



# Evaluation of Perceptions About Medical Educator and Medical Student Through Metaphors

## Tıp Eğitici ve Tıp Öğrencisine İlişkin Algıların Mecazlar Yolu ile Değerlendirilmesi

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### ABSTRACT

**Objective:** In the study, it was aimed to reveal the mental images of faculty members in different medical faculties regarding the concept of medical educator and medical student through metaphors.

**Methods:** A total of 248 faculty members from five different faculties participated in this qualitative research in phenomenology design. The data were collected with a questionnaire form. Faculty members were asked to describe the medical educator and student with a metaphor and to state the reason for the metaphor they used. The research was conducted on a voluntary basis. Content analysis was made on the metaphors. Ethics committee approval was obtained for the study.

**Results:** Faculty members produced 134 medical educator metaphors. These metaphors were grouped under nine conceptual categories; “source/transmitter of information”; “shaper”; “raiser/feeder/grower”; “guiding/inspiring”; “professional”; “altruist/altruistic/developing identity”; “role model”; “counselor” and “scary” medical educator. One hundred and twenty-nine metaphors developed for medical student were collected under seven categories. The categories of medical students were “recipient/reflector of knowledge”, “the constructor/transformer of knowledge”, “growing/developing”, “processed/valued”, “working/making effort”, “discoverer” and “negatively connotating”.

### ÖZ

**Amaç:** Bu çalışmada, farklı tıp fakültelerindeki öğretim üyelerinin tıp eğitici ve öğrencisi kavramına ilişkin sahip oldukları zihinsel imgeleri mecazlar aracılığıyla ortaya çıkarmak amaçlanmıştır.

**Yöntemler:** Olgu bilim desenindeki nitel olan araştırmaya beş farklı eğitim modeli uygulayan fakülteden toplam 248 öğretim üyesi katılmıştır. Araştırmada veriler bir anket formu ile toplanmıştır. Öğretim üyelerinden tıp eğitici ve tıp öğrencisini bir mecazla tanımlamaları ve kullandıkları mecazın nedenini belirtmeleri istenmiştir. Araştırma gönüllülük zemininde yapılmıştır. Araştırmada öğretim üyeleri tarafından yazılan mecazlar üzerinden içerik analizi yapılmıştır. Çalışma için etik kurul onayı alınmıştır.

**Bulgular:** Öğretim üyeleri kendileri için 134 tıp eğitici mecazı üretmiştir. Bu mecazlar dokuz kavramsal kategori altında toplanmıştır. Bunlar “bilginin kaynağı/aktarıcısı tıp eğitici”, “şekillendirici tıp eğitici”, “yetiştiren/besleyen/büyüten tıp eğitici”, “yol gösterici/ilham verici tıp eğitici”, “profesyonel tıp eğitici”, “özgeci/fedakar/kimlik geliştiren tıp eğitici”, “rol model tıp eğitici”, “danışman tıp eğitici” ve “korkutucu tıp eğitici” idi. Tıp öğrencisi için geliştirilen 129 mecaz yedi kategori altında toplanmıştır. Bu kategoriler “bilginin alıcısı/yansıtıcısı”, “bilginin inşacı/dönüştürücüsü”, “büyüyen/gelişen”, “işlenen/değerlenen”, “çalışan/çaba harcayan”, “keşfeden” ve “olumsuz çağrışım yapan” tıp öğrencisi kategorileri idi.

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**Received:** 07.11.2021

**Accepted:** 04.12.2021

**Cite this article as:** Aytuğ Koşan AM, Baykan Z, Midik Ö, Demirören M, Şenol Y. Evaluation of Perceptions About Medical Educator and Medical Student Through Metaphors. Bezmialem Science 2022;10(5):541-50

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**Conclusion:** It was observed that “traditional” understanding was dominant about learning and teaching among all the medical faculties. Medical educators continue to maintain their traditional educator-centered understanding, despite the paradigmatic transformation in medical education.

**Keywords:** Medical faculty, educator, student, metaphor

**Sonuç:** Tüm tıp fakültelerinde öğrenme ve öğretmeye ilişkin “geleneksel” anlayış hakimdir. Tıp eğitimindeki paradigmatik dönüşüme rağmen, tıp eğiticileri geleneksel eğitici merkezli anlayışlarını sürdürmeye devam etmektedirler.

**Anahtar Sözcükler:** Tıp fakültesi, eğitici, öğrenci, metafor

## Introduction

The metaphor, derived from the word “metapherein” meaning transferring and transmission in Greek, is replacing the normal use of a word with a new usage (1). It can also be defined as a way of expressing a concept or situation with another concept or situation (2). People often use metaphors when expressing their feelings, thoughts, ideas, and suggestions. Metaphors are the language of experiences in terms of giving meaning to individuals’ personal experiences (3,4).

In the field of education, there are various metaphor studies but in the field of medicine metaphor studies are generally related to the perception of the physician but are not related to educational process (5-11).

The role of educator is changing and roles and competencies of medical educator have also been redefined (12). Harden and Crosby (13) defined 12 roles for a good educator. Nikendei et al. (14) defined 13 main themes reflecting the roles of medical educators. In studies, the characteristics of a good medical educator are clinical knowledge, clinical and technical skills, positive relations with students, supportive learning environments, communication skills, enthusiasm/excitement, altruism, intellectual achievement, personal skills and the search for truth, adopting adult learning principles, innovative spirit, and humanitarian behavior (12-22).

