

Metaphors on Open-Ended Question and Multiple-Choice Tests Produced by Pre-Service Classroom Teachers

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Abstract

Open-ended exams and multiple-choice exams are two types of examinations that are highly preferred in educational sciences. They have several advantages in terms of their characteristics, and they also have some limitations. These advantages and limitations affect the use of these exams both in national exams and in the exams administered by teachers in their classes. The purpose of the present research is revealing the perceptions of the candidates of the classroom teachers by means of metaphors. The research was carried in accordance with qualitative research methods and designs. The research was designed according to phenomenology. The study group consisted of 355 pre-service classroom teachers. According to the findings of the present research, pre-service classroom teachers produced 240 metaphors related to open-ended and multiple-choice exams. The metaphors produced by the pre-service classroom teachers related to the classical open-ended exams were grouped under 13 categories, while the metaphors for multiple choice exams were grouped under a total of 10 categories. The most frequently used metaphors produced for open-ended examinations were "freedom in answering" (24.5%), "requiring knowledge" (20.4%) and "negative association" (11.2%), while for the multiple-choice exams these were "offering options" (28.8%) and "chance success" (20.4%).

Keywords: Multiple-Choice, Classical Written, Open-Ended Question, Metaphor

Introduction

The main indicator of the extent to which goals are achieved by education is assessment and evaluation. It is important to determine the level at which the goals are achieved and the level of success by education, which is also known as behavior changing process, so that it can guide the educational activities to be planned in the future. Like all educational activities, the basic function of assessment and evaluation is to improve learning and improve the effectiveness of teaching in various ways (Karaca, 2010). Defining which student is unsuccessful or at what level they are successful requires the assessment and evaluation of behavioral changes in the student. In order to make accurate decisions about the students, the correct value judgments about the success of the student should be made. Accuracy of value judgments depends on both accurate assessment and observations and on the conformity of evaluation criteria (Turgut, 1992). There are many ways and methods of assessment and evaluation. This is sometimes done with a homework, a project, a presentation or an examination. Teachers can improve the course they are responsible for if they know how effective a program is, and ultimately, they can make more accurate decisions about the course (Tan, 2008). Teachers determine the preferences of the exam, taking into account the preparation, administration and scoring, while the taxonomic order of the goals, teacher's habits, knowledge and skills are also effective on their examination preferences. The students also may have requests about the types of exams to be made from their teachers for various reasons (chance of success, duration, number of questions, etc.). Two of the traditional assessment and evaluation methods used by Turkish teachers in every level of the education are classical (open-ended) and the multiple-choice exams.

Open-ended question exams

The written exams, which are also known as examinations with open-ended questions, are a kind of examination which

is frequently used in education and in which students are asked to give answers to questions in written form in a period of time they are provided with (Tan, 2008; Tekindal, 2009). Students are required to read and understand the questions they are asked, to think of the answer to the question, find the answer and organize and write this answer in a regular format (Ozcelik, 2010). An open-ended question provides the respondent with freedom to write on the topic of their choice and in the expression of their answer. This freedom the respondent is provided with, is the most important feature of the examinations with open-ended questions. The students are free in their approach to the subject, and determining the degree of importance to be given to each of the points covered in the answer, the selection of the factual information to be used in the answer and in organizing and integrating them (Tekin, 1979). For this reason, open-ended exams are useful tests to assess the student's original and creative thinking power, written expression skills, knowledge, attitudes and they are assessment tools used in every level of education from primary education to higher education (Tekin, 1979; Yılmaz, 2011). The extent of the freedom the respondents are provided with is not the same for every open-ended question. The students may be asked to give a short and precise answer, while at the same time almost unlimited freedom can be given to determine the quality and scope of their answers. Therefore, limited response questions assess the level of knowledge, comprehension and application, while free-responders assess the level of analysis, synthesis and evaluation. The most important advantage of open-ended examinations is that it is a type of exam which is very suitable for assessing complex behaviors (Cambaz, 2000, Tan, 2007). Examinations with open-ended questions can be used to explain relations, to compare two views, to support or reject an opinion, to apply information to new situations, to make a mathematical proof, to explain some scientific facts, to make inferences to analyze, to produce new ideas, to evaluate and to measure skills such as problem solving. Some important limitations are that the reliability of the scoring is low and the number of questions decreases due to the fact that the ma-

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majority of the examination period is allocated to writing, which decreases the scope validity examinations with open-ended questions (Yilmaz, 1996).

