

Original Article

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Evaluation of Perceptions About Medical Educator and Medical Student Through Metaphors

Tıp Eğitici ve Tıp Öğrencisine İlişkin Algıların Mecazlar Yolu ile Değerlendirilmesi

Aytuğ Koşan et al. Evaluation of Perceptions About Medical Educator and Medical Student Through Metaphors

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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 was 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 are 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 are "recipient/reflector of knowledge", "the constructor/transformer of knowledge", "growing/developing", "processed/valued", "working/making effort", "discoverer" and "negatively connotating".

Conclusion: It has been observed that "traditional" understanding is 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

ÖZ

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

Yöntem: 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 gönüllük zemininde yapılmıştır. Araştırmada öğretim üyeleri tarafından yazılan mecazlar üzerinden içerik analizi yapılmıştır. Çalışma için etik kurul onaylanmıştır.

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/fedakâr/kimlik geliştiren tıp eğitici", "rol model tıp eğitici", "danışman tıp eğitici" ve "korkutucu tıp eğitici"dir. Tıp öğrencisi için geliştirilen 129 mecaz yedi kategori altında toplanmıştır. Bu kategoriler "bilginin alıcısı/yansıtıcısı", "bilginin inşacısı/dönüştürücüsü", "büyüyen/gelişen", "işlenen/değerlenen", "çalışan/çaba

harcayan”, “keşfeden” ve “olumsuz çağrışım yapan” tıp öğrencisi kategorileridir.

Sonuç: Tüm tıp fakültelerinde öğrenme ve öğretmeye ilişkin “geleneksel” anlayış hâkimdir. 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 the job of 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 medical educator roles and competencies have also been redefined (12). Harden and Crosby defined 12 roles for a good educator (13). Nikendei et al. defined 13 main themes reflecting the roles of medical educators (14). In studies, the characteristics of a good medical educator are medical 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.

Methods

This is 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 purposive sampling techniques, "maximum diversity sampling" was used. It is 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 University Faculty of Medicine (student-centered, problem-based, integrated, community-based, elective and systematic education model), 55 from University Faculty of Medicine (integrated education model), 45 from University Faculty of Medicine (three-year period "Problem-Based Learning (PBL) Period"; 4th and 5th years "Task-Based Learning (TBL) Period"), 42 from University Faculty of Medicine (systematic and integrated learning that includes problem-based, community-based, competency-based learning an integrated education model) and 46 from University Faculty of Medicine (student-centered, problem-solving, integrated, community-based, systematic education model with electives). The educational models of these universities are defined as problem-based for University Faculty of Medicine, mixed for,, and University Faculty of Medicine and integrated for University Faculty of Medicine. There is no problem-based learning (PBL) in University Faculty of Medicine; There are different proportions of PBL and other student-centered practices in the curriculum in medical schools that apply a mixed model.

The data collection tool used in the study is 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 concept of "like" is used to provide the connection between the metaphor to be produced and its source, and the concept of "because" is used to allow the produced metaphors to be justified.

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 do not specify a metaphor, forms that specify metaphor but do 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.

Ethics committee approval was obtained for the study from University Faculty of Medicine (Meeting date:

22/12/2015; Decision number: 215/330). Written informed consent was obtained from the participants.

Statistical Analysis

For the analysis of qualitative data, firstly the metaphors that faculty members determined for themselves and students and the reasons for the using this metaphor were entered in the Excel program. Among the metaphors listed, it was checked whether there was a distinctly repeating metaphor. The metaphors reached with the data collection tool were analyzed using content analysis technique. While categorizing the data, attention was paid not only to the metaphor produced but also to its justification. Content analysis was carried out considering the justification of the metaphor produced. During the content analysis metaphors formed by the faculty members was analyzed by two researchers. They examined the metaphors produced by faculty members in terms of 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 is 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.

The data was transferred to SPSS 22.0 package program. The graphics were drawn in this program. For quantitative data descriptive statistic (numbers, percentages, mean, standard deviation) were given.

Results

54.4% (n = 135) of the 248 faculty members participating in the study were female and 45.6% (n = 113) were male. The average age is 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 34 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; source/transmitter of information; shaper; raiser/feeder/grower; guiding/inspiring; professional; altruist/altruistic/leveling 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 are 26 metaphors in the category of medical educators as the **source/transmitter of knowledge**. 26.0% of the faculty members (60 faculty members) uttered a metaphor in this group. The most frequently repeated metaphors are 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." "Medical educator is like a **book**. Because it contains a lot of information."

