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Generational characteristics of general medicine students in Iran

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Abstract:

BACKGROUND: Purpose: The success of any educational system depends on the fitness of the curriculum components with the characteristics of its audience. The students of the present generation are different from the previous ones due to the changes resulting from the changes that have taken place in society, media, technology, and communication as we entered the 21st century. Hence, this study was conducted to identify the characteristics of MD students in universities of medical sciences in Iran.

MATERIALS AND METHODS: This qualitative study was conducted on 32 MD students among 7 universities of medical universities of Iran. The participants were selected through purposive sampling method, and the data were collected via semi-structured interviews after getting informed consent. Then, the data were analyzed using conventional content analysis method.

RESULTS: Technology as a Double-Edged Sword, in digital age, Quick access, Reasoning the basis of acceptance. Evaluation ambiguity, Seeking independence, get involved in problems, desirable teaching qualities, my favorite teacher, features of content, Role models traces, my favorite teacher, The rest are unchanged.

CONCLUSION: MD students are interested in using various teaching methods and technologies, applying methods that are similar to their future job and learning by doing; they also tend to use visual materials and shortening the time and memorizing content. They prefer professors who love to teach and are good role models for them. What motivates them is to be involved in the classroom, to be active, to be respected, and not to be ignored.

Keywords:

Curriculum components, generation, generational characteristics, MD students

Introduction

Generations of people have various characteristics. This discrepancy is related to the differences between individuals and the events faced by each generation. In other words, experiencing similar situations by is more likely to lead to the fact that the cohorts of each generation have similar features.^[1] Although it is not definite that the characteristics of one generation cannot be seen in other generations, generally and according to the social anthropology classification, which considers things such as individuals' perspectives on basic values, family, working life, and the method of

educating and learning, unique features can be considered for each generation.^[2] In other words, generational variances reflect changes in culture and values. Then, awareness of the characteristics of a generation is a good way to gain knowledge about the socio-cultural environment in different periods.^[3] Thus, each generation has its own priorities and values that influence their behaviors and decisions in various aspects, including their academic life.^[4] Paying attention to the differences in the characteristics of different generations is of great importance in educational systems, so that the effective performance of these systems and their efficiency depends on paying attention to the characteristics of

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Table 1: General characteristics of the participants

Gender	Age	Academic year	Number of children	Father's job	Mother's job
Girl	20	4	2	Teacher	Teacher
Girl	20	4	2	Teacher	Teacher
Girl	24	10	2	Engineer	Housewife
Boy	25	13	2	Self-employee	Housewife
Boy	20	2	1	Carpenter	Housewife
Girl	23	10	2	Engineer	Child psychologist
Boy	22	7	2	Engineer	Housewife
Boy	22	7	2	Company owner	Housewife
Boy	25	11	2	Employee	Employee
Girl	23	9	3	Telecommunications engineer	Education employee
Girl	22	7	2	Employee	Employee
Boy	21	6	3	Clergy man	Housewife
Girl	27	13	7	Construction	Housewife
Boy	24	8	2	Self-employee	Housewife
Girl	24	8	2	Factory supervisor	Housewife
Girl	23	6	4	IRGC employee	Housewife
Girl	23	6	4	Self-employee	Teacher
Girl	23	6	3	University professor	Housewife
Boy	24	8	3	Teacher	Housewife
Boy	20	4	3	Employee	Employee
Boy	21	6	3	Judge	Housewife
Girl	19	2	6	Farmer	Housewife
Girl	21	5	6	Driver	Housewife
Girl	23	9	3	Self-employee	Housewife
Boy	21	5	4	Employee	Teacher
Girl	24	12	4	Teacher	Housewife
Girl	24	11	2	Surgeon	Midwife
Boy	22	7	6	Owner of an insurance company	Housewife
Girl	25	9	4	Employee	Housewife
Girl	23	9	5	Teacher	Housewife
Boy	24	10	1	Metallurgical engineer	Photographer
Boy	19	2	3	Doctor	Housewife

