

## Original Article

# Dental students' experience of hidden curriculum: A qualitative study

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## Abstract

**Background & Objective:** Hidden curriculum plays an effective role in developing professionalism and improving the quality of education in the fields that constitute the structure of the health system, such as medicine and dentistry. The present study was designed to clarify the experience of dental students with a hidden curriculum at Babol University of Medical Sciences, Babol, Iran.

**Material & Methods:** This study was conducted with a qualitative approach and using the conventional content analysis method in 2021. The participants consisted of 15 dental students studying in the 3<sup>rd</sup> to 6<sup>th</sup> academic years at Babol University of Medical Sciences, Babol, Iran, who were selected by purposive sampling method. Data collection continued until reaching saturation using semi-structured interviews.

**Results:** The mean age of the participants was  $23.8 \pm 1.7$  years, of which 66.7% were women and 66.7% were men. In this research, 100 codes were obtained that were categorized into 14 subthemes and 6 main themes. The main themes included the professor's educational characteristics, professor's professional characteristics, interactions and communication, attitude and expectations, rules, facilities, and educational environment.

**Conclusion:** The results of our study showed that teaching and assessment methods, professional behaviors, and professors' role modeling, as well as the interactions between the professors, students, and staff, their attitudes, educational environment, and rules, should be taken into consideration before planning the hidden curriculum for dental students.

**Keywords:** dental students, hidden curriculum, qualitative study

## Introduction

Learning is one of the most important psychological dynamic processes in whole life, through which people acquire new knowledge or skills and change their thoughts, feelings, attitudes, and performance (1, 2). Learning is the foundation of all human progress in today's world (3).

Curricula, as one of the most determining tools and elements for realizing the general goals and missions of education, have a special place and importance in the higher education system (4). The main mission of the curriculum in educational systems is to achieve the ultimate goals of that system and train a desirable human being (5). Universities of medical sciences are responsible for the education and training of students who, after graduation, can strive to improve the health of

society by performing their professional duties and adhering to the specific principles this profession requires (6).

In general, in every educational center, whether at the higher education level or the secondary and elementary level, three types of curriculum can be involved, namely written and overt curriculum, hidden curriculum (covert), and null curriculum. These three categories have formed the new realm of curriculum as a specialized field in today's world (7). The hidden curriculum is the collection of learning beyond the formal university curriculum and is learned from the behavior and attitudes of the professors. In the hidden curriculum, students receive teachings through being exposed to the culture or



the set of relationships and connections that govern the university environment (8).

A hidden curriculum is neither written anywhere nor taught by any professor, rather the educational environment of the university, with all its features, transfers it to students and is felt by everyone. Executive skills, punctuality, dealing with difficult situations, problem identification, and teamwork, as well as being able to master the professors and learning to flatter and influence the professors to obtain a grade, are among the positive and negative skills that are learned by students through the hidden curriculum (9-11).

Hidden curriculum to a significant extent determines what is the basis of the sense of value and dignity in all students and has more impact on the compatibility of students with professors than the written curriculum. In educational systems, students learn highly valuable experiences, most of which are not specified in the planned curricula. Students learn more than what is taught in a systematic and organized manner through universities and professors, and the overt curriculum is only a small part of what is taught in universities (11, 12). Despite the role of the hidden curriculum in the growth and formation of professional ethics over time, there is a lack of relevant qualitative studies in the fields that constitute the structure of the health system, such as dentistry. For example, Mosallanejad et al. conducted a qualitative study (13) to investigate the experience of medical and paramedical students regarding hidden curriculum. Azadi et al. performed qualitative research (14) to explain the experience of nursing and midwifery students about the impact of hidden curriculum on their learning process.

It is necessary to explain the experiences of dental students in the field of hidden curriculum, which can be an indicator of the quality of education and care in medical education centers (15). Dentistry is a field that requires very high practical skills, and dental students are trained at the bedside for a long time during their studies. The hidden curriculum can play an effective role in transferring the professional values of this field (16). Therefore, considering the importance of the hidden curriculum in improving the quality of education in medical students and the lack of related qualitative research in this field, especially for dental students, the present study was designed to explain the experience of dental students regarding hidden curriculum in Babol University of Medical Sciences, Mazandaran Province, Iran.

