you prefer and what is the reason for this preference?”. The findings of this question are as follows:

“I prefer multiple-choice questions. In such exams, the questions are asked from where I have studied. Besides, the chance to find the correct answer is higher and cheating is easier.” (F, Student 3)

“I prefer multiple-choice exam type most. Because the answer to the questions is written in one of the options and one can easily understand the question. I arrive at answer by ruling out options.” (F, Student 2)

“My preference is multiple-choice type. I can find the correct answer even if I don’t know anything about the question. I turn the wheel and find the correct answer.” (F, Student 5)

“I prefer open-ended type. The reason is that one can get full score by writing what the teacher covered in the class. But we directly lose the full score if we give wrong answer in multiple-choice questions.” (F, Student 8)

"I mostly do well in open-ended exams. I provide all I know for the question, and options don't misguide me." (F, Student 11)

Upon viewing the answers of the students, it was found that the majority of the students prefer multiple-choice exam type. The reason for this is generally attributed to the chance of finding the correct answer even if they do not know anything about the question. Other students prefer open-ended exam type. These students stated that they directly lose the full score when they fail to give the correct answer in multiple-choice questions, but they can get a certain score to the extent of their knowledge in open-ended questions. Some students stated that open-ended exams are easier and they are not torn between two options as in the case of multiple-selection exams.

Another question that was asked to the students is; "Do you think that different exam types have any impact on your success? What are the reasons for thinking or not thinking this way?". The findings of this question are as follows:

"I think question type is highly effective in testing achievement, I cannot fully express my thoughts and knowledge in open-ended questions. But I often do well in multiple-choice exams because of being more comfortable." (M, Student 6)

"I don't think so, people may make mistakes, and may not exactly reflect their knowledge during exam." (F, Student 2)

"I get stressed a lot in multiple-choice exams and all other types of exams. So, it doesn't have any impact." (M, Student 4)

"There is always a chance to find the correct answer in multiple-choice questions. One cannot give any answer to open-ended questions if nothing comes to mind, so it is more stressful." (M, Student 9)

"Yes, my success varies by the type of exam. I get better scores especially in open-ended exams." (F, Student 7)

When the data above were analysed, students were found to state that they are mostly more successful in multiple-choice exams. Some students stated that success doesn't vary by exam types. The students emphasized that all exam types have the same content and cause stress equally.

Another question that was asked to the students is: "Do different exam types increase your anxiety or excitement? Could you please explain this together with the reasons?" The findings of this question are as follows:

"I am mostly more comfortable in multiple-choice exams." (F, Student 5)

"I get panicked in exams regardless of the question type." (F, Student 2)

"I'm afraid of open-ended exam questions. Sometimes, a question looks complicated." (F, Student 8)

"If I know anything about the subject, I can comfortably answer any types of questions." (M, Student 1)

"I get stressed in all exam types, I generally experience exam stress." (M, Student 9)

When the data above were analysed, majority of the students were found to express that different exam types increase their exam anxiety and excitement. Some students stated that their anxiety and stress don't vary by exam types. Other students emphasized the importance of knowledge and stated that there is no need to get stressed as long as the question is known. In addition, the

students expressed that their anxiety and excitement are not related to question types, but “the exam”, and they are excited in all exam types.

Another question that was asked to the students is; “Do you think that multiple-choice questions reflect your actual success? Could you please explain the reasons for your positive or negative thought?” The findings of this question are as follows:

“I think open-ended questions can reveal the actual success. Because, I can express my knowledge and thoughts clearly in this question type.” (F, Student 12)

“I think the speed of reading, comprehension and solving increase as I solve multiple-choice questions. I think it affects success positively.” (F, Student 10)

“Neither actual success nor inadequacies can be revealed only through multiple-choice question type. There must be different question types in exams.” (M, Student 10)

“Open-ended questions may bring actual success. I think there isn’t such opportunity in multiple-choice type.” (F, Student 7)

“Absolutely no. I don’t believe single exam type can reveal actual success.” (F, Student 2)

When the data above were analysed, it was found that while majority of the students stated that multiple-choice questions reflect actual success, others stated that multiple-choice questions don’t reflect actual success.

