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Students Guided Learning for Medical Students - Novel Teaching for the 21st Century

Lior Naamati-Schneider and Adaya Meirovich

Abstract

The changing demands of the Western organizational and academic world are having a great impact on the medical profession. Adapting medical students' learning to as-yet-unknown future needs requires changes in learning objectives, methods, and assessment and the development of new skills. Students frequently express initial opposition to paradigms that require them to take responsibility for their learning process and invest greater effort. They may be uncooperative, and this may impede their training and the adoption of such changes in other courses. This qualitative study examines changes in attitudes toward student-centered learning among 120 medical students who experienced student-guided learning (SGL), a novel method emphasizing the student's primary role and self-expression, in a 3-unit course titled Patient–Therapist Relationship. The data were gathered from reflective journals the students kept during the course. The application of SGL methods resulted in changes in students' attitudes toward adopting new teaching methodologies. Their initial opposition was expressed in low motivation, lack of cooperation, negative attitudes toward assignments, and lack of motivation toward adopting changes. At the end of the course there was an improvement in students' openness to change, and they showed a greater desire and higher motivation to adopt new paradigms and innovative methodologies.

Keywords: Student-Guided learning (SGL), student centered learning (SCL), Life Long Learner, Innovative teaching methods, medical education

1. Introduction

The outbreak of the COVID-19 pandemic in December 2019 heightened the need of education systems worldwide to adapt rapidly to a changing situation and to the demands of the Western business and academic world. Even before that, the relevance of the teaching methods and content in academe was becoming increasingly crucial. To adapt learning to future needs that are changing and largely unknown today, we must change its goals, methods, and assessment [1, 2].

Academic institutions are more than transmitters of knowledge to students: They are also agents of cultural change. As such, they must consistently ensure that students develop new skills [3]. Adapting to the labor market requires 21st-century skills, such as problem solving in real time, synthesizing existing knowledge with

changing situations, integrating material studied and applying it as part of a team, acquiring managerial abilities, and engaging in self-regulation [2]. Changes in teaching methods, combined with training in learning skills and construction of a learning toolbox, will enable students to remain relevant in the work force and become lifelong learners [4–6].

The outbreak of the COVID-19 pandemic created an opportunity for quickly introducing such changes by taking advantage of a variety of constraints, such as digital platforms and synchronous and asynchronous distance learning. This chapter describes an intervention program in the undergraduate course titled Patient–Therapist Relationship, taught in the Department of Management of Service Organizations, Health Track. The intervention changed the teaching and learning in the course from traditional frontal teaching to active student-centered learning. This chapter describes the effect of the intervention on students’ perceptions, as revealed in reflective journals kept during the course, and students’ willingness to adopt innovative teaching methodologies in the wake of this experience.

2. Theoretical background

The dominant conceptual approach today [7] is that most learning should be active so as to enhance the student’s abilities and adapt them to the period and its demands [8]. This approach challenges both teachers and students because of the total change in the setting of learning goals and the perception of the learning process. The change requires a shift from teacher-centered pedagogical approaches to approaches in which the students and the development of their learning abilities are at the center. This shift constitutes an important element in adapting academic teaching to 21st-century needs and ensuring that the student becomes a lifelong learner [9].

Student-centered teaching methodologies have existed for years to various extents in educational institutions, but most teachers view them with suspicion and prefer to cling to traditional methodologies [10]. Resistance to student-centered methodologies exists at three levels: teachers, students, and the teaching environment. Many faculty members fear losing their power as the sole authority in learning and knowledge [11]. They also find it difficult to adapt curricula and courses to more innovative methods [12]. Students are deterred by the intensive work deriving from the requirement that they invest resources and time and take personal responsibility for the course of their studies [13]. In addition to this resistance to change on the part of faculty and students, often the academic learning environment does not make it easy to implement the necessary changes. Among these obstacles are budget constraints, a large number of students in a course, fear of students’ objections to the many course requirements, research pressure, and other academic demands. All these create strong competition for the teacher’s time and abilities [14]. These sources of resistance constitute an obstacle to implementing broad changes in academe, where the extent to which changes are adopted varies from one discipline to another.