## **Material & Methods**

### ***Design and setting(s)***

This qualitative study was conducted using content analysis on dental students of Babol University of Medical Sciences in 2021.

### ***Participants and sampling***

In Iran, dental education takes about 6 years, and the clinical internship starts in the second year. Eligible students for this study were those who were studying in their third year of study. The participants were selected by purposeful sampling method to obtain a wide range of students' views, understanding, and experiences with maximum diversity.

### ***Tools/Instruments***

Students who were familiar with the concept of hidden curriculum were invited to the interview. To this aim, before inviting them to the interview, they were asked, "Have you ever heard the term "hidden curriculum"?" If they answered yes, an interview session was scheduled. The researcher continued to collect data until reaching data saturation; in other words, data collection was continued up to the time that it did not lead to the addition of a new concept (10).

### ***Data collection methods***

The data were recorded by holding semi-structured interviews with 15 students of the Faculty of Dentistry, Babol University of Medical Sciences, at the place agreed upon in advance. Before starting the interviews, the researcher introduced himself and explained the objectives of the study. Informed consent was obtained from the participants. The interview started by establishing communication and gaining the participant's trust. Afterward, questions such as "Could you introduce yourself?" and "What is your experience with the curriculum?" were asked to start communication and warm up to build trust and start the interview.

The following questions were asked based on both the initial answers of the students and the interview guide questions. Interview guide questions were designed by the research team according to the definition of the hidden curriculum. Some of the examples of the interview questions were as follows: "What is your experience of the educational system of your university in general?", "Through which method do you acquire the necessary knowledge and skills in your training course?", "What motivates you to study?", "What makes you enjoy learning?", and "Tell us about your experience in these matters".

If needed, exploratory questions such as "What do you mean by this?", "Could you please elaborate", or "How did you feel about this?" were asked. Interviews lasted for 50 min, and at the end of each interview, participants were given the opportunity to add anything that had been left unsaid. Immediately after each interview, the recorded material was transcribed. The participants' non-verbal messages, such as tone of voice, silence, emphasis, crying, and sighing, were also recorded.

### Data analysis

The interviewer listened to the recorded interview several times and studied to better understand the feelings and experiences of the participants. He added his observations to the transcripts in the form of field notes and analyzed them. To obtain accurate and reliable information, Graneheim and Lundman's seven-step systematic method, including preparing data, coding text, reviewing codes with text, categorizing and developing themes based on similarity and fit, revising the themes and comparing them again with the data to ensure the strength of the codes, identifying the themes with detailed and deep reflection, comparing with each other, and reporting the findings to process the data (17).

### Rigor

To ensure the accuracy and strength of the data, credibility, dependability, confirmability, and transferability were taken into consideration. To ensure credibility, it was tried to select participants with a maximum variety of experiences. Sampling continued until reaching data saturation. The most appropriate semantic unit was selected. A panel of experts was used to support concept generation or coding of themes. Moreover, member checking was carried out. For this purpose, the transcripts and the extracted codes were presented to the participants and they commented on their correctness, after which, any case of discrepancy was considered and checked. The researcher contacted the participants to clarify the unclear cases or if it was

obscure what the participants meant. All work steps (transcription, coding, and theme extraction) were reviewed by one of the members of the research team.

The criterion of dependability indicates the ability to repeat the data at similar times and conditions, which can be considered similar to the reliability criterion in quantitative research. The dependability of research refers to the degree of consistency, reliability, and stability of the research findings. In other words, the reader of the research should be able to evaluate the adequacy of the analysis by following the researcher's decision-making processes. The dependability of the research was checked using an external audit, that is, a detailed examination of the data by an external observer (for external check) to increase the level of stability.

Confirmability was achieved by fully explaining the stages of the research, including data collection and analysis and formation of themes, to provide the possibility of research audit by the audience and readers. Furthermore, several research colleagues were informed of the process of doing the work (for peer check) to confirm the accuracy of the research procedure.

To facilitate transferability, the researcher provided a clear description of the context, the methods of selecting participants and their characteristics, data collection, and the analysis process so that the reader could judge the applicability of the findings in other situations. By providing rich and detailed findings along with appropriate citations, transferability was increased.