A different question that was asked to the students is as follows: “If you become a teacher in the future, which exam type would you use in the questions you prepare for your students? Why?” Below are the findings of this question:

“I would use different question types. I would ensure my students to get used to all question types. Besides, preparing different question types would be efficient in better evaluating the knowledge of my students.” (F, Student 5)

“Sometimes, I would mostly prepare open-ended exams in case there might be some students that give wrong answer to multiple-choice questions although they know the subject.” (M, Student 9)

“I would prefer open-ended questions to evaluate the extent of knowledge of students.” (M, Student 4)

“If I were a teacher, I wouldn’t hold an exam by using a single question type. I would use multiple-choice questions for easy subjects and open-ended questions for the hard ones.” (F, Student 3)

“I am mostly comfortable in giving answers to open-ended questions. So I would prepare open-ended questions if I were a teacher.” (M, Student 4)

When the data above were analysed, majority of the students were found to state that they would prepare questions in open-ended type for students if they become teachers in the future. While some students stated that they would hold a type of exam for each grade depending on their level, others stated that they can prepare exams in both multiple-choice and open-ended question types.

The findings that were obtained by using quantitative method in this study are presented below.

In this section, we tested if the motives of the students to prefer multiple-choice exams and their learning motivation vary by grades, and presented the analysis results.

The study hypothesis is “Do problem-solving skills and learning motivation of students regarding multiple-choice exams vary by grades?”. As seen in Table 1, 10th graders have the highest level of problem-solving skills regarding multiple-choice exams ($X=3.60$) in the evaluation that was made by grades. On the other hand, 11th graders were found to have the highest level of learning motivation ($\bar{X}=2.24$).

Table 1 Descriptive Statistics of Scores of the Students by Grades

Dependent Variable	Grade	N	\bar{x}	SD
The motives to prefer multiple-choice exams	10	82	3.60	.434
	11	94	3.56	.409
	12	179	3.47	.418
Total		355	3.52	.422
Learning motivation	10	82	2.31	.253
	11	94	2.24	.292
	12	179	2.23	.288
Total		355	2.25	.283

N: Number of individuals \bar{X} : Average SS: Standard deviation

In table 2, multivariate analysis of variance was used to test if the differences between the averages as a result of the evaluation that was made by grades are statistically significant, and it was found that averages are significantly different from each other (Wilks Lambda (L)=.971, $F=2.559$; $p>.05$).

Table 2 Multivariate Analysis of Variance (MANOVA) Results of the Scale Scores

	Value	F	Hypothesis sd	Error sd	p
Wilks' Lambda	.971	2.559b	4.000	702.000	.038

It was found as a result of the two-way trail analysis in Table 3 that averages of learning motivation vary significantly by grades ($F=3.045$ $p<.001$), and there isn't any significant difference among the averages of the motives to prefer multiple-choice exams by grades ($F=2.462$; $p>.05$).

Table 3 Two-Way Trail Test Results of the Scale Scores

Dependent Variable	Sum of Squares	df	Mean Square	F	p
The motives to prefer multiple-choice exams	1.073	2	.537	3.045	.049
Learning motivation	.390	2	.195	2.462	.087

When the average differences of the motives to prefer multiple-choice exams and learning motivations were analysed by grades according to the multiple comparison test for finding the source of difference among the averages in Table 4, significant differences were found among 10th and 12th graders.

Table 4 LSD Paired Comparison Results Regarding Scale Scores

Dependent Variable	Grade (I)	Grade (J)	Difference of Average (I-J)	SE	p
The motives to prefer multiple-choice exams	10	12	.1266*	.05597	.024
Learning motivation	10	12	.0823*	.03752	.029

* $p<.001$ SE: Standard error

Findings on the correlations among the motives to prefer multiple-choice exams and learning motivations

Results are presented for the Pearson Correlation analysis that was made in order to find if there is a significant correlation among the scores of the motives of the students to prefer multiple-choice exams and their learning motivation.