IRGC=Islamic revolution guards corps

the generations present in these systems, whether in the position of teacher or student.^[5] The medical education system, like other educational systems, has to pay attention to this distinction within the characteristics of diverse generations.^[6-10]

Currently, the millennial generation or generation Y (born in 1977–1995),^[11] which according to the Howe and Strauss division is formed almost simultaneously with the fourth generation (born in 1991–2011) in Iran, are the largest and most diverse generation that has entered the universities. Although time interval considered for this generation changes marginally, what is obvious is that this generation has one of a kind characteristic that make that easy to distinguish it from other ones.^[12] In different nations, like the United States, the United Kingdom and Australia, the development of these contrasts in attitude of each generation, as well as different characteristics of Y generation compared to other generations, leads to numerous discussions and educational opinions on how to manage the challenges

and capabilities of this generation.^[13] So various studies have attempted to determine these characteristics.^[1,14,15] An issue that doubles the importance of paying attention to the characteristics of learners in the field of medical education is clinical education while taking care of patients. A complex process that connects student with a collection of different generations, and this learning environment must be managed in the most effective way.^[16]

Considering that each generation has characteristics that can positively or negatively influence learning, it is essential for those included in medical education to distinguish the characteristics of this group of learners and hence behave according to their own generational characteristics.^[17] Therefore, the medical education system must make changes and answer the question of how y-generation learners can do their best in various aspects of education; In other words, the success of the educational system is to pay attention to the unique characteristics of this generation and to consider this

Table 2: Categories and subcategories

Main categories	Subcategories
I, in the digital era	Digital-centered learning Opened doors of technology to science advancement Digital native Educational technology, a necessity
Tendency to short distances	The secret of my indolence Going a hundred years overnight Looking for educational convenience
Reasoning, the main basis of acceptance	Reasonable acceptance of everything I am logical Informed generation Open mindedness
Ethnical controversy	The vital role of ethics lessons Values and counter-values Specialist and ethical doctor, patient trustee The bedrock of moral formation Sources of ethics Loss of morality
In the conflict of evaluation	Evaluation, the foundation of education Changing the concept of evaluation
Technology, a double-edged sword	Dark sides of technology Bright sides of technology
Incomplete educational puzzle	Incomplete educational puzzle Late morning My dreamy university Attracting and retaining professor and student The shadow of the therapeutic role on the teaching role
In search of independence	Need a light Hold my hand and go on Servant parents, an obstacle to independence In the dream of being self-reliant Independence framework My hands in parent' pockets
Role models traces	The importance of having role model Simulation of parents
Captured in octopus' arms	Road signs of apathy Uphill of medical road Immigration concern Lack of focus Tired of frameworks Heat of comparison magnifier Low tolerance threshold My unwell feeling Difficulty of staying on the first place My concerns
Must have content	Tell the main point The mind full of memorization Up to date science Interdisciplinary doctor
Resilience factors	Interest, my driving force Motivational reservoir

Table 2: Contd...

Main categories	Subcategories
	Class attendance drivers Teacher, the driving force My geography in class
My favorite teacher	Teacher, my friend and companion Teaching art Respect contract Professional profile of a good teacher Good teachers' personality traits Good teachers' value characteristics The physical characteristics of a good master
My favorite teaching	Thinking, the essence of learning Practical and pragmatic training Make learning meaningful My favorite teaching methods Student-centered learning, a learning factor Gaining skills, my lost

fact that based on previous educational models they can not deal with this generation.^[17] In other words, the curriculum components must be appropriate to the characteristics of the audience. Generation Y students are different from their predecessors because of the changes that have taken place in society, media, technology, and communications since the 21st century. In fact, the personality of the people of this generation, the intellectual process and educational tendencies and their expectations are completely unique and different from previous generations.^[18] Such that even some studies claim there are psychological changes between the brains of this generation and previous ones.^[19] Accordingly, this study was conducted to determining the generational characteristics of MD students born in the 2000s in Iranian medical sciences universities.

