Teaching Model in Undergraduate Medical Sciences (An Approach to Social Capital)

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Abstract: The social sciences are certified by many experts as one of the educational institutions that affect the formation of social capital. The aim of this research is developing a teaching model in the field of medical sciences for undergraduate students to strengthen their social capital. To answer the question of what type of teaching method can be offered for undergraduate students in the field of medical science to strengthen their social capital? This qualitative research employed Grounded theory methodology. It was conducted in 2015 in Tehran and the data collection tool was interview. The medical sciences undergraduate students (n = 20) participated in the study. Sampling was purposeful and encoding method was used to analyze the data. After identifying the main categories of research (teaching method) the obstacles, strategies and outcomes were drawn in the final research model. Thus, it is worth that the teaching methods in undergraduate level of medical sciences are reviewed and implemented according to the proposed model.
Keywords: curriculum, social capital, teaching method, medical sciences, undergraduate

INTRODUCTION

Loury is the economist who used the term social capital for the first time in the seventies to describe the problem of urban economic development. From 1980 onwards, the concept of social capital was introduced to the social sciences, especially sociology. First, Jacoub, Bourdieu and Passeron raised it and people like Coleman, Putnam and Ports extended it [1].

Jacoub in the book "The Death and Life of Great American Cities" regards social capital as an intensive social network that in the old urban areas shows more responsibility in maintaining cleanliness, absence of street crime and other decisions about improving the quality of life in comparison with formal institutions such as protective police force and law enforcement [2].

By giving useful knowledge about existing opportunities through links network, social capital facilitates the actions of individuals within the social structure [3].

According to Putnam [4] social capital is composed of elements of social life by which people can achieve their goals effectively. He believes that this form of capital is equally important to the other forms of capital.

Social capital is related to the values and norms emanating from group interaction and social ties among the nation and in turn engenders understanding and links relations [5].

Experts believe that increased social capital include faith, trust, hope for the future, relying on the society and its solidarity, social justice, prosperity, tolerance, patience, forgiveness and unity are the main strategies to achieve sustainable development in a society. The benefits resulting from membership in a group creates solidarity that makes it possible to obtain benefits. Hence, social capital is a means of access to economic and cultural resources through social communication [6].

In a society where social capital is high, the union and solidarity among members of society and their group spirit makes them to flow their economic capital for themselves and their society so that everyone can use its benefits [7].

If we consider the relationship between social capital and social networks that can create a sense of confidence and cooperation among people in their members, what becomes important is the role of institutions of civil society in the formation of this investment. Education is one of the key institutions which form of social capital, have been highlighted by many researchers.

Education, in modern societies, consists of both formal and informal parts. The formal sector includes the schools and universities, research and

educational institutes, and other forms of learning comprise its informal sector such as religious gatherings and workshops, learning through the media [8].

In a study entitled "The Relationship between the Curriculum of Higher Education and Social Capital," Author concludes that there is a significant relationship among the educational, economic, social objectives and needs assessment with the participation and trust in the social capital [9].

Theoretical Background

According to Putnam [4], social capital is composed of the constructive elements of the social life and if they join together people can achieve their goals. He believes that this form of capital has equal importance to the other forms of capital.

Eisenstadt believes that the most important issue in forming a society with suitable social capital is paying attention to trust, solidarity, and social participation of people. Without the unification and participation of people in the shade of trust, establishing new social order is impossible [10].

The set of norms which exist in social systems promote the level of cooperation among society members and also reduces the level of exchange and communication costs. In this definition, concepts such as civil society and social institutions are associated closely with the concept of social capital [11].

Creating social solidarity and the spirit of innovation which are the effects of educational organizations in the society can have a special impact in improving social relationships and social capital in the end; because most of the societies have different ethnic, racial subcultures and education can familiarize the young people from these minorities with the common culture of the society. Hence, a relative homogenous society with common values can be obtained [12].

Jiroux considers educators as transformational thinkers. This means that training activities cause a form of thought. Selecting and implementing appropriate teaching-learning methods as a key component of the curriculum, is very important in the formation and strengthening of valuable concepts in mind. In the process of teaching, methods and materials that teachers select should help students in their learning content [13].