In the realization of these defined roles, it is important for trainers to adapt and internalize these roles. Accordingly, it will be valuable to reveal how the medical trainers in our country position themselves as educators. However, there are almost no studies examining the metaphors regarding the concept of students in the field of education. Studies conducted are generally on the positioning of educators in primary education institutions regarding the student (6,23). It is very valuable to understand the perceptions of the trainer towards herself/himself and the medical student in this period, where the necessity of a student-centered educational environment is emphasized more by putting the student first.

In this study, it is aimed to reveal the mental images of faculty members in medical faculties regarding the concept of medical educators and medical students through metaphors.

## Method

This was a qualitative study of the phenomenological type. The study group of the research consisted of faculty members of medical faculty who applied different educational models in the 2016-2017 academic year. While forming the study group,

one of the purposeful sampling techniques, “maximum diversity sampling” was used. It was planned to include twenty lecturers from basic, clinical, and surgical sciences from each university, and a total of sixty lecturers from each. However, at the end of the study, a total of 248 faculty members could be reached; 60 from Selçuk University Faculty of Medicine (student-centered, problem-based, integrated, community-based, elective and systematic education model), 55 from Erciyes University Faculty of Medicine (integrated education model), 45 from Ondokuz Mayıs University Faculty of Medicine [“Problem-Based Learning (PBL)” in the first three years and “Task-Based Learning (TBL)” in the 4<sup>th</sup> and 5<sup>th</sup> years], 42 from Ankara University Faculty of Medicine (systematic and integrated learning including problem-based, community-based, competency-based learning an integrated education model) and 46 from Akdeniz University Faculty of Medicine (student-centered, problem-solving, integrated, community-based, systematic education model with electives). The educational models of these universities were defined as problem-based for Ondokuz Mayıs University Faculty of Medicine, mixed for Selçuk, Ankara and Akdeniz University Faculty of Medicine and integrated for Erciyes University Faculty of Medicine. There was no PBL in Erciyes University Faculty of Medicine. There were different proportions of PBL and other student-centered practices in the curriculum in medical schools that applied a mixed model.

The data collection tool used in the study was a questionnaire form consisting of two parts. In the first part, there were questions about the socio-demographic characteristics of the faculty members. In the second part, faculty members were asked to describe both the medical educator and the medical student with a metaphor and to state the reason for the metaphor they used. For this purpose, they were asked to complete the sentences “Medical educator is like ..... Because .....” and “Medical student is like ..... Because.....”.

The study was conducted on a voluntary basis. The purpose of the study was explained to the faculty members and then they were asked to fill in the questionnaire with their own handwriting. These forms constituted the data source of the research. Content analysis was made through the metaphors written by the academic members in the research. During the data entry, empty forms that did not specify a metaphor, forms that specified metaphor but did not specify a reason, and forms indicating more than one metaphor were not included in the analysis. For these reasons, 17 faculty members’ questionnaires for medical educator metaphors and 33 faculty members’ questionnaires for medical student metaphors were not included in the analysis.

The metaphors that faculty members determined for themselves and students were entered in the Excel program. Among the metaphors listed, it was checked whether there was a distinctly repeating metaphor. During the content analysis metaphors formed by the faculty members were analyzed by two researchers in terms of the subject, source and the relationship between the subject and source. As a result of this examination, metaphors were grouped in nine different conceptual categories for the medical educator and seven for the student, with the collaboration of the two faculty members. In the process of naming conceptual categories, studies that included the definitions of medicine, educators, and students were examined (24-26). As a result of this process, the two researchers reached a complete consensus between them. The alphabetical list of the final conceptual categories and metaphors determined was presented to the opinion of another researcher. Reliability of conceptual categorization was calculated by using the formula = (consensus/consensus + disagreement). The coding reliability was based on a confidence percentage of at least 70% (27). As a result of the calculations made in this study, it was found that there was a consensus of 96.2% in the separation of conceptual categories in medical educator metaphors and 82.3% in student metaphors.

Ethics committee approval was obtained for the study from Selçuk University Faculty of Medicine (meeting date: 22/12/2015; decision number: 2015/20). Written informed consent was obtained from the participants.

## Statistical Analyses

The data were transferred to the SPSS 22.0 package program and the graphics were drawn in this program.

## Results

Of the 248 faculty members participating in the study 54.4% (n=135) were females and 45.6% (n=113) were males. The average age was 46.5±7.2 years. The distribution of faculty members according to their scientific fields and titles is given in Table 1.

## Metaphors Developed for Medical Educator

The 231 faculty members included in the analysis produced 134 medical educator metaphors for themselves. Among these, the most repetitive ones were the master (18), the sun (12), the tree

(9), and the candle (9). Nine conceptual categories determined for medical educator were as follow; source/transmitter of information; shaper; raiser/feeder/grower; guiding/inspiring; professional; altruist/altruistic/developing identity; role model; counselor and scary medical educator. The metaphors produced by the faculty members for the medical educator are shown in Table 2.