There were 10 metaphors in the category of **shaper medical educators**. The most frequently repeated metaphors are sculptors, craftsmen, and artist. 8.2% of the faculty members (19 faculty members) 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." "Medical educator is like an **artist**. Because the actor who appears on the stage while giving lectures shapes people while raising a physician for six years".

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

In the **guider/inspirator 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." "The medical 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 are the conductor, the chameleon, and the donkey. In this category, there are 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." "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, eight metaphors belonging to 16 faculty members (6.9%) were produced and the most frequently repeated metaphors were parents and mothers. "Medical educator is like **parents**. Because he keeps trying to entrust the young people to whom he will entrust his future." "The medical educator is like a **mother**. Because it 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 it is a role model." "Medical educator is like a **model**. Because with his attitude in basic medicine, his approach to the patient in the clinic, he is a role model for the assistants and medical students he trained with the treatment methods."

Owl and call center metaphors were included in the **counselor medical educator** category said 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." "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 said by two faculty members (0.9%). "The medical educator is like a **dictator**. Because he doesn't listen to the student." "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 seen that the guiding/inspiring medical educator category was higher in and Medical Faculties and in, and Medical Faculties the category of the source/transmitter of knowledge medical educator was more seen. Male faculty members wrote more about metaphors in the guiding/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. Faculty members working in the field of basic and internal medicine have used metaphors in the guiding/inspiring medical educator category and in the field of surgery members mostly mentioned the metaphors in the category of source/transmitter of information.

Metaphors Developed for Medical Students

215 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 (8). Seven conceptual categories determined for the student; The categories of medical students are the "recipient/reflector of knowledge", "the constructor/transformer of knowledge", growing/developing, "processed/valued", "working/making effort", "discoverer" and "negatively connotating". The metaphors started by the faculty members for "medical students" according to the categories are shown in Table 3.

There are 31 metaphors in the **recipient/reflector of the knowledge** category. The most frequently repeated metaphor by forty-seven faculty members (21.9%) was 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." "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 said once (6.5%). "The medical student is like a **cargo ship** 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." "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 are 29 metaphors produced by 73 faculty members (33.9%). Most apprentice, seed, flower and sapling metaphors were written 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." "The medical student is like a **sapling**. Because he is ready to grow and develop."

In the **processed/valued** medical student category, twenty-one 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, 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"; "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 are bee and ant. 31 faculty members (14.4%) produced a total of 17 metaphors. "Medical student is like a **bee**. Because it works hard."; "The medical student is like an **ant**. Because it always works."

In the **discoverer** medical student category, five metaphors were produced, and the most frequently repeated ones were explorer and traveler. Ten faculty members (3.2%) said a metaphor 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.” “Medical student is like a **traveler**. Because medical students are travelers trying to find their way.”

Seven metaphors were produced by seven 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” “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**.

It was determined that the metaphors related to medical students used more as processed/valued in Medical Faculty; growing/developing and the recipient/reflector of knowledge in Faculty of Medicine; the growing/developing in-..... and 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 is seen that the growing/developing category of medical students stands 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 medical student categories are in the foreground. The growing/developing category of medical students stands 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. 134 metaphors were produced for the medical educator and 129 for the medical student. Although faculty members produce mostly positive metaphors for both themselves and students, it is seen that some metaphors with negative connotations are also expressed. Yob emphasizes that it is important to create a large number of metaphors in a wide perspective whenever a metaphor is done on any subject (28). In this context, 129 metaphors and seven categories related to the student; The existence of 134 metaphors and nine categories for the medical educator is seen as an important finding in terms of research. A medical educator is required to be a master of the field, participating in learning and teaching processes (program design, training, assessment, and evaluation), role model, mentor, leader, manager, teamwork, professional acting, successful communication, and researcher (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 education. The categories of guider/inspector medical educator (29.4%) and information source/transmitter medical educator (26.0%) stand 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 is 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 recurrent metaphors. In the study, it is observed that the view of "medical educator as the source/transmitter of the information" and the view of the "information recipient/reflector" medical student is 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/inspritor medical educator" in the student was expected to be categorized such as the "constructor/transformer of the knowledge" (6.5%) medical student and the "discoverer" medical student, 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 are popular in the mental images of faculty members regarding the concept of medical student are "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 student (4.6%). In the study, it is observed that medical faculty members express more frequently the metaphors that fit the definitions of passive listening, shaped, and need to be taught for medical students. It can be said that educators see university students as children whose typical task is to convey 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 received and accepted by the learner (32).