Multiple-Choice Tests

Multiple-choice tests are the assessment tools that respondents perform by marking a selection of answers from a set of options. In the multiple-choice tests, the respondent is expected to read the root of the question, to think about the answer and to select and mark the answer from the choices (Çetin, 2008). Multiple-choice tests were first developed by psychologist Edward Thorndike (1874-1949) (Medawela Ratnayake, Abeyasinghe, Jayasinghe, & Marambe, 2011). Multiple-choice tests are the most popular among the testing tools, and the most important reason for being commonly used is that they are easy to score (Ko, 2010; Yaman, 2016). When the person writing the questions for multiple choice tests has sufficient knowledge and skills, or when the tests are well structured, the behaviors at each step of the taxonomy can be assessed except for the skill levels that the students must produce themselves (Turgut & Baykul, 2011; Case & Swanson, 2001). A multiple-choice question consists of three parts: (i) the root involving the question body and the required information; (ii) the correct answer; and (iii) distractors, false answers (Snow, Monk, & Thompson, 1996). Multiple-choice tests are the most commonly used assessment tools in many educational institutions and organizations (from classes to national examinations) due to their advantage in objective scoring. It can be claimed that multiple-choice tests are the only type of exams used in student selection and placement exams, especially for the exams of open education and distance education institutions (Doğan, 2007). In addition, the ease of scoring increases the usefulness of the test and provides fast feedback to teachers and students. This makes multiple choice exams attractive (Lissitz, Hou, & Slater 2012). Multiple-choice tests allow for a large number of questions to be asked since their answering requires a short time, thus increasing the validity and reliability of these tests (Çakan, 2011).

Despite all these advantages, multiple choice tests have some limitations. Writing multiple-choice items is a highly difficult task, requiring specific knowledge and skills, which is also quite time-consuming. One of the most important limitations of the multiple-choice tests is that they are suitable for finding the right answer through guessing (Çetin, 2008; Doğan, 2007; Tan, 2008) and they are also not appropriate to measure the students' ability to put their thoughts at the level of analysis, synthesis and evaluation (Üstüner & Şengül, 2007).

Capturing the pre-service teachers' opinion about exams with open-ended questions and exams with multiple choice-questions

The aim of this paper is to present our research on capturing the pre-service teachers' opinion about the above-mentioned two types of questions in exams: Open-ended and multiple choice. We chose metaphors to accomplish our goal.

A metaphor is a set of words or phrases used to make the desired definition by using the words "like" or "as". In other words, metaphor, which means to express a matter in another way, refers to making an analogy with a linking word that has a different meaning, in order to better explain a concept, word, term or phenomenon (Aydin, 2006). The word metaphor derives from Ancient Greek words "metapherein—meta", which means change and "pherein", which means carrying (Levine, 2005). The concept of metaphor has begun to take place in interdisciplinary applications with the theory called "Contemporary Metaphor

Theory", which the linguist Lakoff and Johnson described in their work published in 1980 titled "Metaphors We Live By". (Cited in: Karaşahinoğlu, 2015). Metaphors are structures used to describe a concept, using other concepts, in order to strengthen expression, to enrich the language and to transform ideas into linguistic actions in the most effective way (Yalçın & Erginer, 2012). Involving metaphors in language contributes to the cognitive and affective development of individuals. Using metaphor can be claimed to be directly proportional to the ability to see the different aspects of concepts (Kart, 2016). Metaphors draw attention as an effective mental mapping and modeling mechanism in line with the understanding and structuring of individuals' worlds (Arslan & Baycan, 2006). Metaphor is an extraordinary issue, a device of poetic imagination and rhetorical development for most people, rather than ordinary language metaphors are also effective not only in language but also in thought and action in everyday life (Lakoff & Johnson, 2003). Metaphors are seen as a cognitive tool for the real-world phenomena of people to filter reality with their mental images (Nikitina & Furuoka, 2008). In this respect, metaphors allow an individual's mind to act from an understanding (comprehension) to another form of understanding (comprehension), allowing an individual to see a particular phenomenon as another phenomenon (Saban, 2008). Research with metaphors in educational cases creates a link between thought and action, because the metaphors reflected by individuals in the texts give consistent clues about their thoughts (Cameron, 2003: cited in Hamarat, 2016). Having these features of metaphors in mind, we believe that metaphors can be used in education to capture the pre-service teachers' thoughts about examination based on open-ended questions and examinations based on multiple-choice questions. As constant structures, metaphors are reflections of an age, a culture, an environment, and convey the actions and thoughts of those who use them (Draaisma, 2014: cited in Hamarat, 2016). Because of these features of metaphors, the present research tries to reveal students' opinions about classical open-ended tests and multiple-choice exams through metaphors. In accordance with this purpose,

Therefore we sought to find answers for the following questions;

1. What are the open-ended exam related metaphors produced by pre-service classroom teachers?
2. Under which conceptual categories can these metaphors be combined in terms of their common characteristics?
3. What are the multiple-choice exam related metaphors produced by pre-service classroom teachers?
4. Under which conceptual categories can these metaphors be combined in terms of their common characteristics?