Materials and Methods

Study design and setting

It was a qualitative study using face-to-face, in-depth, and semi-structured interviews. In order to standardize the interview process, the researcher used an interview guide that included predesigned topics. Moreover, according to the participants' answers and considering the objectives of the research, enlightening questions were used to guide the interview.

Study participants and sampling

Participants in this study were MD students studying in the country's medical universities. Inclusion criteria were to spend at least one semester. The sampling was purposeful and the researcher tried to select the participants from different large landscaping areas. In order to obtain rich information, participants with different characteristics (such as gender, semester, grade

Contd...

point average, etc.) were considered Table 1. Also, during the sampling, based on other issues and questions that arose, decisions were made regarding the selection of the next participants. Sampling was continued until data saturation and a total of 32 interviews were conducted from October 2018 to July 2019.

Data collection tool and technique

The interviews were conducted individually and in a calm environment, and the duration of each interview depended on the circumstances, time, information, and patience of the participants. For successful interviews, general beginning questions (such as “What experience do you have from the first day of the medical class?”) were used, followed by more specific interview questions. The first three interviews were conducted unstructured to obtain appropriate questions for the interview, and from the third interview onwards, we conducted semi-structured. At the end of the interview, participants were asked to comment if anything remained unsaid. At the end, while appreciating the participants, the next possible interview was agreed upon and planned. The interview process was recorded with the assent of the participant by a tape recorder; and immediately after the meeting, all non-verbal information counting the interviewee’s gestures and the interviewer’s sense of the meeting were noted. The use of sentences and field memos can help background information to be added to the interview data.^[20]

In the process of data analysis, the Granheim and Landman model was used, in which the text was read repeatedly to get acquainted with the data and to gain insight and sense of the whole. Then the units of meaning were selected and the text was divided into units with smaller content based on the purpose and question of the research. Then, the important points and titles of the text were extracted as open code and the codes formed the main codes based on the similarities and differences between them under broader titles. A number of the main codes were also categorized as categories, and finally a number of categories formed the main categories.^[21]

Ethical consideration

To conduct the interview, the researcher, after establishing appropriate communication and gaining the trust of the participants, provided the necessary explanations for them and asked them to complete the consent form to participate in the study, and then, the time and place of the interview with the consent of the participants were determined.

Results

Out of 32 participants in the interview, 18 were female and 14 were male. The age range of participants was between 19 and 27 years.

By analyzing the data, 14 main categories and 66 subcategories emerged as generational characteristics of students. Technology as a Double-Edged Sword, in digital age, Quick access, Reasoning the basis of acceptance Evaluation ambiguity, Seeking independence, get involved in problems, desirable teaching qualities, my favorite teacher, features of content, Role models traces, my favorite teacher, The rest are unchanged Table 2.

I, in the digital era

I in the digital era refers to the integration of technology in the lives of participants, the centrality of the role of technology in the growth and development of them, the relationship between technology and science development and its role in education in both forms of educational technology and online learning. In this regard, one of the participants noted:

“For us, from an early age, technology has been integrated into almost every aspect of our lives, we use it for almost anything and we are dependent on it. It has even made our general information more than the previous generations.”

Tendency to short distances

This category indicates that the social conditions and developments of this era have raised them in such a way that they tend to achieve their desires in the shortest time and with the least effort, and they want to travel the hundred-year-old path overnight. For example, in this regard, one of the participants believed that:

“We search for comfort while the atmosphere for this comfort is also available. Well, we are a little lazier. Everything is available for us because of technology, so we may not appreciate it. We had not experienced hardship to get things... we can easily get anything we want...”

Reasoning, the main basis of acceptance

This category generally speaks of circumstances in which the participants consider them as a reason to be trained in a way that they were not merely obedient and unquestioningly accepting without using their own judgment and logic. For example, the view of one of the participants was expressed as follows:

“My parents are people who said the necessary things to us and listened to our logical conversations. Some people know that their words are wrong, but they say that our prestige should be preserved. but my parents accept right things very soon. I became like them too... I accept words that are logical and without coercion...”