Another remarkable finding in this study is that although there are different education models in all schools, educators have 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 turns students into active from the passive position, that is, the inclusion of students in educational activities, are practices that can help eliminate this situation, it is considered as surprising that this is the case in schools that have adopted these practices. The situation does not differ according to the basic, clinical, and surgical disciplines or the gender of the instructor. There are educator development programs in all medical faculties participating in the study, and within the framework of this program, the practices in which students are taken to the center are reviewed and the importance of these practices is emphasized. Although the change of curricula, increase in small group work like PBL etc. or educational development programs, it would be appropriate to reveal why the perceptions of students are like this with further studies.

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 are 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" is very low (23). The results of this study show that the metaphors produced by medical faculty members regarding the medical student are 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. In most of the explanations regarding these metaphors, educators emphasize that the student is shaped by the instructor. This study shows that medical educators continue to maintain their traditional educator-centered understanding, despite the paradigmatic transformation in medical education. However, the very knowledgeable person, who constitutes the most valuable human type of ancient times, left his place to the person who knows 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 being whose 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 is 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 can be considered as proof that there is no effective change process from teaching the direction 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 is needed to change/improve the thinking/prejudice/belief and attitude of the trainers.

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Scientific field	Professor	Associate professor	Doctor lecturer	Other	Total n (%)
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)

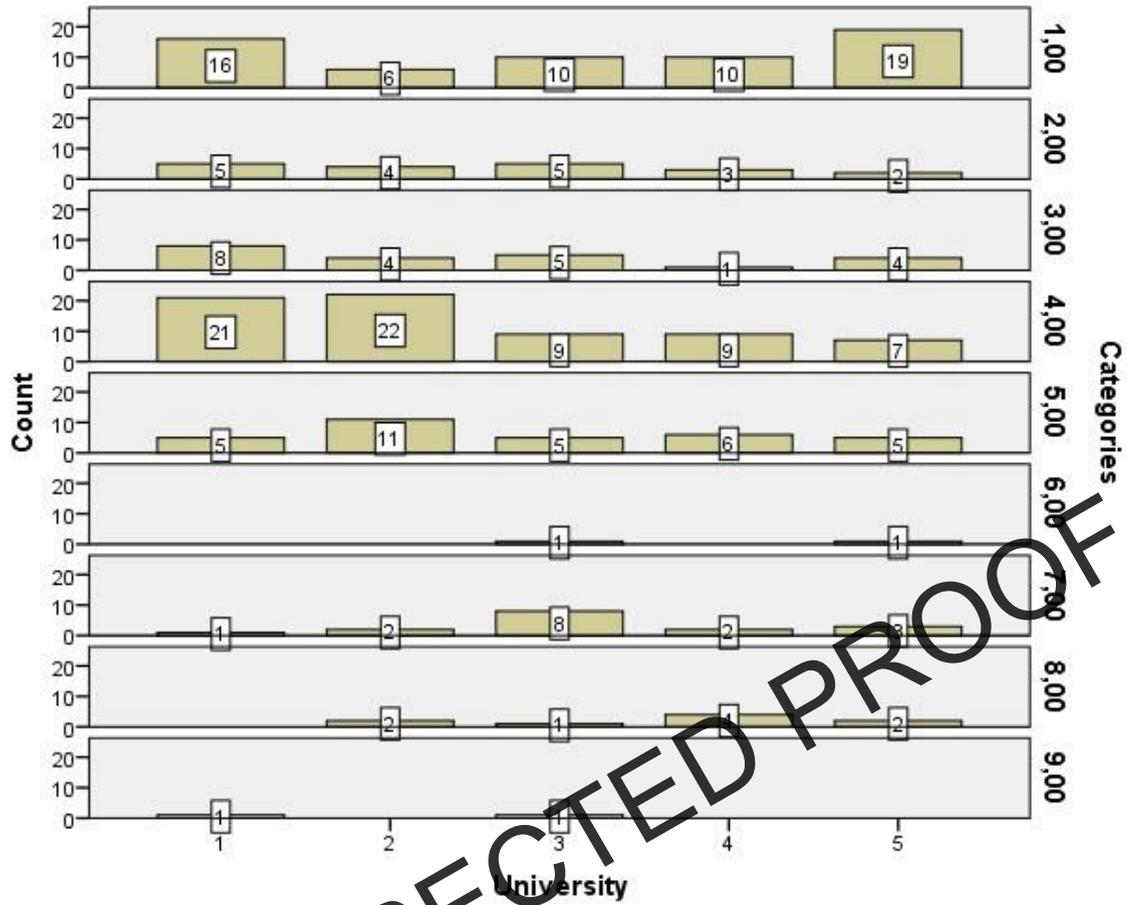
* One person did not specify his/her title; two did not specify the department they work in