Method

Research Design

The present research utilizes phenomenological design, which is a qualitative research design. The phenomenological design focuses on the facts that we are aware of but do not have in-depth and detailed understanding. Phenomenology constitutes an appropriate research base for the studies aiming to investigate the facts that we are not completely alien to us and yet we cannot completely comprehend (Yıldırım & Şimşek, 2013). Phenomenological analysis aims to understand and clarify the meaning, structure and essence of a person or a group of people's experiences of a phenomenon (Patton, 2015).

Study Group

One of the difficulties to be experienced in phenomenological research is the selection of the participants. Creswell (2007) draws attention to the fact that the phenomenon should be experienced by all participants in a phenomenological study (Cited in: Akar, 2016). For this reason, the study group of the present research consists of 355 pre-service classroom teachers, studying at the third year of Necmettin Erbakan University Ahmet Kelesoglu Faculty of Education in the Department of Classroom Education between 2014-2018, who took the measurement and evaluation course and therefore knew these types of exams. The data of the research was collected over a 4-year period.

Data Collection

In order to capture pre-service teachers' metaphorical perceptions of open-ended question and multiple-choice question tests, they were provided with a form, and they were asked to fill in the statements of "Classical open-ended question test is like ..., because ..." and "Multiple-choice test is like ..., because ..." in this form, and submit their forms within a week. These metaphors written by the participants with their handwriting were used as the main data source in the present research.

Data Analysis

In the analysis of the data obtained in the present research, content analysis was used. The main purpose of content analysis is to find the concepts and relations that can explain the collected data. The fundamental process in content analysis is bringing together similar data within the framework of certain concepts and themes and interpreting them by organizing them in a way that the reader can understand (Yıldırım & Şimşek, 2013). The metaphors developed by the participants were arranged according to the analyses in Saban's (2008-2009) studies and were carried out in 3 stages.

Coding and sorting stage. At this stage, data collected from 355 pre-service classroom teachers during 4 years were carefully read one by one and 55 of them were eliminated because they were not correct or missing due to different understandings and interpretations. The research continued with the coding and numbering of the data collected from the remaining 240 pre-service classroom teachers.

Categorization stage. The categories started to be formed based on the coding of data and each metaphor was collected under a category. Categories with similar names are placed below the appropriate categories according to the explanations given in the "because..." part.

Validity and reliability stage. In order to ensure the reliability of the research, all of the data were collected after the pre-service teachers took the assessment and evaluation course and they had sufficient knowledge about the types of exams. Forms collected from participants were numbered and all stored. The coded data was re-checked by a faculty member and a teacher and suitability of the categories was ensured. The reliability of the study was tested by using the formula (Reliability= consensus / consensus + disagreement X 100) of Miles and Huberman (1994: 64). In qualitative studies, the desired level of reliability is ensured in cases where the compliance between expert and researcher assessments is 90% or more. In the present research, a 92% compliance (reliability) was obtained. In the findings part of the research, the opinions were reflected by making quotations from the metaphors in the frequently repeated categories, using the form numbers (S.1, 2, 3, etc.).

Findings and Interpretation

In relation with the first and second sub-questions of the research, the metaphors produced by the pre-service classroom teachers for classical open-ended question exams and the categories in which these metaphors are collected are given in the table below.

As presented in Table.1, the total of 240 metaphors produced by the pre-service classroom teachers related to the classical open-ended question exams are grouped under 13 categories. Among these categories, most categories (24.5%) were produced related to the freedom in answering feature of open-ended question exams. This is followed by requiring knowledge (20.4%), negative association (11.2%) and written expression skills (10.8%) categories. The least metaphors were produced for number of questions (0.4%) and chance success (0.4%) categories.

Category 1: Freedom in Answering (Independent Answering)

There are 59 metaphors in this category. Pre-service classroom teachers define classical open-ended question exams as freedom in answering (independent answering). The most frequently repeated metaphor in this category was "ocean". The explanations for the metaphors in this category are as follows:

"Classical open-ended question exam is like an ocean, because we have the right to write what is expected from us, our thoughts and interpretations in our answers" (S191).

"Classical open-ended question exam is like a car ride, because as you're the driver you can choose where to go and how to go" (S57).