### Results

The participants of this research consisted of 15 dental students with a mean age of  $23.8 \pm 1.7$  years. Males accounted for 66.7% of the participants. The subjects had at least 6 semesters of study experience in dental school. The maximum number of interviewees ( $n = 8$ ) were in the 11<sup>th</sup> academic semester. Only one of the participants was married and the rest were single (Table1).

**Table1.** Demographic characteristics of participants (n = 15)

Participants	Gender	Age	Marital Status	Residency Status	School	Semester
Participant 1	Male	25	Single	Non Dormitory	International Branch	12
Participant 2	Male	25	Single	Non Dormitory	International Branch	12
Participant 3	Male	25	Single	Non Dormitory	International Branch	12
Participant 4	Male	28	Single	Dormitory	Dentistry	11
Participant 5	Male	23	Single	Non Dormitory	Dentistry	11
Participant 6	Female	23	Single	Non Dormitory	Dentistry	11
Participant 7	Male	23	Single	Dormitory	Dentistry	11
Participant 8	Female	23	Single	Non Dormitory	Dentistry	11
Participant 9	Female	24	Single	Non Dormitory	Dentistry	11
Participant 10	Female	25	Single	Non Dormitory	Dentistry	11
Participant 11	Male	25	Married	Dormitory	Dentistry	11
Participant 12	Male	23	Single	Non Dormitory	International Branch	11
Participant 13	Female	22	Single	Non Dormitory	Dentistry	9
Participant 14	Male	23	Single	Non Dormitory	Dentistry	9
Participant 15	Male	21	Single	Dormitory	Dentistry	7

In this study, 100 codes were extracted from the interviews, which were placed in 6 category and 14 subcategory (Table 2, Appendix 1).

**Table 2.** Themes and subthemes extracted from interviews with participants about hidden curriculum experience

Theme	Subtheme
Professor's teaching characteristics	Teaching
	Assessment
Professor's professional characteristics	Professional Behavior
	Unprofessional behavior
	Being a role model
Interactions and communications	Communication between students
	Communication between students and professors
	Communication between students and staff
Attitudes and expectations	Professors' attitudes and expectations
	Students' attitudes and expectations
Rules	Facilitator
	Inhibitor
Educational facilities and environment	Educational facilities
	Educational environment

#### *Professor's teaching characteristics*

One of the themes extracted from the students' experiences about the hidden curriculum was the teaching characteristics of the professor, which was placed in two subthemes of teaching and assessment.

#### *Teaching*

Experiences such as the professor's teaching method, expression techniques, applicability of the materials, focusing on common issues, and doing practical work were explained in the hidden curriculum. Participant No. 1 stated, "...How well can that lecturer or professor convey the material to me? I mean, I may already know a subject myself, but once a lecturer teaches that subject so badly, I get mixed up what I already know, and this will reduce the pleasure I should enjoy from that subject."

#### *Assessment*

The assessment theme involved correspondence of the taught materials with the exam questions, evaluation of the professor during the course, focus on common clinical cases in the evaluations, and questions and answers of the professor. Participant No. 13 said, "...Well, no one likes to take exams and we all hate taking exams, but I think it has a positive effect. Maybe we don't realize it now, maybe we all say at the moment how much exams are bad, I wish there were no exams, but in the end, it has a positive effect on our learning."

#### *Professor's professional characteristics*

Another theme extracted from students' experiences of the hidden curriculum was the professor's professional characteristics, which was categorized into three subthemes of professional behavior, unprofessional behavior, and being a role model.

#### *Professor's professional behavior*

Professor's respectful treatment, commitment, conscientiousness, sense of responsibility, sincere and respectful treatment at the bedside, and proper behavior with the patient were expressed by the participants. Participant No. 1 said, "...Of course the professor's appealing teaching method is a matter of attention, but their morals are very important in teaching; that is, if the professor teaches with a good mood as if they are interested in the subject, I learn that concept much better and I enjoy it". Participant No. 4 stated, "...Professors who try to be friendly with students make the students interested in that field and so students learn much more and become more motivated."