Category	
Source / Transmitter of Information	Master (18), Tree (9), 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).
Shaper	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
Raiser/Feeder/ Grower	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)
Guider/Inspirator	Sun (12), Candle (9), 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), Virtuoso (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).
Professional	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).
Altruist/Devoted/Developing Identity	Parents (6), Mother (4), Head of the family (1), Eagle (1), Gift (1), basic (1), General donor (1), Professional parent (1).
Role model	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).
Counselor	Owl (1), Call center (1).
Scary	Dictator (1), Steroid (1).

Table 3. Metaphors of faculty members for “Medical Students”	
Categories	
Recipient/reflector of the knowledge	Sponge (10), 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).
Constructor/transformer of the knowledge	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).
Growing/developing	Apprentice (18), Seed (9), 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).
Processed/valued	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).
Working/making effort	Bee (9), 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), Grutton man (1), Donkey cub (1).
Discoverer	Explorer (4), Traveler (3), Passengers curious about the ocean and seamanship (1), Contemporary art museum (1), Einstein (1).
Negatively connotating	Antisocial (1), Batter (1), Son of the circus owner (1), Food (1), Sandbag (1), Tramp mine (1), Traveler in foreign countries (1).

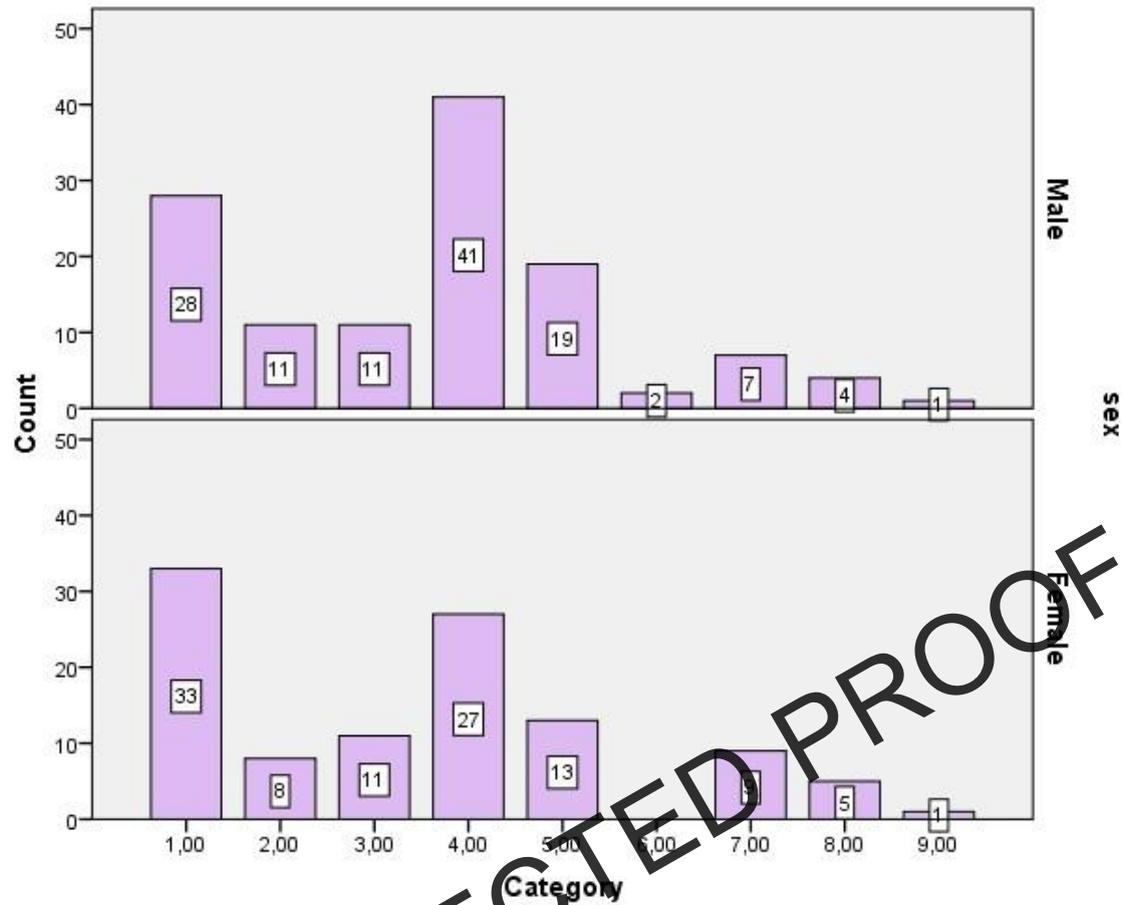
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Figure 1. Distribution of medical educator categories by universities