Ethical controversy

These people are influenced by social, economic and value situations of society and have their own priorities

and values. What this category generally refers to is the conflict between these values and the values they are expected to adhere to as a medical student and in the future as a physician. For example, the experience of one of the participants was expressed as follows:

“Sometimes there is a communication outside the framework of patient-doctor relationship. The patient realizes that this physical contact was not needed right now. I think that if he had chosen medicine because of his humanity and medical value, not money or anything else, maybe he would not have done this.”

In conflict of evaluation

This category refers to the paradox that the concept of evaluation has got for participants. In fact, this category, on one hand, emphasizes on the important role of evaluation in learning and on the other hand, shows that the meaning of evaluation for participants and the educational system, has changed from learning to scoring and passing the test. One of the participants mentioned this issue as follows:

“Look, my score is high now because I am adapted to this evaluation system, not because I know a lot. I have a grade point average of 19.5 not because I know a lot, I just know how to take the exams... because you have to get a good grade. It is not important whether you have learned or not”

Technology, a double-edged sword

In this category, in general, two positive and negative aspects of technology are discussed. In fact, despite the many advantages of technology, creating ease and speed in works, there are disadvantages that should be considered. Both positive and negative sides of technology together and side by side are important. For example, one of the participants said that:

“Cyberspace has made my extracurricular studies less than my adolescence and has increased my mental tensions. It is very influential and this means that it can lead me to a stream that is not necessarily correct, it can attract me to itself. In the other hand it can help you to get aware of many things you did not know before.”

Incomplete educational puzzle

This category addresses the shortcomings and weaknesses of the educational system and the university. This points out that these shortcomings, as a series of factors, lead to problems in medical education. For example, we can mention the inefficient criteria for selecting professors and medical students. For example, one of the participants says:

“One of the most important things that I think should be considered at the universities is the selection of professors.

Educational professors should be separated from research ones. If educational professors teach, many problems are solved in the learning. A teacher who teaches well, teaches beautifully, makes the problems be understood and really shows attempt in his/her work...”

In search of independence

Participants in this category believed that social, educational, and family circumstances deprived them of the ability to plan and make independent decisions, took away their financial independence or the successful implementation of their programs. Therefore, they are eager to gain independence. In this regard, one of the participants expressed his opinion as follows:

“Personally, it takes me a long time to make a decision, but I want to go this way little by little with my parents’ support; and to stand by my decision. When someone else supports my decision, I can implement it much better, I can be sure. For example, studying is better when a counselor approves my work or even in an emotional event an approval of my family or friend can help me make a better decision.”

Role models traces

In general, it was necessary to pay attention to the prominent role of models in the formation of human behavior and personality and even in changing them was emphasized by the participants in this category. They believed that role models in all aspects and moments of life, leave their mark on humans lives. In this regard, one of the participants believed that:

“The problem is that in addition to us, our professors do not have a role model too. The surgery group, for example, has 30 professors. Two of them teach really well, but other professors do not know it. They do not know how they teach, I mean, none of the professors went to Dr. X’s class to see why Dr. X teaches beautifully. Why do children listen? Why, even though he asks difficult questions, they can answer his questions.”

Captured in octopus’ arms

In general, it can be said that this category refers to the difficulties, pressures, problems, and shortcomings that surround the person, put pressure on him, and take away his motivation to keep going. The source of these pressures can be, for example, the reasons of choosing his field, university, technology, community perspectives, economic status, family or even the person himself and his concerns. In this regard, one participant believed that:

“The motivation that a person has before entering university, the dreams that he/she has in his/her mind after entering the university, really diminishes. It’s like throwing a bucket of cold water on his/her head and saying what you thought was an illusion. It causes to lose all the motivation you had.”

Must have content

In this category, participants have selected features for content that make it their desirable content. The absence of these features in the content has a direct effect on their willingness and motivation to learn. For example, content from their point of view should be concise, up-to-date, interdisciplinary, and practical. In this regard, for example, the opinion of one of the participants can be mentioned:

“My grandfather has diabetes, I saw some clinical things, I saw tests. I understand more when the professor teaches diabetes. In medicine, the content should be deeply connected to the clinical education. Today, a physiology professor brought a clinical doctor and she taught for half an hour. She taught very well that we could completely understand”.