#### *Professor's unprofessional behavior*

The participants pointed out the professor's lack of follow-up, strictness and inappropriate behavior, improper behavior in front of the patient and with the patient, and non-timely attendance at the patient's bedside. Participant No. 1 stated, "...When the professor blames a student that his/her learning is not complete, the student does not dare to ask questions because they know that the professor does not treat them well". Participant No. 14 said, "...It can be either orally and the professor tells the student that "You don't know anything", or if you ask the professor to come to check, he'll either be late or won't come, or if he comes, he does all the work himself and doesn't let the student continue and finish the task."

#### *Professor as a role model*

The participants mentioned that they followed the professor in terms of their discipline in entry and exit, following dress codes, communication with colleagues and patients, bedside management, and consultation

process with patients. Participant No. 14 said, "...Since we interact with professors in all matters, this inevitably affects the student's behavior and the professors' behavior with patients will shape our behavior with our patients in the future."

#### *Interactions and communications*

Students' experiences in the hidden curriculum included how they interacted and communicated with each other, professors, and staff.

#### *Student-to-student communication and interaction*

Intimacy between students, having studious friends, support from classmates, communication and support between friends in practical tasks, having a sense of popularity among classmates, the existence of a constructive competitive atmosphere, and support from senior students were extracted from participants' experiences in the hidden curriculum. Participant No. 1 said, "...Students' lives are influenced by the friendships they establish with their friends. If they are rejected, they will be disappointed and isolated and won't be able to communicate later, and their self-esteem will be low in all aspects of their lives. But if they are accepted, the energy they get will make them more active."

Participant No. 12 pointed out, "...Well, for example, we who are in the dormitory get to know different types of beliefs, different types of culture in other places, the ideas of others and their morals, so we can have both destructive and beneficial benefits from this. For example, a person can have a bad effect on you and lead you to addiction or towards a series of antisocial behaviors."

#### *Communication and interaction between students and professors*

Respect and communication between professors and students were mentioned as the other subtheme of interactions and communication in the hidden curriculum. Participant No. 5 said, "...Students feel more comfortable talking and can raise most of their questions and concerns, and even if they are weak in a subject, they can easily say that. For example, if I see that my professor isn't really strict and behaves friendly, then I can raise my problems more comfortably." Participant No. 5 said, "...Professors who behave well with me, I respected them more. A professor who paid attention to us, we also felt more intimacy, whether in work mistakes or work successes, and we talked very easily with them."

#### *Communication and interaction between students and staff*

Communication with ward nurse and trained staff were mentioned in this subtheme. Participant No. 1 stated, "...When a nurse treats you with respect, it reflects on your work; that is, when you know that the nurse will treat you well one day or you don't know if the training staff likes you, you feel good when you want to refer them or you return. You feel better and don't nag. If this is not the case, you'll return with anger and hatred. This has an effect on our performance as well as our view of the people in the community with whom we will be in contact later."

#### *Attitudes and expectations*

Attitudes and expectations were other themes extracted from dental students' experiences, which included two subthemes of professor's attitude and expectations and student's attitude and expectations.

#### *Professor's attitude and expectations*

The professor's superior behavior, understanding of the students, considering students their coworkers, expectations for education and assessment, positive attitude towards the field of study, valuing, and high motivation of the professor were placed in this subtheme. Participant No. 4 said, "...I have experienced it too and heard from many peers; for example, some professors look down on us very obviously, and because of this one gets stressed and cannot progress much." Participant No. 5 mentioned, "...The professor who wanted the student to follow up and he himself followed up on the student's topics would make the student grow, and I myself was a person who tried to be at the center of the professor's attention with my efforts. This feeling means more intimacy, and the fact that we are working together as colleagues and we are going to be colleagues in the near future would make me show a higher level of work."

#### *Students' attitudes and expectations*

The student's interest, motivation, and attitude toward their field of study and professional future were among other experiences mentioned in the hidden curriculum. Participant No. 4 said, "...It definitely has a very good effect because when we are interested in a field, we learn a lot and we also like to work and pursue it." Participant No. 4 stated, "...Well, many students first start this field and then get interested, but many don't get interested at all, they just do it now because of its income and social status."

#### *Rules*

Rules were another theme stated in the hidden curriculum extracted from the students' experiences. The

rules were placed into two subthemes, namely facilitating and inhibiting.