"Classical open-ended question exam is like the sky, because you can write anything that comes to your mind freely on the paper" (S8).

"Classical open-ended question exam is like a novel, because as a novel tells something in detail, students tell the answer to the open-ended questions in detail" (S40).

"Classical open-ended question exam is like making soup, because you add ingredients to the soup and stir it. In open-ended questions, you add your knowledge and interpretations to the answer and stir" (S60).

Category 2: Requiring Knowledge

There are 49 metaphors in this category. Pre-service classroom teachers define classical open-ended question exams as requiring knowledge. The most frequently repeated metaphor in this category was "cooking". The explanations for the metaphors in this category are as follows:

"Classical open-ended question exam is like cooking, because you can have good results if you have the necessary knowledge and preparation" (S6).

"Classical open-ended question exam is like a quiz show, because we can only answer the question if we have knowledge of it" (S164).

"Classical open-ended question exam is like singing, because you can only sing the songs that you know the lyrics of. If you don't, there is no way you can sing that song" (S12).

Category 3: Negative Association

There are 27 metaphors in this category. Pre-service classroom teachers define classical open-ended question exams as negative associations. The most frequently repeated metaphor in this category was "nightmare". The explanations for the metaphors in this category are as follows:

Table 1. The distribution of “classical open-ended question” related metaphors by categories

Rank No	Categories	f	Metaphors	%
1	Freedom in answering	59	Ocean (3), Car ride (2), Sky (2), Octopus (2), Empty field (2), Tree growing (1), Open sea (2), Swimming (1), Tree roots (1), Ivy (1), Google (1), Open buffet (1), Gossiping (1), Thought Bubble (1), World (1), Play dough (1), Empty painting (1), Improvisation theater (1), Lace-up shoes (1), Career-making (1), Agriculture (1), Blank paper (1), Inflating a balloon (1) Tree (1), Make-up bag (1), Dairy (1), Making music (1), Woman doing make-up (1), Stream (1), Fate (1), Detached house (1), Drink hot water (1), Lottery (1), Novel (1), Newspaper article (2), UFO (1), Making soup (1), Self-catering places (1), Road (1), Novel (1), Balloon (1), Painting (1), Weather forecast (1), Cake (1), Abstract drawing (1), Making material (1), Eliminating the limits of thought (1), Shoes (1), Dining (1) Shopping at the convenience store (1), Halay (1).	24.5
2	Requiring knowledge	49	Cooking (4), Quiz show (2), Singing (2), Drawing (2), Life (2), Teacher (1), Memory (2), Cobweb (1), Chess (1), Car driving (1), Streams (1), Identity (1), Stairs (1), Putting up curtains (1), Bonding a wall (1), Making vegetable soup (1), Salt shaker (1), Playing ney (1) Goggles (1), Blank pages (1), Shared taxi (1), Machine (1), Discovery (1), Chatting (1), Working employees (1), Desert (1), Intelligence games (1), Cooking without recipe (1), Shopping mall (1), Wholesaler (1), Father (1), Car engine (1), Road (1), The cicada and the ant tale (1), Fried meat (1), Deed book (1), Bus (1), School (1), Book (1), Fruit plate (1), Hereafter questions (1)	20.4
3	Negative Association	27	Nightmare (4), Tunnel of horror (2), Boxer (1), Bomb (1), Night terror (1), Swamp (1), Mixer (1), Dark (1), Burst ball (1), Bat (1), Thunderous day (1), Homework novel (1), Separating from girlfriend (1), Agonizing (1), Dreaming (1), Gravestone (1), Monster (1), Hayat (1), Ranger in the funfair (1), Funeral (1), Nightmare (1), Poison (1), Disappointment (1).	11.2
4	Written expression skills	26	Mirror (3), Gossip (2), Crossing a bridge (1), Field (1), Dinner (1), Climbing stairs (1), Driving (1), Brainbox (1), Snowflake (1), Teaching a child their surrounding (1), Pomegranate (1), Lemon (1), Soup (1), Writing an essay (1), Crossword (1), Testimony (1), Making Noah’s pudding (1), Stage (1), Snack aisle (1), Knowing a person (1), Book (1), Clerkship (1) Climbing stairs (1)	10.8
5	Easy to prepare, difficult to score (practicality)	18	Tea (1), Painting (1), Whitewashing (1), Bicycle (1), Long-hair care (1), Making fried eggs (1), Instant soup (1), Driving very fast (1), Spaghetti (1), Cooking contest (1), Bee making honey (1), Technological tools (1), Pearl (1), Plant (1), Forest (1), Cauliflower dish (1), Pilaf (1), A dish of pilaf with stones (1).	7.5
6	Subjective scoring	16	Water glass (1), Binoculars (1), Stand-by objects (1), Sowing seeds in a flower garden (1), Rainbow (1), More than one windows (1), Raindrops (1), Hypocrite (1), Story (1), Teacher with no effect on the class (1), Sapling (1), Mother-in-law (1), River (1), Company employees (1), Food (1), First impression (1).	6.6
7	Requiring analyzing	13	Puzzle (2), Building (2), Pomegranate (1), Russian dolls (1), Geometrical motif (1), Rosery (1), Ice-cream (1), Dominoes (1), Abacus (1), Tailor (1), Building a dam (1)	5.4
8	Answers suiting the question	10	Love (1), Tabula rasa (1), Empty glass (1), Recipe (1), Cooking (1), Playing bingo (1), Trying to grow the ripest watermelon (1), Life (1), School (1), Stomach (1).	4.1
9	Rote memorization	7	School road (1), Memorizing phone numbers (1), Work of art (1), Parrot (1), Encyclopedia (1), Computer (1), Constitution provisions (1).	2.9
10	No choices	6	Mine field (1), A gift from someone (1), TRT (1), Guest dinner (1), Broken tv antenna (1), Male shoes (1).	2.5
11	Uncertainty	6	Easter egg (1), English words (1), A philosophical word (1), Life (1), Joke (1) Chess (1)	2.5
12	Chance Success	1	National lottery (1),	0.4
13	Number of questions	1	Gloves (1)	0.4