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. carry medical educator, 7. altruist / altruistic / developing identity medical educator, 8. role model medical educator, 9. counselor medical educator

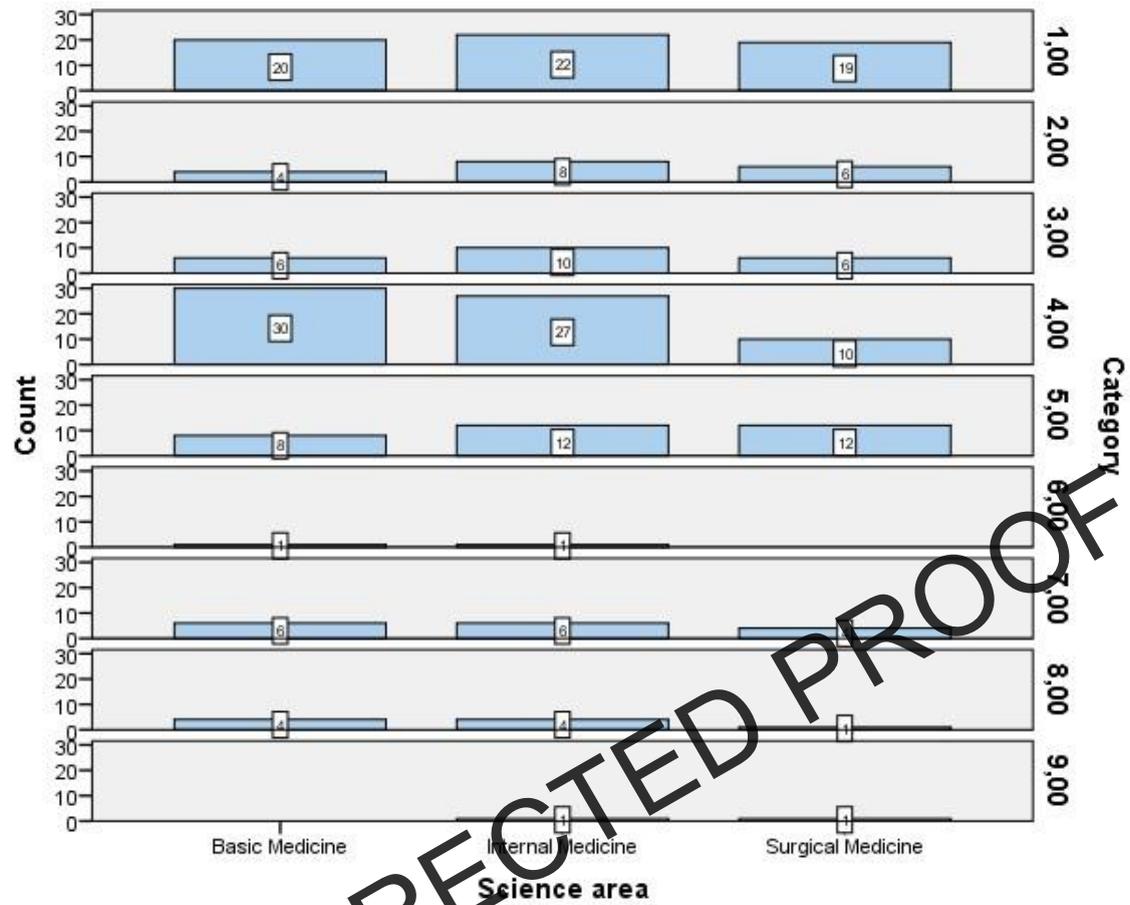
Figure 2. Distribution of Medical Educator Categories by Gender of Faculty Members