3. The needs of the 21st century in medical education

The requirements of medical systems worldwide have changed in recent years along with global changes in the needs and demands of the general labor market [2]. The localized organizational changes that health organizations are undergoing as part of becoming patient-centered affect the character of the medical staff, medical management, and paramedical professions and training [15]. These changes require health-related higher education to adapt accordingly. This adaptation includes

broadening students' set of abilities and skills and making them lifelong learners [16]. The set of abilities required in medical education includes coping with dilemmas, solving complex problems, teamwork capability, self-regulation, medical literacy, individual and managerial flexibility, and the ability to cope effectively daily with the challenges of a new and constantly changing world, under conditions of pressure and ever-expanding knowledge [17, 18].

The changes in the labor market's requirements and the consequent need to change teaching methods have moved the center of gravity in the class from the teacher to the student. This change is the basis for the change in approach in learning strategies. Student-guided learning (SGL) refers to a methodology that combines several teaching methodologies, such as problem- or project-based learning (PBL), cooperative learning, and creating a toolbox of skills. In using SGL, the student is guided by the teacher from the very beginning through the stages that include choosing a topic for the course and the learning materials, setting goals, students' acceptance of responsibility for the process of learning, and presentation of the product of learning. This methodology requires the teacher's constant supervision and oversight while leading the student on a long, active journey to the goals defined in the course [1].

Methodologically, SGL includes a combination of project-based learning [19] and models of learning collaboration. This combination enables the students to achieve a shared goal [20]. Achieving the goal requires positive interdependence among the students, in which each individual is responsible for his or her own learning and for the contribution to the group [21]. This learning emphasizes the process of learning and is characterized by active learning. The teacher is not the sole source of knowledge, and the learning is led by the students' choices, with direction from the teacher.

In SGL, the teacher sets the learning goals and broad topics that constitute the values and learning framework of the course. The study topics problem and cases to be written by students and will be presented within these boundaries. The teacher guides the student throughout the process [22].

This methodology has nine stages that constitute points for guidance and interface between teacher and student: describing an individual's experience, turning the experience into an event or dilemma, making the student an expert in the selected area/building a knowledge base, learning collaboratively, discussing and decision-making as a group, carrying out a summary project, presenting the project by the group, and evaluating the project by peers. This semester-long process is accompanied by maintenance of a reflective journal that describes the process of individual and group learning [1].

4. The current study and its methodology

This qualitative study used a case study of the implementation of an intervention program in the course titled Patient–Therapist Relationship. The case study, through observations and data gathering, makes it possible to draw conclusions regarding human activity [23]. The data gathered describe patterns and attitudes that enable understanding of broader phenomena. Analysis of the data gathered in categories at two time points makes it possible to form generalizations and deductions on the basis of quotations from the data [24, 25].

4.1 Participants

The participants were 120 students in a three-credit course titled Patient–Therapist Relationship. The students are second-year undergraduates in the department of Management of Service Organizations, with a subspecialty in health.

The course content pertains to the patient–therapist relationship in health contexts and how it is meaningful in healing and support.

The data in this chapter were gathered in four courses over two academic years. The courses were taught simultaneously by both authors. The data were gathered at two time points: the beginning of the course, before the students had any experience of the teaching method, and the end. The students were told that the materials would be analyzed anonymously and that they were free to refuse to allow the use of the materials for research purposes.

4.2 The intervention program

The SGL methodology—a combination of problem-based learning (PBL) and collaborative-learning methodologies—is at the heart of the intervention program. This intervention program focuses on a dilemma in the profession, based on the personal experience of the student, with an emphasis on experiences related to patient–therapist relationships. The use of this personal basis make possible an immediate and personal connection to the course content combined with acquisition of knowledge and development of critical thinking in a PBL environment [19, 26]. The students, divided into groups, examine the experience/dilemma from three perspectives characteristic of the course: the clinician, the patient, and the organization. Each student is responsible for sharing with the group the data he or she has gathered at each stage of the program. In this way, the students become experts within the group on their knowledge area. Sharing with the group enables a broadening of the members' knowledge, collaborative learning, discussion, and group decision-making. The process makes the students experts in their area as they prepare to present the final project (including the intermediate stages) to the other students in the course. The final project presents by digital visual mean—for example, a digital poster or a digital thought map—the examination of the selected experience from three perspectives (therapist, patient, organization). The last stage of the program is the peer review, in which the students evaluate each other in accordance with guidelines set in advance [1]. Students are also asked to maintain a reflective journal and to record in it their individual learning process in each stage of the project, describing their experiences, feelings, attitudes, and challenges.