There were 26 metaphors in the category of medical educators as the *source/transmitter of knowledge*. Of the faculty members (60 faculty members) 26.0% uttered a metaphor in this group. The most frequently repeated metaphors were the master, the tree, and the book: “The medical educator is like a *master*. Because he transfers his knowledge and experience to his future colleagues.”, “The medical educator is like a *tree*. Because it will convey its knowledge to all students with its branches.” and “Medical educator is like a *book*. Because it contains a lot of information.”

There were 16 metaphors in the category of *shaper medical educators*. The most frequently repeated metaphors were sculptors, craftsmen, and artist. Of the faculty members (19 faculty members) 8.2% uttered a metaphor in this group: “The medical educator is like a *sculptor*. Because it shapes the student.”, “The medical educator is like a *craftsman*. Because craftsmen are like a gem. It processes other ores.” and “Medical educator is like an *artist*. Because he is like an actor who appears on the stage and shapes people, while he is raising a physician for six years by giving lectures”.

Ten metaphors were produced under the category of “*raiser/feeder/grower medical educator*”; soil, gardener, and water metaphors were mostly written by faculty members. Of the faculty members (23 faculty members) 10% wrote a metaphor from this group: “Medicine educator is like *soil*. Because it grows, feeds, yields.”, “The medical educator is like a *gardener*. Because he grows flowers.” and “The medical educator is like *water*. Because it feeds, grows, cleans, and refreshes.”

In the *guider/inspiratitor medical educator* category, 33 metaphors belonging to 68 (29.4%) faculty members were produced, and under this category, the metaphors of the sun, candle, lantern, and compass were most frequently repeated. “The medical educator is like the *sun*. Because it guides and helps to direct.”, “The medical educator is like a *candle*. Because it melts itself, but reflects its light to those around it.”, “The medical educator is like a *lantern*. Because it shows the way.” and “The medical

**Table 1.** Distribution of faculty members according to their scientific fields and titles

Scientific field	Titles				Total n (%)
	Professor	Associate professor	Doctor lecturer	Other	
Basic science	38	29	17	2	86 (35.1)
Internal science	46	33	15	3	97 (39.6)
Surgical science	21	21	18	2	62 (25.3)
Total*	105	83	50	7	245 (100.0)

\*One person did not specify his/her title; two did not specify the department they work in

**Table 2.** Metaphors of the faculty members for “medical educator”

Category	
<b>Source/transmitter of Information</b>	<b>Master (18), Tree (9)</b> , Book (6), Teacher (3), Encyclopedia (2), Flower (2), Hose (1), Transcription factors of genes on DNA (1), Library (1), Poet (1), Tap (1), Packer (1), Explorer (1), Ballpoint pen (1), Great plane (1), Emitter (1), River (1), Ocean (1), Spring (1), Jug (1), Water tank with fountain (1), Wise (1), Taxpayer (1), Composer (1), Stream (1), Hose irrigating the garden (1).
<b>Shaper</b>	Sculptor (2), Craftsman (2), Artist (2), Dough kneader (1), Sculptor (1), Painter (1), Mozart (1), Pottery (1), Brush (1), Clay artist (1), Artist (1), Cook (1), Paint on the painter's palette (1), Iron beater (1), Blacksmith (1), Tailor (1).
<b>Raiser/feeder/grower</b>	Soil (5), Gardener (4), Water (4), Fruit grower (3), Sheep (2), Oak tree (1), Auto mechanic (1), Rain (1), Drop of rain (1), Fire (1).
<b>Guider/inspirator</b>	<b>Sun (12), Candle (9)</b> , Lantern (4), Compass (4), Lighthouse (3), Locomotive (3), Bulb (2), Philosopher (2), Coach (2), Navigation device (2), Ship captain (2), Captain (2), 360-degree rotating lamp (1), Leader (1), Wind (1), Virtuouse (1), Road guide (1), Moon (1), Light source (1), Basketball coach (1), Power plant (1), Light (1), Coach (1), Torch (1), Guidewire (1), Rainbow (1), Comedian (1), Guide (1), Luck necklace (1), Path (1), Star (1), Unlocking master (1).
<b>Professional</b>	Conductor (3), Chameleon (2), Donkey (2), Science (1), Don Quixote (1), Medicine Cabinet (1), Sunflower (1), Pansy (1), Tortoise (1), Monkey (1), Hamal (1), Swiss Army knife (1), Clown (1), Rodeo player (1), Wizard (1), Manager (1), Watermelon (1), Fruit (1), Clock (1), Patience (1), Tante shaped robot (1), Waterdrop dripping on the soft rock (1), Bee (1), Cloud (1), Sea (1), Ostrich (1), World (1), Update is always on a program (1).
<b>Altruist/devoted/developing identity</b>	Parents (6), Mother (4), Head of the family (1), Kartal (1), Gift (1), basic (1), General donor (1), Professional parent (1).
<b>Role model</b>	2nd parent (1), Parent teaching to walk (1), Computer programmer (1), Parent (1), Mirror (1), Model (1), High expectant parent (1), Example (1), Group leader holding a torch (1).
<b>Counselor</b>	Owl (1), Call center (1).
<b>Scary</b>	Dictator (1), Steroid (1).

educator is like a *compass*. Because it makes the student find his way through difficulties.”