Author in an article titled "Recognition of the concept of social capital in higher education" concluded that for promotion of social capital, the curriculum in higher education should be based on development of social capital components and needs of society [14].

Klein introduces nine elements including objectives, content, learning activities, teaching methods, materials and resource evaluation, time, space and grouping as the elements of the curriculum. The most common approach in this regard, considers for a curriculum or a particular syllabus and curriculum decisions involving these four elements: objectives, content, methodology and evaluation [15].

Teaching is an activity, but not any type of activity, but something which is done consciously and on the basis of a specific purpose that makes changes. Teaching is not easy. Teachers deals with different variables in teaching and through manipulation of different variables and results, tries to create a situation in which learning takes place [16].

The authority teachers have to make changes in teaching conditions and make the factors useful for teaching a lesson are teaching models that include problem solution patterns, pre-organizers, individual tutoring, social patterns and so on. These patterns act as plans [17].

Previous studies indicate that higher education despite its great quantitative development in the last decades has not been successful in self-actualization and development of social capital. This is also true about teaching practices that are considered an important part of the curriculum.

The purpose of this study is to provide a teaching model with an emphasis on identifying teaching obstacles, methods, and strategies to develop social capital among undergraduate students of medical sciences. For this purpose, the research question is as follows:

What kind of teaching method to enhance social capital can be developed among undergraduate students of Medical Sciences?

METHODOLOGY

The present study is qualitative and based on Grounded Theory approach which is an exploratory research method that allows the researcher to develop the theory of him/her. Given that this study is the first attempt to develop a teaching method based on social capital, using conventional methods of research was not possible. The only material used in this study was the collected opinions from people during interviews. In addition, these data were highly fragmented and contained many concepts and categories. For this reason, analysis of data required a model which is comprehensive as well as highly resilient and encompassing. As a result, grounded or fundamental method was used.

The statistical population included the undergraduate students of medical sciences who were studying the last semester in Public and Azad universities in Tehran during 2015. In qualitative method the number of interviews should be 10 at most, but in this study since the interviewees were at different disciplines from different universities, all data were collected through semi-structured interviews with 20 cases and after assuring saturation of data, the interview process was stopped since no new information was obtained. In the interview, 12 students were of public universities of medical sciences and 8 students were from Islamic Azad universities across the country from various medical fields. Sampling was done using purposeful method from favorable cases. That is, to select the participants education experts were asked to introduce the active students who obtained an average score higher than 17.

After carrying out preliminary coordination with individuals and setting a date, meetings were held at the university. Ten minutes before the start of meeting a complete description about the purpose of the study and drawing conclusions of it was explained. For having full information, by the permission of the interviewee, all sessions were recorded and transcribed. First, two general question of "how do you see social capital components of trust or participation among students?" and "how universities can expand social capital among students?" then researcher entered the subject of discussion and based on the responses given by the interviewee asks the next questions. During the meetings it was tried to prevent diversion of the subject without making sensitivity and to direct the interview just in the preset framework. Interviews were held on an individual basis and each interview was between one to two hours.

To analyze the data, open, axial and selective data coding were used.

In the open coding using comparison technique and asking the data related to the phenomenon under study, data were named and categorized with scrutiny. After removing unrelated speeches to the subject, data were classified into tens of paragraphs and similar paragraphs were put next to each other and concepts were drawn out.

In axial coding, the analyzed data using open coding joined each other by new methods. At this stage the link was made among a category and its subcategories. This was done by implementing a paradigmatic model of "obstacles, strategies, and outcomes" and putting together the similar concepts.

In selective coding the core category was selected and its relation with other categories was found. The relations were validated by finding

confirming instances. After determining the main category, the sub-categories were related to the main categories according to the paradigmatic model. Then, the final research model was developed in which the core relationship with other concepts was shown.

To determine the accuracy of the information obtained, four factors were used: credibility, transferability, dependability and verifiability [24]. Validation was done by sharing the findings with participants to review them. For the transferability, it was tried to consider the diversity in sampling and different fields are used. Also, in connection with the verifiability process, it was attempted to make teachers agree on the perceptions. And finally, in reliability, interviews were continued until data saturation. Also for the reliability of the study, Kirk and Miller note taking methods were used.