Positive significant correlations were found among the motives of the students to prefer multiple-choice exams and their learning motivation [$r=.95$].

CONCLUSION AND DISCUSSION

Results of the findings that were obtained from the study fit for purpose. Opinions of the students on exam types were obtained and the motives for these opinions were revealed. Considering in general terms, the students put emphasis on multiple-choice and open-ended exam types. Of these two exam types, they preferred multiple-choice exam type most. However, there isn't any significant difference between the number of students that prefer multiple-choice and open-ended exam types. In addition, high correlation was found between the motives to prefer multiple-choice exams and the learning motivation as a result of the study. The motives to prefer multiple-choice exams and the learning motivation differ among the final year students and 10th graders. The results of this study have parallels with those of the studies in this field. According to Kılıç and Çetin (2010), multiple-choice exam type is used in many important exams in our country. Therefore, multiple-choice is one of the exam types which the students that prepare for such exams are mostly familiar with. This case is considered as one of the motives of students to prefer multiple-choice exams more. Learning approaches can be defined as certain strategies that students adopt for studying and their different learning characteristics. It was found that various tools were developed in order to measure them (Cassidy, 2004). Coffield et al. (2004), emphasized various academic foundations of the study on learning styles. These foundations are grouped in three approaches; theoretical, pedagogical and commercial.

Majority of the students admit the hypothesis that different exam types have impact on their success. Also, most of them stated that their exam anxiety and excitement don't vary by exam types. These students indicated that their anxiety is not related to the exam type, but "the concept of exam" itself. Students feel a certain level of anxiety regardless of exam type, because they feel that they are evaluated in exams. Most of the students stated that multiple-choice exams are not sufficient alone in evaluating their knowledge and skills. But still, they prefer multiple-choice exams for various reasons.

However, there are contradictions between the answers they give as a student and the answers they give when they consider themselves as teachers. Most of the students that prefer multiple-choice exam type stated that they would hold open-ended exams for their students when they become a teacher. Besides, there are also students who think that "they would apply both exam types and hold a different exam type for each grade". When we take into account all of these, the students know which exam types benefit them, but they refrain from such exams. Teachers may explain the qualitative and quantitative characteristics of different exam types to students in order to prevent such negative attitudes towards some exam types. In open-ended questions, teachers may avoid using the question types that may unsettle students, and make evaluations by taking account of their interpretation skills besides measuring their accumulation of knowledge. They can make inferences upon exam evaluations and apply the activities and excercises that are suitable for these inferences in the class. In this way, their problems related to different exam types may decrease by means of improving the skills of students as well as making up the deficiencies in their accumulation of knowledge. In addition, the benefit of multiple-choice question type can be emphasized for the students that refrain from such questions. According to Traub (1990), students take a more positive attitude towards multiple-choice exams compared to free response tests. Because, they think that preparation for these tests is easier, they are easier to solve, decrease stress and anxiety and thus bring them relatively higher scores.

Furnham, Batey and Martin (2011) carried out studies in which multiple-choice exams and continuous assessment methods are preferred by students. They found that these methods promote participation and increase the motivation and learning of students. In addition, Bandarage et al. (2009) stated that multiple-choice exams are the sources of motivation for students in terms of continuous assessment.

While multiple-choice and open-ended exams can be applied, different exam types can also be applied. Every exam type has a purpose of application. Hence, teachers should not limit themselves to a single exam type for their students, they should also apply different types. Thus, target achievements can be measured through different question types.