The most written metaphors in the *professional medical educator* category were the conductor, the chameleon, and the donkey. In this category, there were 28 metaphors belonging to 32 faculty members (13.8%): “A medical instructor is like a *conductor*. Because he coordinates the students who are like talented orchestra members who play different instruments and produce excellent works.”, “The medical educator is like a *chameleon*. Because it has to change shape according to the student profile. Otherwise, it cannot reach the same level of education and training for every student. Adjusting to the student and approaching him from the frequency of empathy is the shortest and easiest way to reach the goal.” and “The medical educator is like a *donkey*. Because it is a cute animal, it can be used for any job and any job can be undertaken with it.”

In the *altruist/devoted/developing identity medical educator* category, 8 metaphors belonging to 16 faculty members (6.9%) were produced and the most frequently repeated metaphors were parents and mothers: “Medical educator is like *parent*. Because he keeps trying to entrust the young people to whom he will entrust his future.” “The medical educator is like a *mother*. Because she is loving and giver.”

In the *role model medical educator* category, nine faculty members (3.9%) produced nine metaphors: “Medical educator is like a *computer programmer*. Because he is a good role model, loving and giver.”, “The medical educator is like a *parent*. Because he is a role model.” and “Medical educator is like a *model*. Because with his attitude in basic medicine and his approach to the patient

in the clinic, he is a role model for the assistants and medical students he has trained with the treatment methods.”

Owl and call center metaphors were included in the *counselor medical educator* category produced by two faculty members (0.9%): “The medical educator is like an *owl*. Because all his experiences have given him the role of a wise consultant in the medical field.” and “The medical educator is like a *call center*. Because students call their instructors whenever they have difficulties, or whenever they have trouble.”

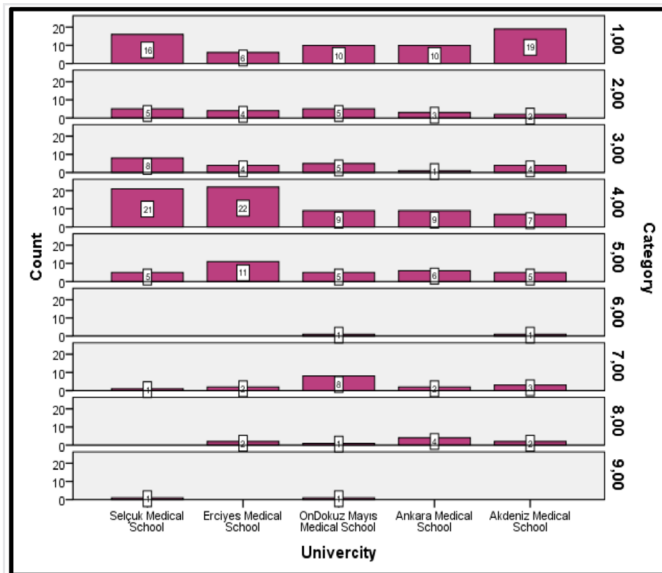
In the *scary medical educator* category, two metaphors (steroid and dictator) were produced by two faculty members (0.9%): “The medical educator is like a *dictator*. Because he doesn't listen to the student.” and “A medical trainer is like *steroids*. Because it is beneficial and suppressive at the same time. Its dosage should be adjusted well.”

Distribution charts of metaphor categories of medical educators according to universities, gender, and field of science are given in Figures 1, 2, and 3.

It was observed that the guiding/inspiring medical educator category was more frequent in Selçuk and Erciyes Medical Faculties and in Ondokuz Mayıs, Ankara and Akdeniz Medical Faculties the category of the source/transmitter of knowledge medical educator was more frequent.

Male faculty members wrote more about metaphors in the guider/inspirator medical educator category, on the other hand, female faculty members wrote more about the metaphors in the category of the source/transmitter of knowledge medical educator.





1. source / transmitter of information medical educator, 2. shaper medical educator, 3. raiser/feeder/grower medical educator, 4. guiding / inspiring medical educator, 5. professional medical educator, 6. scary medical educator, 7. altruist / altruistic / developing identity medical educator, 8. role model medical educator, 9. counselor medical educator

**Figure 1.** Distribution of medical educator categories by universities

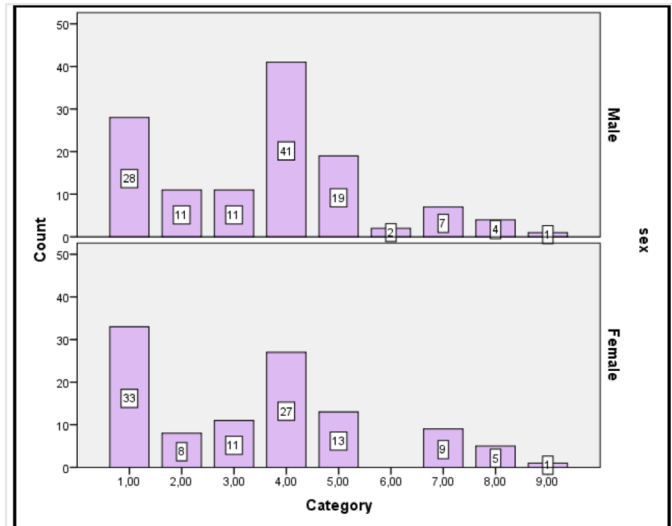
Faculty members working in the field of basic and internal medicine used metaphors in the guiding/inspiring medical educator category and faculty members in the field of surgery members mostly mentioned the metaphors in the category of source/transmitter of information.