The aim of the research, study procedures, risks and benefits of the research, the voluntary nature of participating in the study, were told to the participants. The right to quit research at any time was considered for the participants. After providing the necessary information they were assured that the information obtained will be kept confidential and results will be published without naming them. During the interview process, a short break was given for the interviewee fatigue and they were not forced to continue the interview.

FINDINGS
In open coding 98 concept codes were obtained from all the comments of respondents. In the axial coding, second level concepts were obtained. In this stage the number of concepts had a sharp decline. In the end, the main category was identified in selective coding, that is teaching methods.

To draw a paradigmatic model 98 codes were divided to three parts: obstacles, strategies and results.

1. Obstacles
The number of first-level concepts about the obstacles contained 40 items that were reduced to 5 codes at the secondary level including "Ease of classical teaching methods, students' reluctance to participation and real activity in the class, too much emphasis on introduced resources by the instructor, instructor's lack of skill in using new technology, and students focus on content expressed by the instructor". In the following, each of the sub-themes is presented with a sample of interviewees' statements.

1.2. Ease of classical teaching methods and students' tendency to note-taking
The student prefers as less sources as possible are introduced for study and final exam. If this sources in class notes, the students' satisfaction increases. This

look of students to educational program must change (interviewee No. 10).

1.3. The reluctance of students to real activity and participation in class

Students mostly participate in the class to avoid official problems due to absence in the course. They don't like to participate in other activities such as seminars or extra classes. (Interviewee No. 15)

1.4. Strong emphasis on introduced resources by the instructor

In lower education levels it is observed that students prefer that extra books and references are not introduced by the instructor and the class discussion be considered sufficient (Interviewee No. 12).

1.5. teachers' lack of skill in using new technology

During the university education, not enough attention is paid to learning aids such as projectors, applications such as PowerPoint and the like. While using new teaching methods by these equipments will affect the coherence and role taking of people in a group (Interviewee No. 8)

1.6. students' focus on content expressed by instructor

The familiarity with original language including English is weak among some instructors therefore the possibility to use new sources is not very much (Interviewee No. 11)

2. Solutions

The number of first-level concepts in the context of the proposed strategies in teaching were 30 items that were reduced to 6 codes of "delegating responsibility to the students, introduction of efficient and up to date curriculum resources, the use of student engaging teaching methods, teaching along with the modern science, evaluation of student activities and the use of new technology".

2.1. delegating responsibility to the students

Doing works in group is a skill which requires practice. The academic environment is the most suitable ground for this issue because of interaction of ideas and its collective nature (Interviewee No. 1)

2.2. introduction of efficient and up to date curriculum resources

Offering up to date course materials and avoiding teaching old pamphlets, teaching attractively and proposing useful subjects can help the students to trust their instructor and believe the usefulness of the taught material (Interviewee No. 6)

2.3. the use of student engaging teaching methods

If teaching methods are modified appropriately and new techniques are used in teaching, the students and other beneficiaries reach a good picture of the higher education and the society's trust and industry in particular to the output of higher education system increases (Interviewee No. 7).

2.4. teaching along with the latest science of the world

The teaching method should be new and does not repeat the old practices. It is also important to note that teaching method should be selected along with the latest science of the world (interviewee No. 2)

2.5. evaluation of students' group activities

Students should have a significant role in the teaching process and instructors should evaluate them. However, instructors are not familiar with the new techniques of class administration and since their knowledge is not updated they avoid discussion-based techniques (Interviewee No. 16).

2.6. the use of media and new technology

Book is very expensive in Iran and the students are not supported to buy books. Therefore, one cannot expect multiple resources to be introduced by the instructor in such circumstances. Instructors should move towards introducing new electronic sources which are cost-effective and the intended diversity can be achieved. (Interviewee No. 12).

RESULTS

The number of concepts which were obtained at the first level of coding was 18 that were reduced to 5 items including creating positive attitude toward group activities, shaping group atmosphere, strengthening the spirit of questioning and criticism in the group, promoting accountability in the students, and motivating the students to participate in group activities.

2.7. creating positive attitude toward group activities

Selecting teaching methods that emphasize on the role of students can encourage students' activity in the class (Interviewee No. 13)

2.8. shaping group atmosphere

If the student participates in the problem solving classes, s/he will practice taking responsibility and working in group as main components of social capital (Interviewee No. 4)

2.9. strengthening the spirit of questioning and criticism in the group

The instructor should try to create a class atmosphere in which students are not afraid of criticizing and asking questions (Interviewee No. 20).