REFERENCES

- Bal, P.A. (2013). Lisans öğrencilerinin matematik dersine ilişkin değerlendirme tercihleri ile öğrenme stratejileri arasındaki ilişkinin incelenmesi. *International Online Journal of Educational Sciences*, 5(1), 242-257.
- Bandarage, G., Zoysa, M.K., & Wijesinghe, L.P. (2009). Effect of continuous assessment tests with multiple choice questions on motivation for meaningful learning. *In Proceedings of the Annual Academic Sessions of the Open University of Sri Lanka*. 8–10.
- Bayrak, R. (2007). *Ölçme ve değerlendirmenin öğrenme üzerindeki etkisi*. Yüksek lisans tezi, Karadeniz Teknik Üniversitesi, Trabzon.
- Bozanoğlu, İ. (2004). Academic motivation scale: Development, validity, reliability. *Ankara University Faculty of Educational Sciences Journal*, 37(2), 83-98.
- Büyüköztürk, Ş. ve Gülbahar, Y. (2010). Yükseköğretim öğrencilerinin değerlendirme tercihleri, *Eurasian Journal of Educational Research*, 41, 55-72.
- Cassidy, S. (2004). Learning styles: an overview of theories, models and measures. *Educ Psych* 24, 419–444.
- Clarke, D.P., Heaney, J. G., & Gatfield. T.J.(2005). Multiple choice testing: A preferred assessment procedure that is fair to all our business students? *In ANZMAC 2005 Conference: Marketing Education*. 51–57.
- Coffield, F., Moseley, D., & Hall, E., et al. (2004). Learning Styles and Pedagogy in Post-16 Learning: A Systematic and Critical Review. *London: Learning and Skills Research Centre*
- Creswell, J. W. (2012). *Educational Research: Planning Conducting and Evaluating Quantitative and Qualitative Research*. Boston: Pearson Publicatio
- Demir, M. K. (2012). Sınıf öğretmeni adaylarının arasınnav ve dönem sonu sınavları hakkındaki görüşleri. *Ondokuz Mayıs Üniversitesi Eğitim Fakültesi Dergisi*, 31(2), 193-214
- Dunn, D.J., & Stephens, C.E. (1972). *Management of Personel Manpower- Management and Organizational Behaviour*. New York: McGraw Hill Book Co.
- Eser, M. T. (2011). *Examination of causes of some of the factors which affect students' exam type preference*. (Unpublished masters dissertation). Hacettepe University, Ankara.
- Furnham, A., Batey, M. & Martin, N. (2011). How would you like to be evaluated? The correlates of students' preferences for assessment methods. *Personality and Individual Differences* 50, 2 (2011), 259–263.

- Grandt, J. (1987). *Characteristics of Examinees Who Leave Questions Unanswered on The GRE General Test Rights-Only Scoring*. ETS Research Report 87- 83, Princeton, NJ: Educational Teesting Service.
- Gronlund, N.E. (1998). *Assessment of student achievement*. Boston: Allyn and Bacon.
- İlhan Beyaztaş, D & Senemoğlu, N. (2015). Başarılı öğrencilerin öğrenme yaklaşımları ve öğrenme yaklaşımlarını etkileyen faktörler. *Eğitim ve Bilim*, 40(179), 193-216
- Jenkins, T. (2001). *The Motivation of Students of Programming*. Master's thesis. University of Kent at Canterbury.
- Karasar, N. (2000). *Scientific research method (12th edition)*. Ankara: Nobel Publication Distribution
- Kılıç, Z. (2016). *Öğrencilerin sınav türü tercihlerinin çeşitli değişkenlerle ilişkisi*. Yüksek lisans tezi, Hacettepe Üniversitesi, Ankara.
- Kılıç, Z. & Çetin, S. (2018). Examination of Students' Choice of Exam Type in Terms of Various Variables. *İlköğretim Online Dergisi*, 17(2), 1051-1065.
- Kümbetoğlu, B. (2005). *Qualitative methods and research in sociology and anthropology*. İstanbul: Bağlam Press.
- Patrick, H., Mantzicopoulos, P., Samarapungavan, A., & French, B.F. (2008). Patterns of Young Children's Motivation for Science and Teacher-Child Relationships. *The Journal of Experimental Education*, 76(2), 121-144.
- Traub, E.R. (1990). Multiple-Choice vs. free-response in the testing of scholastic achievement. *Ontario Institute for Studies in Education*
- Zeinder, M. (1987). Essay Versus Multiple-Choice Type Classroom Exams: The student's Perspective. *Journal of Education Research*. 80, 352- 358.