“Classical open-ended question exam is like a nightmare, because we want to wake up immediately. We also want classical open-ended exams to go by immediately” (S143).

“Classical open-ended question exam is like a tunnel of horror, because I panic when I see the questions and can’t remember all the answers” (S163).

“Classical open-ended question exam is like a boxer, because the strongest punch to students are thrown by open-ended questions” (S10).

Category 4: Written Expression Skills

There are 26 metaphors in this category. Pre-service classroom teachers define classical open-ended question exams as written expression. The explanations for the metaphors in this category are as follows:

“Classical open-ended question exam is like a mirror, because the students reflect what they know and their interpretations through their own expressions” (S68).

“Classical open-ended question exam is like building, because the students build their answers by organizing their own expressions” (S158).

Category 5: Easy to Prepare, Difficult to Score (Practicality)

There are 18 metaphors in this category. Pre-service classroom teachers define classical open-ended question exams as easy to prepare and difficult to score. The explanations for the metaphors in this category are as follows:

“Classical open-ended question exam is like tea, because you wait for the tea to brew. Similarly, you can write open-ended questions easily, yet the assessment takes time” (S9).

“Classical open-ended question exam is like painting, because we need to spare time to painting if we want to create something good. Open-ended questions need time to score” (S20).

“Classical open-ended question exam is like a bicycle, because they are easy to ride, yet tiring as it requires effort. Similarly,

open-ended questions are easy to write, yet tiring and difficult to score" (S46).

Category 6: Subjective Scoring

There are 15 metaphors in this category. Pre-service classroom teachers define classical open-ended question exams as subjective scoring. The explanations for the metaphors in this category are as follows:

"Classical open-ended question exam is like binoculars, because everyone looking through sees the answers differently. The results may change depending on the examiner or the examinee" (S59).

"Classical open-ended question exam is like a raindrop, because everyone's opinion and answer of the question is different" (S95).

"Classical open-ended question exam is like a story, because some things are certain, yet the liking may differ from person to person. No matter how correct the answer given is, it may not be enough for the examiner" (S144).

Category 7: Requiring Analyzing

There are 13 metaphors in this category. Pre-service classroom teachers define classical open-ended question exams as meronym therefore analysis. The explanations for the metaphors in this category are as follows:

"Classical open-ended question exam is like a puzzle, because we present our fragmental knowledge as a whole as we answer the questions" (S15).

"Classical open-ended question exam is like a pomegranate, because while each aril represents higher-level thinking skills, such as organization, analysis, synthesis and evaluation, the pomegranate as a whole including all these represents the classical open-ended question exam" (S17).

"Classical open-ended question exam is like a geometrical motif, because patterns come together to form motifs. The answers to open-ended questions are also formed this way" (S94).

Category 8: Answers Suiting the Question

There are 10 metaphors in this category. Pre-service classroom teachers define classical open-ended question exams as answers suiting the question. The explanations for the metaphors in this category are as follows:

"Classical open-ended question exam is like tabula rasa, because we can fill in the table if we give suitable answers" (S36).