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

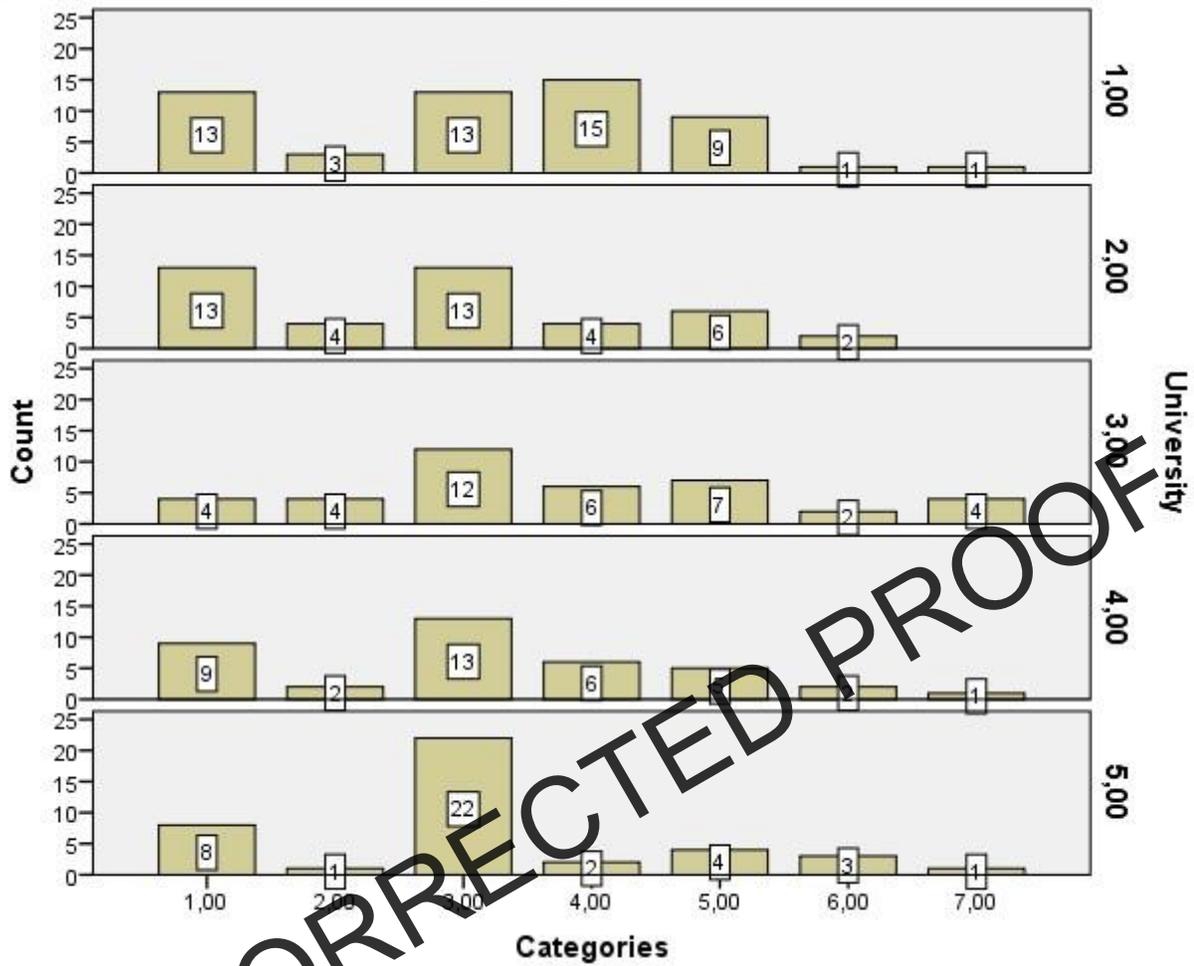
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Figure 3: Distribution of Medical Educator Categories According to the Fields in which Faculty Members Work