Resilience factors

In general, this category identified factors that motivated participants to do things, pay attention to lessons, attend classes, and encouraged them to keep going. For example, these factors can include interest of the person, motivation of teachers and seniors, teaching skills, and class management of the teacher. The opinion of some participants can be expressed as follows:

“On the days we had class with Dr. Z, we say ‘Wow, how good. for example, we felt like we were teachers... Dr. Z counted as us a person... the lesson is so important for him... he engages the student... He says that the life of this patient depends on you... but many of professors just care about themselves...”

My favorite teacher

Participants in this category, generally had an image of a good teacher in their minds and were looking for these criteria in their professors. These characteristics include both the scientific and personality aspects of professors, the sum of which defines their preferred professor. For example, they preferred teachers who had the art and love of teaching, interact with the students, understand students, and respect them. In this regard, according to one of the participants:

“The teacher has to be really literate; and also has to teach which will benefit his/her student later in the career. Usually, those who are more literate need to be up to date in both content and different teaching materials and methods. A good teacher also knows when to give a break, or when to use a new case. These things can show how competent he/she is!”

My favorite teaching

Participants in this class discussed a number of teaching methods and techniques that are desirable to them. These methods are appropriate to their characteristics and desires, and motivate them to be active in learning and paying attention to the lesson. These methods are

those which are attractive, challenging, pragmatic and student-centered. For example, the experience of one of the participants was as follows:

“The teacher said I’m talking about this, and started explaining by a picture, and tell the key notes if there was. He told us sometimes this part is useful for your future job, and he teaches very categorically... I like to use a concept map when I want to write a summary and he uses it as well.”

Discussion

The purpose of this study was to determine the generational characteristics of MD students related to curriculum components. These characteristics were shown within fourteen categories extracted from MD students’ interviews.: I in the digital era, Tendency to short distances, reasoning, the main basis of acceptance, Ethnical controversy, In the conflict of evaluation, technology, a double-edged sword, Incomplete educational puzzle, In the search of independence, Role models traces, captured in octopus’ arms, The must content, Resilience factors, My favorite teacher and My favorite teaching.

The characteristics of this generation, like all other generations, have been formed by social and financial conditions, scientific progresses, and important historical events that happened in their or their parents’ life time. As shown in the table above, their lives are integrated with digital and technology and it has caused them to get familiar with and enter the computerized world from an early age. Since childhood, unlike previous generations, they have been entertained by computer and digital games, and in adulthood, they have connected with their family, friends and teachers through the digital world and have introduced themselves as “I in the digital era.” This has led them to demand the use of technology in the education, learning and acquisition and promotion of knowledge. As they access to abundant electronic and virtual content, they feel less need to participate in classrooms. That is why they expect to use virtual and online classes along with face-to-face classes for medical courses and contents that are capable for. This result is in line with the study of Bennett *et al.* They believe that the present generation, called the Digital natives or the Net generation, have been integrated into technology throughout their lives. Integration with technology has caused them learn related skills, and to have different demands from previous generations related to the use of technology in education.^[22] In addition, Sabouri and Mardanzadeh study on the effect of virtual and face-to-face education on the score of pharmacy students showed that most of the students (85.9%) tended to use the virtual education in pharmacy internship course and according to satisfaction of students, virtual education

can be considered as a complementary method to traditional education and the course can be presented blended (face-to-face + virtual).^[23]

However, despite the positive effects that technology and living in the digital era has had on the present generation lives, its negative effects should not be forgotten. In fact, as participants pointed out, “technology is a double-edged sword” that both positive and negative aspects of it must be considered. Nowadays, with technology, obtaining information has become easier and faster, and educational technologies have helped a lot to learning and attracting and maintaining students’ attention, but on the other hand, Activities such as exercising and reading books have declined. This issue has increased the stress and psychological burden on people and has imposed more physical and mental illnesses on them. Furthermore, the constant availability of knowledge on the Internet, notebooks, iPods, etc., has made them think that they know everything and prevented them from analyzing, learning, or even memorizing information. All of these, in addition to mental and physical indolence, can have a profound effect on stress, mental confusion, anxiety, and decreased concentration.