### Metaphors Developed for Medical Students

Two hundred fifteen faculty members produced 129 metaphors for medical students. The most repeating ones among these were the apprentice (18), the sponge (10), the seed (9), and the bee (9). Seven conceptual categories were determined for the student: “recipient/reflector of knowledge”, “the constructor/transformer of knowledge”, growing/developing, “processed/valued”, “working/making effort”, “discoverer” and “negatively connotating”. The metaphors produced by the faculty members for “medical students” according to the categories are shown in Table 3.

There were 31 metaphors in the *recipient/reflector of the knowledge* category. The most frequently repeated metaphors by 47 faculty members (21.9%) were the sponge, canvas, and the moon. “Medical student is like a *sponge*. Because he must take the information given to him intensely.”, “Medical student is like a *canvas*. Because each medical educator reflects his own art on this canvas with his own interpretation. Finally, work is completed that neither of them would know exactly how it would be in the first place.” and “A medical student is like the *moon*. Because it reflects the information it collects when the time comes.”

There were 14 metaphors in the *constructor/transformer of the knowledge* medical student category. The metaphors under this category were (6.5%): “The medical student is like a *cargo ship*



1. source / transmitter of information medical educator, 2. shaper medical educator, 3. raiser/feeder/grower medical educator, 4. guiding / inspiring medical educator, 5. professional medical educator, 6. scary medical educator, 7. altruist / altruistic / developing identity medical educator, 8. role model medical educator, 9. counselor medical educator

**Figure 2.** Distribution of medical educator categories by gender of faculty members

because carrying tons of information on his back, dealing with the many challenges he faces in deserted oceans. He has to deliver the right cargo to the right address on time.” and “A medical student is like *kidney*. Because he filters the knowledge and skills coming from his professors and other sources, keeps what he thinks will be needed in exams, and in his future life, he throws away what he considers unnecessary.”

Under the *growing/developing* medical student category, there were 29 metaphors produced by 73 faculty members (33.9%). The apprentice, seed, flower and sapling metaphors were the most written ones by faculty members: “A medical student is like a *seed*. Because it is a useful and beautiful end product.”, “A medical student is like a *flower*. Because as he gets information, it develops and grows.” and “The medical student is like a *sapling*. Because he is ready to grow and develop.”

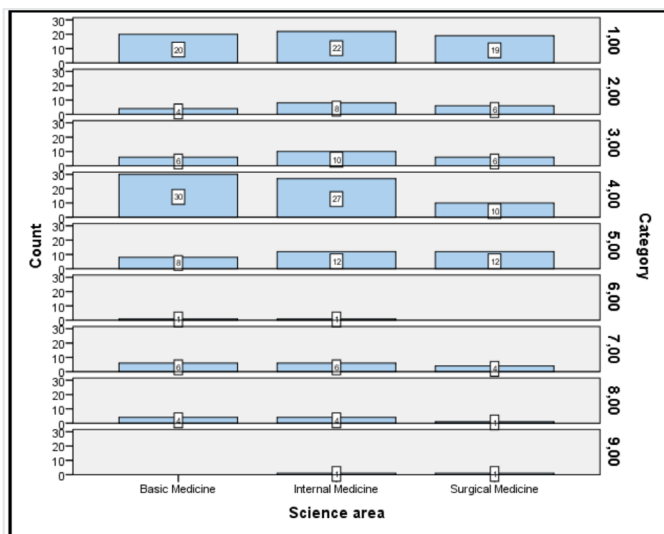
In the *processed/valued* medical student category, 21 metaphors were produced by 33 faculty members (15.3%), and under this category, the metaphors of dough, ore and diamond were most frequently repeated: “Medical student is like *dough*. Because how you knead and shape, it will take that shape.”, “A medical student is like a *ore*. Because it has many valuable aspects. It is open to processing and development” and “A medical student is like a *diamond*. Because it is valued as it is processed.

The most frequently written metaphors in the *working/making effort* medical student category were bee and ant. Thirty one faculty members (14.4%) produced a total of 17 metaphors: “Medical student is like a *bee*. Because it works hard.” and “The medical student is like an *ant*. Because it always works.”

In the *discoverer* medical student category, 5 metaphors were produced, and the most frequently repeated ones were explorer and traveler. Ten faculty members (3.2%) selected a metaphor