"Classical open-ended question exam is like the stomach, because we need to send food to stomach that is suitable to our health" (S197).

"Classical open-ended question exam is like life, because we can live the life the fullest when we do good things, just as we can get good scores if we fill the exam paper with suitable answers" (S91).

Category 9: Rote Memorization

There are 6 metaphors in this category. Pre-service classroom teachers define classical open-ended question exams as requiring rote memorization. The explanations for the metaphors in this category are as follows:

"Classical open-ended question exam is like a parrot, because there is no other way but memorizing in order to answer open-ended questions" (S146).

"Classical open-ended question exam is like an encyclopedia, because the answers to open-ended questions are based on rote memorization" (S170).

"Classical open-ended question exam is like a computer, because you have to memorize the information and store it in your memory" (S176).

Category 10: No choices

There are 6 metaphors in this category. Pre-service classroom teachers define classical open-ended question exams relating to their offering no choices. The explanations for the metaphors in this category are as follows:

"Classical open-ended question exam is like TRT, because in the past, everybody had to watch TRT since they had no other choice" (S181).

"Classical open-ended question exam is like a broken TV antenna, because we have to watch just one channel as we have no other options" (S182).

"Classical open-ended question exam is like having dinner as a guest, because you have to accept what is offered with no chance to decline or choosing" (S172).

In relation with the third and fourth sub-questions of the research, the metaphors produced by the pre-service classroom teachers for multiple-choice exams and the categories in which these metaphors are collected are given in the table below.

As presented in Table.2, the total of 240 metaphors produced by the pre-service classroom teachers related to the multiple-choice exams are grouped under 10 categories. Among these categories, most categories (28.8%) were produced related to offering choices feature of multiple-choice exams. This is followed by chance success (20.4%), being made of options (16.6%) and one correct answer (15%) categories. The least metaphors were produced for length of questions (0.5%) and level of difficulty (1%) categories.

Category 1: Offering Choices

There are 69 metaphors in this category. Pre-service classroom teachers define multiple-choice exams as offering choices. The most frequently repeated metaphor in this category was "fork in a road". The explanations for the metaphors in this category are as follows:

"Multiple-choice exam is like a fork in a road, because you encounter cases when you have to make preferences, and you have to choose" (S43).

"Multiple-choice exam is like a menu, because you have to choose between many choices" (S27).

"Multiple-choice exam is like an intersection, because you have to choose a way" (S120).

Category 2: Chance Success

There are 49 metaphors in this category. Pre-service classroom teachers define multiple-choice exams as offering chances. The most frequently repeated metaphors in this category were "game of chance" (7) and "national lottery" (5). The explanations for the metaphors in this category are as follows:

"Multiple-choice exam is like lottery, because if you are in luck, you can find the correct answer" (S93).

"Multiple-choice exam is like a game of chance, because sometimes you cannot know where to find the correct answer. You see, remember, but the rest is luck" (S132).

"Multiple-choice exam is like numerical lottery, because you have the chance to find the correct answer, even if you don't know" (S160).

Table 1. The distribution of “classical open-ended question” related metaphors by categories