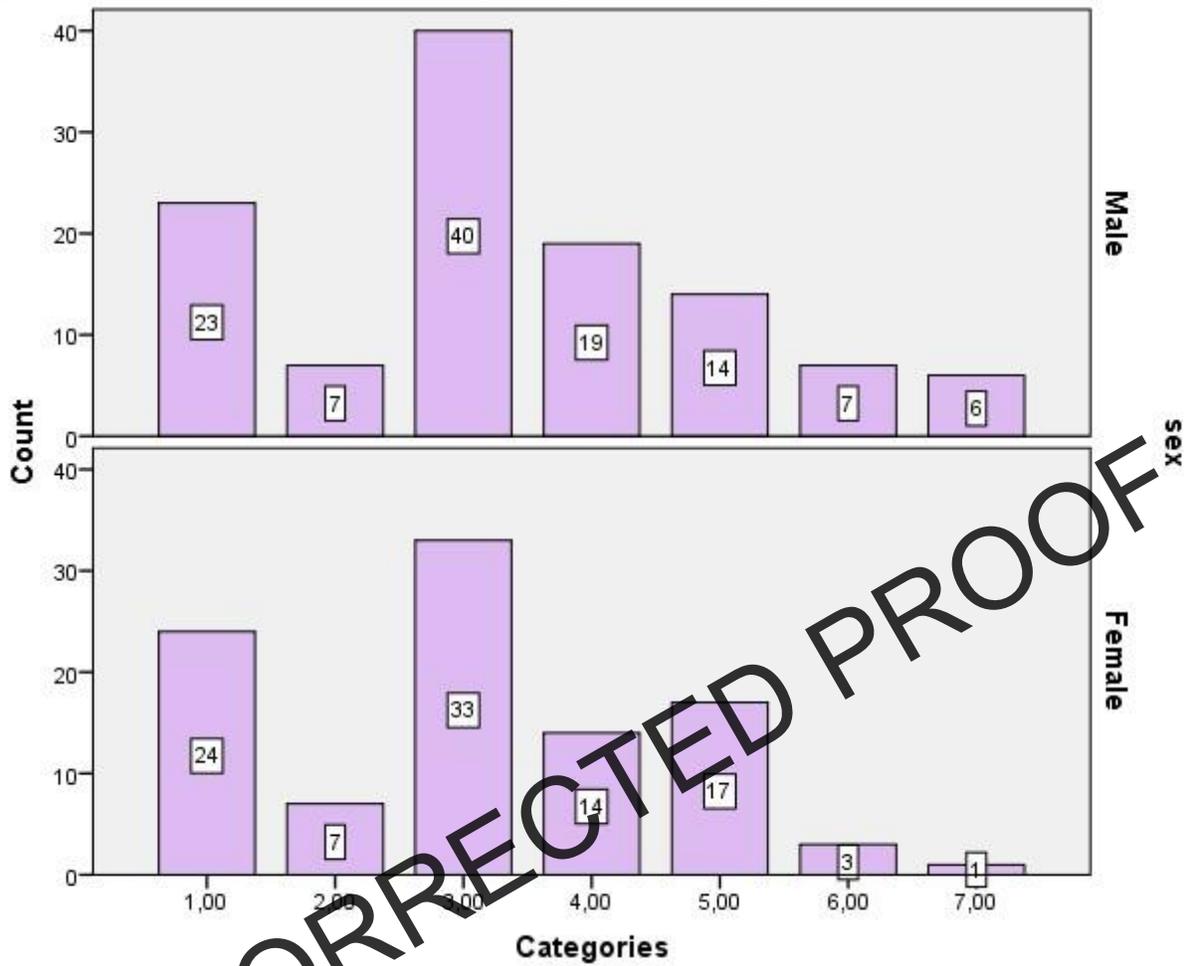
1. source / transmitter of information medical educator, 2. shaper medical educator, 3. raiser/feeder/grower medical educator, 4. guiding / inspiring medical educator, 5. professional medical educator, 6. scary medical educator, 7. altruist / altruistic / developing identity medical educator, 8. role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