In an article entitled “generational changes and its effects on the classroom” by Tweng, it is pointed out that there is a degree of stress, anxiety, and poor mental health in the Y generation; and since medical and nursing fields are continuously related with the stress and depression, the combination of these two issues has caused more number of these individuals to experience serious mental health issues while their studies.^[3] As a result, to reduce its negative effects, students can be taught time management techniques so that they can manage technology application and reduce its negative effects.

Besides category of “I in the digital era”, the category, of “Tendency to short distances” has been revealed from the analysis of interviews. Living in the digital era and with technology, which provide easy and immediate access, and with parents who without question and quickly meet all their needs and provide full welfare for them, has made them people who tend to achieve results with minimal effort and time. This has also affected the duration of their attention and reduced it, so they tend to reduce the duration of classes and increase the number of breaks between them. This result is consistent with Burke’s study. In this study, one of the educational manifestations of the characteristics of this generation is their short attention and concentration span. In fact, this generation is used to rush into everything they do.

That’s why they have to be actively involved and do the tasks they enjoy doing, otherwise they get tired and lose their focus. They also want to reach a conclusion

quickly and receive immediate feedback to know how they are doing things.^[24] To meet this need, they can be given a holistic and classified overview of what they are going to learn at the beginning of the class and course, so that they can immediately know what they are going to learn and do.

In the “My Favorite Teaching” category, participants stated that they prefer methods that are fun, engaging, various, and visual. As Reilly’s study showed, if we want to motivate these people, we must use real-world simulators such as virtual reality, because these people are visual and also learn by doing.^[25]

In previous category, you can still see the traces of “I in the digital era” and “The tendency for short distances” categories. This result is in line with a study by Vincent Roehling in which the researcher points out that the millennial generation grew up in a multimedia environment in which they quickly shift their focus from one stimulus or source of information to another, have little patience, get tired quickly and need a lot of stimulus to stay focused.^[26]

On the other hand, “tendency to short distances” has led to a reduction in attention span and a desire for active and student-centered methods. From their point of view one way to keep them active, keep their attention for longer and to make them analyze and think, is to learn by doing, which leads to the learning of skills, and can be very successful. This issue is especially important in the field of medicine because in medicine, the skill is very necessary and just having knowledge does not benefit the student. Because of learning skills’ desire, their “The must have content” is the content in which the basic sciences are integrated with the clinical science, and professors give them examples from their relevant and real-life experiences in working life; because a medical student, needs to use knowledge in his work environment instead of memorizing it. He needs skills for the real world; and so the content is attractive to him, which is as practical and concise as possible and prepares him or her for career in the future. These results are in line with Kotz’ study of students’ demands in the classroom. Kotz’ study showed that students prefer topics and content that are relevant to the real world and what they are going to do in the future, and only then they will be interested in learning.^[27]

For this reason, it can be said that the best option for the curriculum in the millennium and new generations is to use competency-based curriculum. As the Higher Education Accreditation Council in the United States and the Royal College of Physicians and Surgeons of Canada show, competency-based medical education is rapidly gaining international acceptance. The

characteristics of competency-based medical education can be fully related to the educational needs of millennials in various dimensions, including educational expectations, educational process, attention to ethical and professional factors, evaluation, feedback and intended outcomes. In fact, due to the principle of transparency in programs, personal learning and effective evaluation, competency-based medical education is a suitable and ideal option for the millennial generation as the training and evaluation in this model of planning is appropriate for the needs of 21st century students.^[28] It can be said that this approach is a pragmatic approach to the development of curricula that offers a powerful and attractive method for improving and managing medical education.^[18]