Rank No	Categories	f	Metaphors	%
1	Offering choices	69	Fork in a road (4), Menu (2), Intersection (2), Shopping (2), Making combines (2), Wardrobe (2), Healthy diet (1), Making friends (2), Five different houses (1), Marriage show (1), Colorful small lokums (1), Color chosen by the painter (1), Clothing in accordance with weather (1), Rainbow (1), Being choosy in eating (1), Choosing the doctor (1), Balanced diet (1), Crossword puzzle (1), Car ride (1), Getting out of the well (1), Guidance (1), Life (1), Fork with five roads (1), Watermelon (1), Dress liked while shopping (1), Buying shoes (1), Color candy (1), Grocery shopping (1), Picking fruit from tree (1), Fishing (1), Choosing a rose from a rose garden (1), Loves me loves me not (1), Emergency numbers (1), Market shopping (1), Bazaar shopping (1), ÖSS preference period (1), Decisions made in life (1), Picking tomatoes at a grocery (1), Building for sale (1), Market (1), Picking the ripest watermelon (1), Open buffet (1), Listening to music (1), Shoe seller with four options (1), Having to choose between playing and studying (1), Building with five doors (1), Typewriter (1), Picking ingredients for a delicious dish, Bookshelf (1), Buying vegetables instead of fruit (1), Crossroads (1), Finding the good apple among the rotten (1), buying coke (1), Friend (1), Drinking mint and lemon tea when you have the flu (1), choosing a lover (1), choosing a spouse (1), means of communication (1), picking the rotten apple (1), eating (1).	24.5
2	Chance success	49	Lottery (5), game of chance (7), Numerical lottery (4), Dart (3), Betting (2), Wheel of fortune (1), Musical instrument (1), Playing backgammon (1), Playing marbles (1), Elevator (1), Claw machine (1), Surgery (1), Choosing friends (1), Watermelon (1), Billiards (1), Buying melon from the grocery (1), Gift (1), Bus (1), Archery (1), Pasta (1), Daily life (1), Clearance (1), Photo shot (1), A sea where we can dive-in eyes closed (1), Last step to the golden medal (1), Mother (1), A song, the lyrics of which you don't know well (1), Leavening a lake (1), Bazaar shopping (1), Facebook (1), The straight path (1), Dish of nuts (1), Missing pieces of a puzzle (1).	20.4
3	Being made-of choices	40	Life (3), Friend (2), Labyrinth (2), Bag (2), Food (1), Holiday journey (1) Bazaar stand (1), Tree with many branches (1), Life problems (1), Grocery (1), Dart (1), Clothes (1), Open buffet breakfast (1), Car parts (1), Pasta (1), University (1), Web site (1), Key chain (1), Puzzle (1), Chameleon (1), Different paths (1), Typewriter (1), Fridge (1), Keyboard (1), Train (1), Russian roulette (1), Tv channels (1), Tree (1), Women's shoes (1), Five-unit power socket (1), Raffle (1), Foundation (1), Seasons (1), Dish of mixed nuts (1), mixed vegetable pot (1).	11.2
4	One correct answer	36	Love (2), Shooting a basket (2), Crossword (2), elephant trunk (1), shoes with hook and loop fastener (1), Elevator (1), Puzzle (1), Single window (1), Friendship (1), Library (1), Cash register (1), clutch pedal (1), Tea cup (1), Sun (1), Chess (1), Dot (1), Scales (1), Mailman (1), Grandchild (1), Fruit basket (1), Seesaw (1), Critical point (1), Five racing horses (1), Woman wearing no make-up (1), Lock (1), Train ride (1), Radar (1), Contest (1), Zip (1). Forest (1), Locked door (1), Logic (1), Bus stop (1).	10.8
5	Making feel happy and comfortable	18	Exotic mango ice-tea (1), PJ (1), Cotton candy (1), Sleep (1), Having health Check-up (1), Shopping at the market (1), Drinking cold water (1), Bird (1), A sunny day (1), Novel read with interest (1), Meeting the lover (1), Chocolate (1), Solving crosswords (1), Cologne (1), Lover (1), Breathing (1), Etliiekme (quick bread with ground meat layer on top) (1), An old friend we meet (1).	7.5
6	Difficult to prepare, easy to score (practicality)	15	Stuffed vine-leaves (1), Car (1), Composing (1), Karniyarik (split eggplant with meat filling) (1), Building a house (1), Cooking (1), sliding down the slide (1), Tree producing fruit (1), Catching and eating fish (1), Playing the piano (1), Making a cake (1), Bee making honey (1), Potato chips (1), Apple tree (1), Iron (1).	6.6
7	Limited to choices	5	Country (1), Being jailed (1), Multistorey apartment (1), Garden with borders (1), Sea (1).	5.4
8	Meronymy	4	Pomegranate (3), Putting up curtains (1).	4.1
9	Level of difficulty	2	Chameleon (1), Mixer(1).	2.9
10	Length of questions	1	Spring (1).	2.5

Category 3: Being Made of Choices

There are 40 metaphors in this category. Pre-service classroom teachers define multiple-choice exams as being made of choices. The explanations for the metaphors in this category are as follows:

“Multiple-choice exam is like labyrinth, because just like the multiple-choice exam, you have many road options in labyrinths” (S124).

“Multiple-choice exam is like life, because in life we encounter with many options” (S178).

“Multiple-choice exam is like a bag, because there are a lot many options” (S102).

Category 4: One Correct Answer

There are 36 metaphors in this category. Pre-service classroom teachers define multiple-choice exams as having one correct answer. The explanations for the metaphors in this category are as follows:

“Multiple-choice exam is like love, because we find the only correct among many distractor options” (S87).

“Multiple-choice exam is like shooting a basket, because if the ball goes through the basket, you win, if it doesn't, you can win or score. There is only one and certain answer in multiple-choice exams” (S94).

“Multiple-choice exam is like a crossword puzzle, because there is only one correct answer” (S122).