4.3 Data analysis

The students' reflective journals were collected and analyzed at two time points: the start of the course and its conclusion. The texts underwent thematic analysis, which leads to categorization of the text. The relations between the categories were examined and mapped, and the two time points were compared. In this process, information is constructed and interpreted [27, 28]. Categories were constructed by identifying main themes and consolidating them in main categories. The following is a description of the main categories and the change in the students' perceptions and attitudes regarding the innovative learning methodology.

5. Findings

The content analysis of the reflective journals revealed six main categories: active learning as opposed to passive learning, previous experience of active learning, feeling of capability, collaboration, a learning experience, and adopting innovative learning methodologies. The analysis of the findings is presented by category in relation to the two time points.

5.1 Active learning as opposed to passive learning

At the first time point, most of the students wrote that their previous experience was largely of passive learning. Thus, for example, they noted that the structure of the course was new to them and that they were used, generally, to other teaching methods:

I'm full of anxiety about the learning because it is much easier to learn in frontal learning. I prefer getting the material from the teacher and not having to search for some of the material.

This is the first time that I personally am learning with this method. Usually the teacher gives us the material for the whole semester.

I'm already used to learning differently, used to receiving the material, learning for an exam and then for a final exam, or doing homework on the material taught and then taking a final exam.

My feelings about the manner of the course are complicated. They evoke various feelings because it's a new style and different from what we were used to until now.

The method I jibe with the most is the traditional method of frontal teaching: learning on set days and hours in a classroom facing the lecturer with exercises and an exam—unlike independent learning in which there is no set time for study and therefore I tend to procrastinate until the last minute.

At the first time point, the students pointed out their anxiety and fear regarding the innovative teaching method and the assignments and difficulties that lay ahead, in their view, from studying in this manner.

When we started the course I walked into the classroom with anxieties and fears. I'm a third-year student and I'm making up a course with second-year students whom I don't know. It's hard enough already ... definitely with this method of learning, with many assignments in a group.

True, this is an opportunity for me to contend with the fear and face the commitment that the course requires, but I'm not certain I'll be able to express myself fully.

I was anxious because in the exam we are required to regurgitate in writing material that we've learned throughout the semester, whereas a paper requires you to gather articles from various sources and sometimes even in other languages (something that in itself frightens me).

In the examination of this category at the second time point, it seemed that most of the students related to the course as a positive experience. They revealed that, despite their initial concerns, they succeeded in coping well with the learning processes and the assignments.

In the beginning it seemed beyond my abilities and rather exhausting, but after we got the first assignment I discovered that it was actually a pleasant and interesting assignment. This teaching method made me remember an event and reconstruct the feelings I experience during it and thus gave me a different perspective on the event.

In the beginning there was anxiety over this learning format which is not necessarily for an exam, “blind learning” just to answer questions automatically, but rather, really, a true process of learning with yourself, with other students in the class as a team, and actually causes the student to be more involved in the assignments in the course of the semester and also to be more involved socially and mutually with the group members.

The students also pointed out the difficulties; these included the level of difficulty involved in active learning, the level of involvement in the course, and the time commitment in such learning.

It's much easier to get the material from the lecturer.

It was hard for me to think on my own how I should find the material.

Undoubtedly this course requires a greater investment than do other courses that are taught frontally. We had to invest more time.

5.2 The experience of active learning

Already at the first time point, students with previous experience of this method noted that their prior positive experience was a mediating factor that eased their learning.

From my past experience, when I wrote a paper it helped me to understand the material better. And like this project, it helps me because every student can say what helps them learn, more or less, and also the students have an opinion about which method is good for studying.