What has influenced the formation of this generation, like any other generation, is the values of the society in which they grew up and live in. They have prioritized their values and formed their value system under the influence of this society. Many of them have chosen their field of study under the influence of, this society in which doctors have a high social status, money and parents who want their children to become doctors. Sometimes, even this choice is against their interest. This has created a “moral controversy” or a kind of contradiction between some of the values of medical students and professionalism. This contradiction is generally due to the role of value structure in choosing a field and also due to the priority they give to their personal life and comfort compared to working life and others. This result is in line with Weber’s study of the millennial individual values. This study showed that this generation tends to its individual values more than social values, and its competitive values more than moral ones.^[29] Another study also found that medical professors and educators were concerned about professionalism in Generation Y. They see Generation Y as lazy, unmotivated and selfish people, and believe that, in work-life balance, working life is not a priority for them. While as medical students, they are expected to sacrifice and dedicate themselves for greater goals.^[17]

“Role models traces” was suggested as a very important category for learning and practicing these great goals and improving the performance and attitude of the participants. In fact, participants believe that the role of role models in shaping, changing and modifying behavior is very important, and this importance has caused role models to be under a magnifying glass in all aspects and at any time. The Partridges’ study also points to the importance of having a role model, and believes that Generation Y wants to be supported by a role model in deciding which way to go. In fact, he believes that they need role models who not only know the right direction but also walk through the same way and can show it to others too.^[30] It seems that by introducing

appropriate role models to participants and even their teachers and parents, it is possible to help them improve their performance in all aspects; because the participants believed that the number of role models in their time has decreased and they do not have a suitable role model that has grown in same situation and society.

“Incomplete educational puzzle” was another category that was extracted from the participants’ statements. From their point of view, education is like a puzzle which different pieces of it together form a correct and efficient educational system and can raise qualified and competent physician to provide services for the community. From the participants’ point of view, some of the pieces of this puzzle are not in the right place and so have caused problems in other parts of the educational system. Among these, one of the most important part is the employment of professors who are not teachers. Which means they are not properly acquainted with the science of teaching, education is not their priority, or they do not have the art and love of teaching. Such a teacher, without sufficient concern and motivation, negatively affects the motivation of learners and does not provide effective education by not using the teaching and classroom management methods properly. These results are in line with the study of Therrell and Dunnback. In this study, entitled “Perspectives and Priorities of the Millennial Generation”, which was conducted to hear the voices of learners to check out their favorite teaching and learning, students want professors who teach with their hearts and teach with love, passion, attention and care, which is absolutely vital to increase students’ motivation to learn. In fact, their beloved teacher was a teacher who not only cares about presenting the curriculum but also cares about the learners and their learning, learns their names and is kind.^[31]

Depending on the generational characteristics of the participants, they have considered some features for their dreamy university. They enter the university with the expectation that they will learn other skills such as study, social skills, creativity, responsibility, and independence in addition to studying and gaining skills in their field. Participants as future physicians must have many skills such as the ability to make decisions and act independently in addition to teamwork to be able to decide and act independently. But participants, as mentioned in the “In Search of Independence” category, seem to be people whose parents, from childhood, often made their own plans and decisions in the academic and extracurricular fields and led them become dependent individuals who are weak in planning and advancing job and financial goals alone. However, the participants stated that they want to gain independence and expect the university to help them gain independence and other necessary skills, despite the safe range they have created for themselves.

Monaco and Martins' study, which is in line with the results of this study, showed that the parents of this generation, commonly referred to as helicopter parents, are highly integrated with their academic life and are in fact an integral part of curriculum and their extracurricular decisions. In this study, in order to support their desire for independence, it is suggested that, primarily, in educational settings, students' information is not disclosed to their parents without their consent, so that their dependence is gradually eliminated.^[18]

In addition to not being independent, these individuals are too influenced by some other conditions that directly or indirectly influence their work and individual life and kill their motivation and somehow make them "captured in octopus' arms". Participants, as medical students, spend a long, difficult, and income-free period in a situation where they think they have been accepted in medical school and need no further effort. They endure a lot of mental burden. Moreover, since in Iranian society, acceptance in medical field and being a physician is considered as an esteem, and numerous parents, disregarding their children's interests, make extraordinary endeavors to supply facilities to lead them to it; Also, since medical students were often among the top students during school and now they have got a very good grade in the university entrance exam, they are considered in a higher position than their peers. So they are now under the constant pressure to stay on the first place and are always compared with their peers by family and others.