**Table 3.** Metaphors of faculty members for “medical students”

Categories	
<b>Recipient/reflector of the knowledge</b>	<b>Sponge (10)</b> , Canvas (3), Moon (3), Satellite receiver (2), Rainbow (2), Shoes (1), Computer (1), Dark (1), Painting canvas (1), Chest (1), Product (1), A page with random doodles (1), Heavy worker (1), Empty barrel (1), Empty jar (1), Chameleon (1), Bowl (1), Bottomless well (1), Receiver (1), Earth's moon (1), Planet (1), Hard disk (1), Scout (1), Paper boat (1), Mirror (1), Container (1), Hurricane hose (1), Match (1), Duckling (1), Tin (1), Honey does not make bee (1).
<b>Constructor/transformer of the knowledge</b>	Cargo ship (1), Yılık horses (1), Standing library (1), Neurons open to knowledge and learning (1), Unfinished novel (1), Kidney (1), Mill (1), Ship (1), Sun energy (1), Orchestra (1), Digestive system (1), Socrates students (1), Water (1), Poetry reader (1).
<b>Growing/developing</b>	<b>Apprentice (18)</b> , <b>Seed (9)</b> , Flower (6), Sapling (6), Child (4), Baby (4), Kid (2), Fertile soil (2), Sunflower (1), Kindergarten student (1), Sunflower (1), Plant (1), Newborn baby (1), Egg (1), Bird getting ready to fly from the nest (1), Plant seed (1), Branch (1), Sapling branch (1), Fish grown in the pond (1), Ear of wheat (1), Fruit (1), Minute hand (1), Fruit tree sapling (1), Sweet flower (1), Flower in a pot (1), Fresh willow branch (1), Newborn (1), Nestling bird waiting (1), Child learning to walk (1), Sculpture material (1).
<b>Processed/valued</b>	Dough (8), Ore (4), Diamond (2), Gold (1), Silver (1), Soft rock (1), Carbon (1), Rug (1), Yeast dough (1), Earth (1), Ready-to-knead dough (1), Paper (1), Marble to be turned into a sculpture (1), Precious silk cloth (1), Unprocessed iron (1), Iron (1), Processed jewelry (1), Clay (1), Metal (1), Diamond (1), Green wood (1).
<b>Working/making effort</b>	<b>Bee (9)</b> , Ant (7), Hungry wolf (1), Hungry chicken (1), Cook (1), Fire (1), Marathon runner (1), Warrior (1), Kitten (1), Athlete (1), Honey bee (1), Very hungry person (1), Handicapped runner (1), Donkey (1), Porter (1), Glutton man (1), Donkey cub (1).
<b>Discoverer</b>	Explorer (4), Traveler (3), Passengers curious about the ocean and seamanship (1), Contemporary art museum (1), Einstein (1).
<b>Negatively connotating</b>	Antisocial (1), Battery (1), Son of the circus owner (1), Food (1), Sandbag (1), Tramp mine (1), Traveler in foreign countries (1).



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**Figure 3.** Distribution of medical educator categories according to the fields in which faculty members work

in this category: “A medical student is like an **explorer**. Because he is the person who is not satisfied with what has been given to him and who discovers new worlds himself and will guide his discovery.” and “Medical student is like a **traveler**. Because medical students are travelers trying to find their way.”

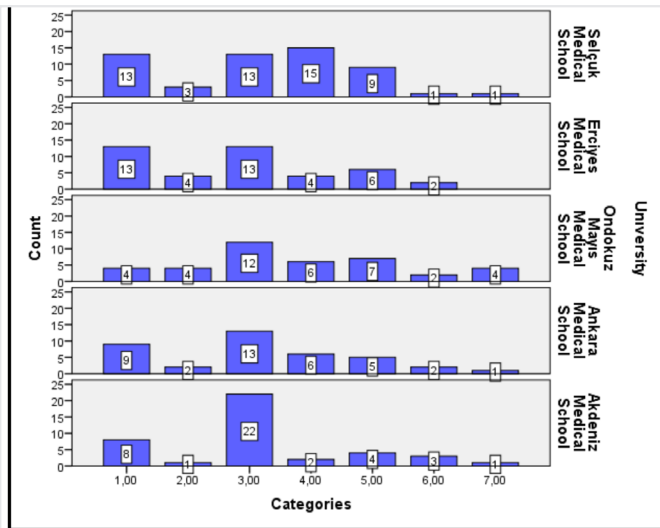
Seven metaphors were produced by 7 faculty members (3.3%) in the medical student category as **negatively connotating**: “Medical student is like a **battery**. Because it gets consumed as you read it” and “Medical student is like **food**. Because it has spicy, sour, sweet. Some leave marks on the palate, some do not hurt for years. Some are fast food. It is consumed immediately, some taxpayers are at the table, it is consumed for a long time. But eventually, it all runs out.”

The distribution of medical student conceptual categories created in the study according to the universities where the faculty members work are shown in Figure 4.

The most used metaphors related to medical students were as follows; processed/valued in Selçuk Medical faculty; growing/developing and the recipient/reflector of knowledge in Erciyes Faculty of Medicine; the growing/developing in Ondokuz Mayıs-Ankara and Akdeniz Medical Faculties.