Figure 4. Distribution of Medical Student Categories by Universities



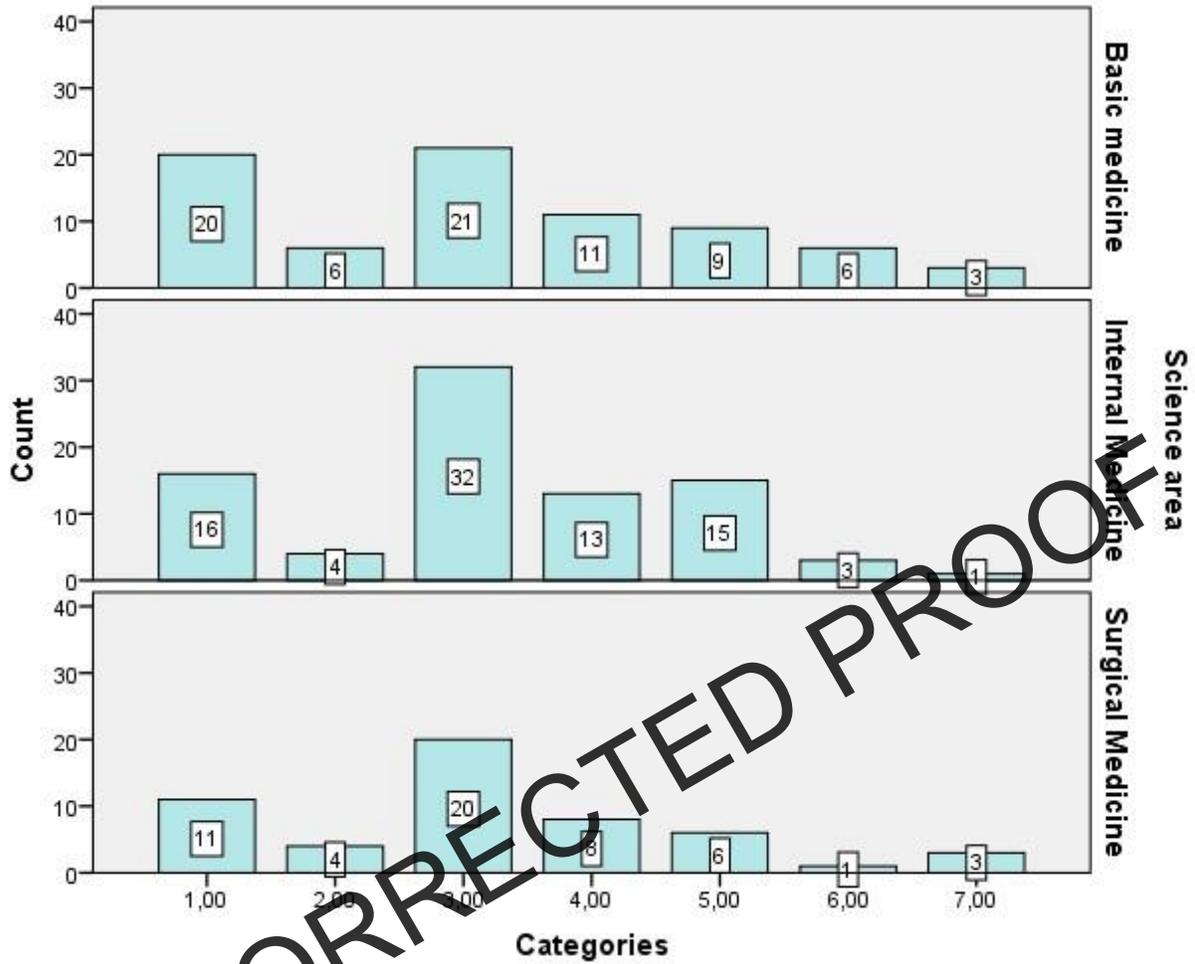
1. medical student as recipient/reflector of knowledge 2. medical student as the constructor/transformer of knowledge 3. growing/developing medical student 4. processed/valued medical student 5. working/making effort medical student 6. discoverer medical student 7. negatively connotating medical student

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



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



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