Category 5: Making Feel Happy and Comfortable

There are 18 metaphors in this category. Pre-service classroom teachers define multiple-choice exams in accordance with their feelings. The explanations for the metaphors in this category are as follows:

"Multiple-choice exam is like PJs, because even hearing of it makes you feel comfortable and happy" (S38).

"Multiple-choice exam is like exotic mango ice-tea, because even if you don't know the answer, it is somewhere in front of your eyes. This provides a great relief" (S30).

"Multiple-choice exam is like sleep, because I don't feel stress, and I feel comfortable" (S169).

Category 6: Difficult to Prepare, Easy to Score (Practicality)

There are 15 metaphors in this category. Pre-service classroom teachers define multiple-choice exams as difficult to prepare, easy to score. The explanations for the metaphors in this category are as follows:

"Multiple-choice exam is like stuffed vine leaves, because both take a long time to prepare, and scoring multiple-choice exams takes a very short time just like eating the stuffed vine leaves" (S185).

"Multiple-choice exam is like composing, because composing takes days, but once it is composed, it can easily be sung. Preparing multiple-choice exams is also difficult and time consuming. On the other hand, assessing is easier" (S49).

"Multiple-choice exam is like playing the piano, because learning to play the piano is difficult and time consuming but playing is easy after you learn it" (S97).

Category 7: Limited to Choices

There are 5 metaphors in this category. Pre-service classroom teachers define multiple-choice exams as limited to choices. The explanations for the metaphors in this category are as follows:

"Multiple-choice exam is like being jailed, because you are jailed between choices, which affects your thinking liberty directly" (S151).

"Multiple-choice exam is like a garden with borders, because you have no choices but the offered ones" (S188).

"Multiple-choice exam is like a sea, because seas are limited. We're also limited with choices in what is expected from us" (S193).

Conclusion, Discussion and Suggestions

In the present research, pre-service classroom teachers produced a total of 240 metaphors related to the open-ended question exams. The most frequently produces metaphors by pre-service classroom teachers respectively were; cooking (4), nightmare (4), ocean (3), and mirror (3). These metaphors were collected under 13 categories. Among these categories, most metaphors were produced under "freedom in answering" (24.5%), "requiring knowledge" (20.4%), "negative association" (11.2%) and "written expression skill" (10.8%) categories. The least number of metaphors were under "number of questions" (0.4%) and "chance success" (0.4%) categories. Open-ended question exam related metaphors produced by pre-service classroom teachers for the present research are similar with metaphors produced for the similar studies in the related literature. For this reason, we can claim that pre-service classroom teachers have knowledge of this examination type. Additionally, considering the negative metaphors produced by pre-service classroom teachers on this type of examinations, it can be claimed that this

type is not preferred by them. Kılıç & Çetin (2018) reported in their studies that the more examination anxiety the students had, the less they preferred open-ended questions. This finding is in agreement with the negative association category of the metaphors related to open-ended question exams.

In the present research, pre-service classroom teachers produced a total of 240 metaphors related to the multiple-choice exams. The most frequently produced metaphors by pre-service classroom teachers respectively were; game of chance (7), lottery (5), fork in a road (4), numerical lottery (4), dart (3), and life (3). These metaphors were collected under 10 categories. Among these categories, most metaphors were produced under "offering choices" (28.8%), "chance success" (20.4%), "being made-of choices" (16.6%) and "one correct answer" (15%) categories. The least number of metaphors were under "length of questions" (0.5%) and "level of difficulty" (1%) categories. As can be observed from the metaphors, pre-service classroom teachers tried to define different characteristics of multiple-choice exams by producing different metaphors. 196 of the 240 metaphors were repeated only once. In accordance with these findings, we can claim that multiple-choice exams arouse different feeling and opinions among pre-service classroom teachers. Taking the happy and comfortable feeling category into consideration, we can claim that pre-service teachers have positive feelings about this exam type. Sarigül (2009) reported in their study that multiple-choice exams are well-known by students, and therefore they have positive feelings about this exam type. In their research, Kılıç & Çetin (2018) found that the most preferred exam type by students was multiple-choice exams. Anıl & Acar (2008) reported in their study that the most frequently used traditional assessment tool by classroom teachers was multiple-choice exams. Additionally, the categories formed in the study conducted by Tunç and Uluman (2018) in order to define pre-service teachers' perceptions of multiple-choice exams, were in agreement with the categories formed in the present research, such as chance factor, single answer, and limitations.

In accordance with these findings, we can claim that metaphors produced by pre-service classroom teachers are cognitive tools for presenting their perspectives of these exam types. For this reason, it can be suggested that metaphors can be used a tool to define students' feelings and thoughts about a practice, an incident, a concept and a course, etc.

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