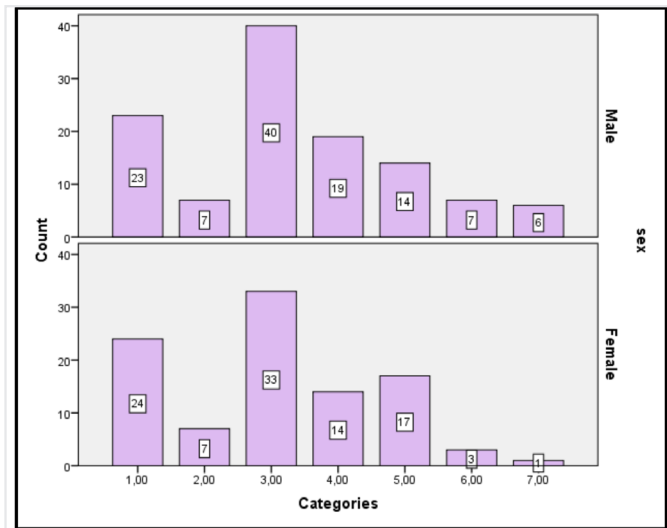
The distribution of medical student categories according to the gender of the faculty members and the fields of science in which they work is shown in Figures 5 and 6. It was observed that the growing/developing category of medical students stood out in both genders. The metaphors in the category of medical students with negative connotations were written more by male faculty members.

In faculty members working in the field of basic medicine, the recipient/reflector of knowledge and the growing/developing



1. medical student as recipient/reflector of knowledge 2. medical student as the constructor/transformer of knowledge 3. growing/developing medical student 4. processed/valued medical student 5. working/making effort medical student 6. discoverer medical student 7. negatively connotating medical student

**Figure 4.** Distribution of medical student categories by universities



1. medical student as recipient/reflector of knowledge 2. medical student as the constructor/transformer of knowledge 3. growing/developing medical student 4. processed/valued medical student 5. working/making effort medical student 6. discoverer medical student 7. negatively connotating medical student

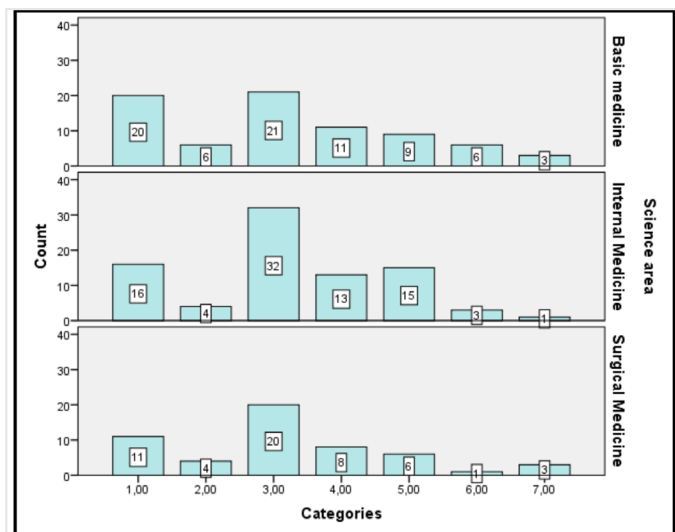
**Figure 5.** Distribution of Medical Student Categories by Gender of Faculty Members

medical student categories were in the foreground. The growing/developing category of medical students stood out among faculty members working in the field of internal and surgical medicine.

## Discussion

In this study, in which the metaphors of medical educators and medical students were determined according to the perspectives of medical faculty members, the mental images created by the faculty members for themselves and the students pointed to a wide range of different metaphors. One hundred thirty four metaphors were produced for the medical educator and 129 for the medical student. Although faculty members produced mostly positive metaphors for both themselves and students, it was observed that some metaphors with negative connotations were also expressed. Yob emphasized that it was important to create a large number of metaphors in a wide perspective whenever a metaphor was done on any subject (28). In this context, 129 metaphors and 7 categories related to the student, and 134 metaphors and 9 categories for the medical educator were produced in this study.

A medical educator should be a master of the field, role model, mentor, leader, manager, researcher, should participate in learning and teaching processes (program design, training, assessment, and evaluation), good at teamwork, act professionally, and have successful communication (12). In the realization of these defined roles, it is important for trainers to adopt and internalize these roles. There is no study on how medical educators define themselves in Turkey. In this study, when the mental images formed by the faculty members as medical educators were examined, it was seen that the categories included the roles defining the role of the medical educator in education, which changed as a result of developments and changes in medical



1. medical student as recipient/reflector of knowledge 2. medical student as the constructor/transformer of knowledge 3. growing/developing medical student 4. processed/valued medical student 5. working/making effort medical student 6. discoverer medical student 7. negatively connotating medical student

**Figure 6.** Distribution of Medical Student Categories According to the Fields of Science Faculty Members Work in

education. The categories of guider/inspector medical educator (29,4%) and information source/transmitter medical educator (26,0%) stood out in the study.

Traditionally, it has been assumed that a physician starting academia demonstrates the ability to teach even though he or she does not receive training for this. It is seen that they are expected to be trainers before they are ready for their educator roles. In this process, most of the physicians who are faculty members are experts in what to teach rather than how they will teach (12). It is thought that a subject matter expert who knows a lot of things