On the other hand, with the appearance of social media, comparing their lives with others' in the internet began. As people in social media usually expose the happy side of their lives, the compare pressure has increased. This leads them to diminished concentration and uneasiness. These results are in line with the findings of the Monaco and Martin study, which examines the characteristics of the Millennial generation that affect teaching and learning. The Monaco study showed that the participants in this study were under pressure too. In fact, they were under pressure from those who often judged their actions, and this is why they need feedback to know how good they did their works; and without receiving it, they get confused and stop moving.^[18]

As medical students' lives are associated with stresses, "resilience factors" is a category that participants believe can reduce the burden of these stresses. It appears that these individuals, as medical students who are confronting a troublesome way, know the important role of interest in enduring challenges. They suggest that in medical entrance exam, assessing emotional domain must be considered. In fact, since medicine is a field that has many difficulties and is of vital importance due to its relationship with human lives, it requires

high self-sacrifice and professionalism. Therefore, in addition to the university entrance exam, it is necessary to consider a test or interview to assess the emotional and attitudinal dimension of medical applicants to ensure their interest and attitude as a qualified student. This interest and attitude can significantly help the learner to withstand the pressures of this field and even reduce professionalism problems.

Interest and motivation are just as important in students as they are in professors, and so should be considered; because they can help students as "resilience factors". They can help students first by making a positive climate of students and teachers who pass it on to each other, and second by good instructing and class management that a motivated instructor transmits to student in a cycle. This motivation in the student can also happen by getting good grades, success in learning and being aware of the necessity of a lesson. It can be said that the result of this study is in line with a study conducted by Borges, which compared the motivating factors in the two generations X and Y from three aspects of motivation, power, success, and dependence. Generation X individuals were found to care more about the power (defined as motivation and desire to influence others), and Generation Y individuals care more about the succeed (motivation to succeed by doing better and surpassing scientific standards) and independence (characterized as inspiration to share with others and the crave to begin, sustain and protect a positive and compelling relationship with others) and are more motivating for them.^[16]

As noted above, due to the prominent role of a professor in student motivation and learning, participants portrayed a "My favorite teacher" in the personal and scientific aspects that their professors and the university are expected to help it come true. In part of this picture, they want to be seen by their teachers and their problems, concerns, and abilities to be considered by them. All of this requires the establishment of a friendly relationship between the professor and the students, which motivates them. The results of this study are in fact in line with the study of Bowen *et al.*, which was related to the learning experience of the current generation of students. Focus group participants in the Bowen study noted the opportunities to interact with their professors after class time. This opportunity can be within the classroom, the professor's office or on campus. In fact, they have considered proper teacher-student communication as one of the characteristics of their wanted educator and noted that making this interaction between teacher and student makes the student respect his instructor.^[32]

Limitation and recommendation

In the qualitative phase, there was a possibility that the interviewers' opinions influence the participants', but

the attempt was to dedicate the researchers' presence in this section to asking questions and clarifying for the participants and to refrain from presenting their views.

Presenting the educational characteristics of the current generation of MD students can lead to the extraction of valuable results so that those involved in the education system can use them to improve the quality of education in the higher education system.

Conclusion

The present qualitative study improved our understanding of the characteristics of learners through research on both genders, dormitory and nondormitory resident, different ages, semesters, and geographical locations. MD students appear to be fascinated by applying diverse educational technologies and methods. Particularly applying the ones that are based on their future job, pragmatic and visual. They moreover tend to abbreviate the time and memorizing substance of the lessons and prefer teachers who love teaching and can be a great role model for them. It motivates them to be involved in the classroom, to be active, to be respected and to be seen. Hence, it seems necessary to take corrective actions and regular and organized planning to apply these characteristics in the education and training program of these people.

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Conflicts of interest

There are no conflicts of interest.

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