I already had experience with a course in which you had to work independently, so I was less scared.

5.3 Adopting innovative teaching methodologies

Adapting to innovative learning methodologies often sparks antagonism and concerns, as was evident in the reflective journals and was presented above. The students wrote that they were used to relying on learning by receiving material from the lecturer. This learning process was seen as easier, in comparison to the process of active learning. This worldview is presented in the analysis of the students' reflections at the first time point:

There's tremendous pressure of papers during the semester. Therefore I prefer not to be part of a large project but simply to write an exam.

It's preferable to write one exam, and that's it. I have no desire to work like this.

It scares me to deviate from the usual drill of an exam and to write a paper instead. True, the lecturer explained in class that the paper would be submitted in a process that she supervised, but still there is the concern that I will make a mistake and will not do things properly because I'm not used to writing papers. I think it takes more time than studying for an exam, because there's always something that [needs to be] changed or improved.

At the second time point, toward the end of the semester, because of the positive experience the students had in the course, one can see a change in their attitudes and their willingness to adopt innovative methodologies. Thus, for example:

We've come a long way, but I have the desire to learn more.

I feel that I want to learn like this in other courses.

I really loved how the course was taught. The assignments we have had thus far give us an opportunity to express ourselves and are not too burdensome.

Nevertheless, students still note difficulties and challenges, which they ascribe to this method and which will make it difficult, in their view, to adopt innovative methods in the future.

The planned teaching method is interesting and breaks up the routine, and in my view it will be nice and will lead to a deeper understanding of the material. In my view, when it is fun to learn, the material is absorbed better. But on the other hand, getting used each time to a different learning method can be confusing and take up a lot of time.

5.4 The learning experience

This category appeared in the analysis of the reflections at the second time point, in which the students wrote their views of the learning experience in the course in comparison to courses with frontal teaching.

The method of study is a breath of fresh air in comparison to the lessons that are frontal only and tend to be boring. In the lesson there is lively discussion by everyone, with personal experiences that contribute to the learning atmosphere.

I am very satisfied that there is a course like this in which the teaching method is different from the usual. It allows you to formulate opinions, feelings, and various reflections.

For example, this exercise enables me to speak freely, think, and be creative. I feel free and confident that I can speak and also recommend and suggest new ideas.

The course is different and I interpret this as refreshing and as a different way of learning that has thought behind it. On the one hand, it really enabled us, the students, to contend with assignments that require thought and to be active partners in the lesson and the entire course, and not just to mark our attendance. I see this as something very positive, especially since it's a very important lesson for the profession we chose and which we'll probably work in in the future.

5.5 A sense of capability

The beginning of the course was accompanied by fears, concerns, and even hesitation regarding the capability of completing the course and meeting its goals. "I asked not to have to present." "I really didn't think I would succeed."

Such feelings were not evident in the analysis of the reflections at the second time point.

Although I didn't think that I would want to present, I enjoyed it and wasn't even concerned about presenting before the president of the college.

I surprised myself while presenting the project.

I think that the time has come to work this way, to prepare both an individual paper and a group paper and to present what we prepared, and to be exposed directly to the responses and questions of the audience, lecturers, students.

5.6 Teamwork/collaborative learning

The analysis of the reflective journals at the first time point showed that the students related also to the category of collaborative learning and to teamwork, and noted diverse attitudes toward them.

I like to work in a group because there is support from the team members and exposure to a range of different ideas. Also, if there is something I didn't understand in a certain way, there are other people who can interpret it.

I see the work in groups as something slightly threatening: Beyond the grade that is given for it, it requires interaction and contending with other people. I'm a person for whom it is easy to express myself when I am not in a group. Perhaps I am different from many others and my coping is different in this respect, but I'm a little hesitant about it.

At the second time point, too, the students addressed this category, indicating the problems and challenges in relation to it, on the basis of their experience. Their opinions regarding this category were varied. Some wrote that they prefer working on their own, whereas others wrote that the experience of learning in groups was positive for them.

For me the work in groups was less convenient because to this day I have proved to myself that I work better on my own. I rely only on my own work ... I felt that most of the work anyway fell on my shoulders so that the work didn't take less time, it took even longer than usual.