can easily convey them to others, but this is not the case (29). In this study, it was seen that one of the prominent categories in the mental images of academicians was the medical educators as the source/transmitter of knowledge. Medical educators, while demonstrating their educational role, draw on previous experiences, knowledge, and perceptions associated with learning and teaching. These perceptions generally function positively or negatively in the display of educational competencies without reaching the level of awareness; they also play an important role in educators' acceptance of their roles as educators, shaping themselves and choosing teaching methods (30). Perhaps, for this reason, medical educators have produced negative metaphors about themselves. In our study, the widespread understanding of master-apprentice in medicine showed itself and the master and apprentice were the most used metaphors. In the study, it was observed that the view of "medical educator as the source/transmitter of the information" and the view of the "information recipient/reflector" medical student were directly proportional. However, the purpose of education and training should be to enable people to learn, that is, to transform the learner, not to transfer information (29). Therefore, nowadays, the role of the educator is evolving into the role of counselor-facilitator-director, who provides information without transferring information. The role of the learner is shifting towards the learner who works independently, has choices about what to learn and how to learn, and has opportunities to build their learning on intrinsic motivation and natural curiosity (31). In our study, it was observed that academicians also highlighted the category of "guider/inspirator medical educator" for themselves. In education, students are expected to direct their own learning under the guidance of the trainer and take this responsibility (12). In this respect, the trainers' perception of themselves supports this. While the reflection of the category of "guider/inspirator medical educator" in the students was expected to be categorized such as the "constructor/transformer of the knowledge" (6.5%) medical student and the "discoverer" medical student in the faculty members, but the situation was very different. When the perceptions of faculty members towards medical students were examined, it was observed that different metaphors were pointed out. Conceptual themes that were popular in the mental images of faculty members regarding the concept of medical student were "growing/developing" (33.9%) and "recipient/reflector of knowledge" (21.9%) medical students. Less frequently mentioned conceptual themes were the "constructor/transformer of knowledge" (6.5%) and the "discoverer" medical students (4.6%). In the study, it was observed that medical faculty members expressed more frequently the metaphors for medical students that fit the definitions of passive listening and being ones that should be shaped and taught. It can be concluded that educators see university students as children whose typical task is to be conveyed information, to be raised, and to work. Popularly adopted categories represent the "traditional" understanding of education. Faculty members have positive feelings about students, but perceive them as passive information receivers of the education and training process. Whereas, the categories of "knowledge constructor/ transformer" medical student and "discoverer" medical student represent constructivist learning

conceptions and argue that learning is about structuring, creating, exploring, and developing knowledge, rather than being accepted by the learner (32).

Another remarkable finding in this study was that although there were different education models in all schools and educators had similar tendencies. Considering that education is organized as a process of transferring information to students in some schools, it is not surprising that educators perceive themselves as the source of information. However, considering that student-centered education that turned students into active from the passive position, that is, the inclusion of students in educational activities, it was surprising that this was also the case in schools that had adopted these practices. The situation did not differ according to the basic, clinical, and surgical disciplines or the gender of the instructor. There were educator development programs in all medical faculties participating in the study, and within the framework of this program, the practices in which students were taken to the center were reviewed and the importance of these practices was emphasized. Despite the change of curricula, increase in small group work like PBL etc, or educational development programs, it would be appropriate to reveal with further studies why the perceptions of students were like this.

The themes in the studies conducted with the aim of revealing the mental images about the concept of students in teachers and teacher candidates in our country were the themes dominated by the traditional understanding of education such as "student as a developing entity" and "student as raw material" (6,23). The rate of "students as constructors of their own knowledge" was very low (23). The results of this study showed that the metaphors produced by medical faculty members regarding the medical student were similar to those of the other two studies. There is no change for undergraduate students.

In this study, the use of metaphors as a developing, growing, processed, valued entity for medical students shows the importance given to student learning and development. However, in most of the explanations regarding these metaphors, educators emphasize that the student is shaped by the instructor. This study showed that medical educators continued to maintain their traditional educator-centered understanding, despite the paradigmatic transformation in medical education. However, the very knowledgeable person, who constituted the most valuable human type of ancient times, left his place to the person who knew where and how to find information when necessary. Again, the type of human who believes that knowledge is unchangeable and permanent for ages has evolved into the type of human who believes that knowledge changes and gets old in a short time and therefore constantly tries to improve herself/himself in pursuit of new information (33).

## Conclusion

As a result, in this study, it was observed that the "traditional" understanding of learning and teaching was dominant among faculty members of medical faculties, regardless of which model was applied in their faculties. The paradigmatic change in



medical education, the importance of the diversity of strategies and methods, and the different roles of the medical educator have been reflected in educational programs especially in the last decade. These basic topics are also covered in educators' training. Despite all these efforts, the fact that the mental images/thoughts of the trainers remained in a traditional position could be considered as proof that there was no effective change in process from teaching to learning. It is now necessary to stop dealing with what is superficial/forced/apparent and to dig deeper into the subject. More effort and work are needed to change/improve the thinking/prejudice/belief and attitude of the trainers.

## Ethics

**Ethics Committee Approval:** Selçuk University Non-Invasive Clinical Research Ethics Committee (date: 22.12.2015/no: 2015/20).

**Informed Consent:** Informed consent was taken.

**Peer-review:** Externally peer reviewed.

## Authorship Contributions

Concept: A.M.A.K., Design: A.M.A.K., Data Collection or Processing: A.M.A.K., Z.B., Ö.M., M.D., Y.Ş., Analysis or Interpretation: Z.B., Ö.M., M.D., Y.Ş., Literature Search: Z.B., Ö.M., M.D., Y.Ş., Writing: Z.B., Ö.M., Y.Ş.

**Conflict of Interest:** No conflict of interest was declared by the authors.

**Financial Disclosure:** The authors declared that this study received no financial support.

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