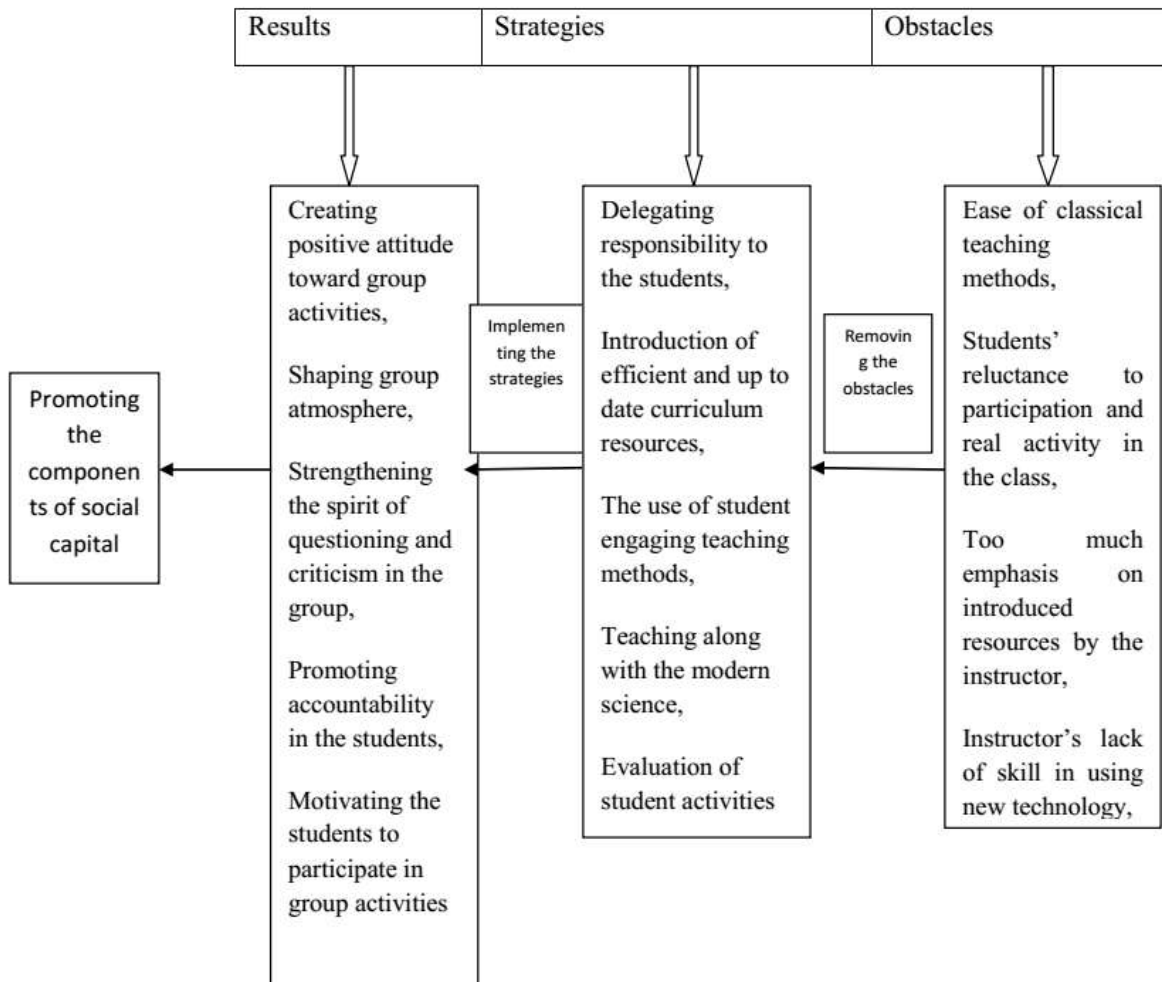2.10. promoting accountability in the students

The teaching method of some instructors is stagnant and cannot draw the attention of the

students to the class. The student should take responsibilities such as presentation of seminars or directing problem solving classes so that his/her engagement increases.