It's hard for me to coordinate a time that is convenient and suits everyone to sit and discuss the assignment. And in the end, even when you succeed in setting a time with everyone a lot of time is wasted on chitchat—unlike my own work in which I work according to a timetable that is convenient for me.

Learning in groups helps a lot in understanding the material because each one explains the material in a way that everyone can understand.

6. Discussion

The analysis of the students' reflective journals at two time points, the beginning and end of the course, showed a change in attitudes. At the start of the process, their attitudes toward adopting innovative methodologies of teaching were based on perceptions and attitudes formed in response to their acquaintance with traditional teaching methods. At this stage, the students' worldview was determined,

inter alia, by the teaching methods customary in the process of socialization, starting with the preschool, through elementary school, high school, and academe. These attitudes shaped their perception of teaching methods and contributed to their resistance and concerns regarding the adoption of other teaching methods.

During the course, while using SGL methodology, and at the end, the students displayed a change in attitudes, perceptions, and experiences in relation to adopting active teaching methodologies and the process of individual learning. Also, students who had studied in the past with this method, or who had prior experience with various methods of active learning, showed from the start less resistance and greater willingness to cooperate with this teaching method.

Support for the findings can be found in earlier studies on the student-centered class, according to which students reveal behaviors characteristic of the stages of mourning and trauma at being forced to take responsibility and a degree of independence in learning as an alternative to the use of traditional learning methodologies [29].

The students' responses are subjective. Some went through all the stages smoothly, whereas others remained a longer time in a specific stage, or in several of them. Passage through the various stages of the program is essential and constitutes a substantial part in the student's growth and turning into a lifelong learner [30, 31]. Therefore, the aim is to lower the level of resistance, on the one hand, and to ease the process of independent learning, on the other. Students should be allowed this type of learning as part of a structured, guided framework [23].

The students' attitudes toward collaborative learning also changed. In the beginning of the course many students wrote that because of the difficulties and challenges in the process, they rely primarily on themselves and prefer to carry out the assignments and learning processes on their own. At the end of the experience, the students wrote that the collaborative learning contributed to their feeling of vitality, their openness, and their ability to learn from others. As the learning process continued, the students were exposed through a collaborative learning framework to a variety of opinions of group members. This process exposed the complexity of the dilemma and the understanding that it might have various interpretations and various solutions [32].

7. Conclusions

This study examined the change that took place in the attitudes of students following an intervention program that changed the teaching framework in a course from frontal learning to SGL methodology, which combines PBL with collaborative learning [1]. The study demonstrated how attitudes can be changed and resistance and concerns can be reduced with regard to adopting innovative teaching methodologies, while creating a positive collaborative experience of active learning.

The use of SGL methodology, which enables individual learning as described in this chapter, offers a learning framework that is structured but sufficiently broad, combined with leadership and clear guidance by the lecturer. Choosing the dilemma relevant to the course content on the basis of students' experiences (personal stories) enables them to connect individually to the topic studied and to maximize their learning abilities. These experiences contribute to changing the perceptions and obstacles to adopting innovative teaching methodologies like this one. In addition, they expose the students to a positive experience of learning and to a sense of capability. All these lead to the removal of students' resistance and to their willingness and desire to adopt innovative active-learning methodologies.

It is very important to adapt learning and teaching methods to the changing needs of the labor market and the academic world. Adopting these methodologies, in which the emphasis in learning moves to the student and the lecturer's role becomes more of a support and guide, encountered students' resistance, negative attitudes, and low motivation to adopt them [12, 26, 31].

Widespread adoption of such methodologies in academe, and in medical education in particular, is a step toward making academe more relevant than ever and training graduates suited to a changing market. Adopting methodologies of active learning such as SGL from the earliest stages of professional training may increase the potential for change and transform students into lifelong learners, thus enabling graduates in the field of health to cope better with the future needs of the health system.

Author details

Lior Naamati-Schneider* and Adaya Meirovich
Department of Management of Service Organizations, Health Track, Hadassah
Academic College, Jerusalem, Israel

*Address all correspondence to: liorna@hac.ac.il

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