2.11.   motivating the students to participate in group activities

Promoting group work in the class ultimately leads to strengthened group work spirit among the graduates (Interviewee No. 18)

In the end, the final model of study which is a combination of the main category, obstacles, administrative strategies, and their results is developed as the following:

DISCUSSION

Teaching method is of the things that directly affect social capital. Changes in teaching methods can have a substantial impact on social capital of students. Of all the elements of the curriculum teaching methods has the highest communication with the students and is close to the concept of social capital more than any other component.

Teaching methods should be more oriented towards learning and active teaching. Active learning is a learning that occurs with minimal interference of external factors. In this method of learning, the instructor is at the same level of other factors such as the learning environment and educational resources and only acts as a facilitator of learning. This method is

considered effective on social capital when the student is involved actively in the process of learning and learning occurs under his/ her control. Solati *et al*. [18] conducted a study on the medical sciences students and found that the more students engage in the teaching process, it provides more utility for the students.

The findings suggest that current teaching methods not only does not encourage people to attend and participate actively in class, but also damage the relationship between society and universities and affects the mutual trust between the university and society.

Flick and Williamson's research [19], concluded that diversity in teaching methods promote

social capital among students such as group learning and learning services.

The first result obtained after changes in teaching practices and student engagement is the institutionalization of the collective spirit among students that puts them in touch with other groups and social institutions and practices socialization of the individuals consciously and unconsciously.

A study on the satisfaction of students of dentistry in Shiraz from two methods of instruction based and participation based found that students are more satisfied with the latter and their level of knowledge has increased [20].

Predicted changes for curriculum give this opportunity to the planners to use other leverages to affect the socialization process of the student and accelerate it.

The findings suggest that the decline in social capital after admission to the university is about to happen. University can be a good platform for many activities that potentially increase social capital. Thus, curriculum planners should not look at it apart from the curriculum. It is better that teaching practices that promote social capital in the form of a clear curriculum be included in syllabus to avoid personal taste in the teaching classes.

Marjaee [21] in a study titled as "social capital among students of universities" examined social capital differences between people with different educational experiences. The results showed that in many of the components there was a significant relationship between education and social capital. In other words, by transition from undergraduate to PhD, a significant decrease was observed in many of the components of social capital. In addition, students' social capital has an inverse relationship with the years of their academic education.

Current practices in curriculum implementation, more than anything suffers from stagnation and recession. Necessary reforms in this area should be designed and implemented. To make positive changes in curriculum implementation, it is recommended that active teaching approach is used. In this procedure, instead of providing a set of concepts and facts that are sometimes unrelated, attempt to provide students with learning activities that involve them in real problem solving situations. Merghati Khoei *et al*. [22], in a study at Tehran University of Medical Sciences concluded that educational programs should be revised to use modern methods which enhance learning and student satisfaction.

Moein *et al*. [23], in a study among medical students at dermatology course found that, group discussion is a valuable strategy for teaching and learning with active participation of students which results in independent learning and deep understanding of the course material, more attention to the key points and creating a joyful learning environment .

So when designing curriculum, teachers should be given the freedom to act according to the knowledge and the passion and perseverance of students in class, and to be able to instantaneously change the complete teaching program. In addition to helping to educate people, this gives them the opportunity to play a role in the learning process depending on their learning experiences. In this method, the learner should be considered independent and the learning process alternatively changes from the students to the teacher, and vice versa.

In active learning approaches based on the student's participation, if the aim is promoting social capital group membership should have a key role. Actual activity as a group and individual responsibility of each member about the outcome of group will allow group members to practice the key components of social capital such as trust, partnership and solidarity and prepare for real life.

Hence, planners of educational curricula in the field of medical sciences should take the components of social capital into account. The proposed model can be provided for the universities of medical sciences as a map for designing and developing teaching methods based on development of social capital. Instructors can carry out similar studies to complete this model in different levels and disciplines.

Addressing teaching methods on a large scale extended the concepts and categories of this study. This was particularly problematic in the coding of concepts.

Requests for interviews were very time consuming and a lot of requests were left unanswered because of instructors' occupation.

The number of concepts discussed in the interview was too much and sorting them was time consuming. Due to the involvement of interviewees in the process of teaching at the university, refining the answers to remove the biased items required scrutiny and attention.

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