#### *Facilitating rules*

The rules and regulations of the department for entry and exit, discipline, dress code, professional behavior, and accelerating the clinical process of the patient were facilitators in the hidden curriculum. Participant No. 3 stated, "...*The fact that we had to enter the college at a certain time every day was very good and it made us be disciplined during our student years.*"

#### *Inhibiting rules*

Strict and unreasonable rules in the department, the presence of law-breakers, injustice in observing the educational rules, lack of supervision of the student's behavior at the bedside, and non-compliance with the rules were extracted from the students' experiences. Participant No. 5 said, "...*When we were supposed to be in the department at half past eight, but we were threatened that we might be dropped because of a delay of, say, a quarter of an hour, it caused us all to be stressed and mental conflict for a while.*"

#### *Educational facilities and environment*

Educational facilities and environment were other themes derived from the participants' experiences of the hidden curriculum.

#### *Educational facilities*

The presence/lack of educational facilities and equipment, the presence of defective facilities and equipment, the availability of materials and equipment, non-appropriateness of educational units with students' features (e.g., left-handedness) were some of the issues raised by the students. Participant No. 7 stated, "...*Definitely it is very effective in learning, especially in molding materials. For example, a task that we can do with one-tenth of the difficulty should be done with ten times the difficulty and we'll be stressed to see if it works well or not, especially if it's on a patient.*"

#### *Educational environment*

The educational appearance and atmosphere were determined as other subthemes. In this regard, participant No. 14 said, "...*The appearance of the department has an effect on both the patient and the student. We work here for a while and we get used to it, but the appearance of a department, for example pediatrics, has a great effect on the patient, and when the patient cooperated better, we can work more smoothly.*"

## **Discussion**

The present study explained the experiences of dental students regarding the hidden curriculum in six themes, namely the professor's educational characteristics, professor's professional characteristics, interactions and communication, attitude and expectations, rules, facilities, and the educational environment.

The findings of the present research indicated that according to the experiences of dental students of Babol University of Medical Sciences, the educational characteristics of the professor (i.e., teaching and assessment style) should be considered in explaining the hidden curriculum. Based on the findings of a study by Yazdan Panah et al., possessing expression techniques, using teaching skills, mastery of the professor on the subject area, the relevant educational materials, and the professor's interest in the subject were among the most important indicators expressed by the students. A professor with expression and teaching skills can convey concepts well and make students interested in the subject (11). According to Najafi Kalinani et al., effective teaching alone is not enough to ensure students' success. Without proper assessment, their achievements may decline and they may become dissatisfied (12).

The professor's professional characteristics, namely professional behavior, unprofessional behavior, and being a role model, were among the other important themes of the hidden curriculum from the students' point of view. Based on the experiences of the participants, the moral atmosphere created by the professor in the educational and clinical environment plays a crucial role in the formation and strengthening of students' professional ethics. By observing professor's behavior and moral values, students covertly and implicitly imitate them over time. In a study by Mir Moqtadai and Ahmadi, it was found that the personal and professional values of students would change over time with the help of overt and hidden training. According to the clinical results, the basis of changes in professional ethics and clinical experiences was to model the behavior of professors (15).

The findings of this research showed that professors should not only possess the ability to communicate concepts and foster creativity during lessons but also establish a motivational environment through their professional ethics. Jahani et al. reported that students believe that if the professor's supervision during the process of training and clinical training, the possibility of teamwork, being skillful in implementing methods, and clarifying the goals of the clinical training for the student

are weak, they would wander and be indecisive, and as a result, their learning decreases (18).

The ability of professors to support students is one of the necessary qualities for a professor. Talking about the tensions in the clinical training environment, Hofman et al. highlighted the importance of the professor's role in supporting and satisfying students with their physical, mental, and emotional presence. To maximize the amount of learning, professors should provide a peaceful and tension-free environment for education and avoid triggering stress in students during clinical internships (19).

Students' experiences in the hidden curriculum included how they interacted and communicated with each other, professors, and staff. Professors' proper interaction with students leads to motivation, while their inappropriate behavior causes discouragement in students. This finding was confirmed in a study conducted by Javadpour and Rahimi (20). Sedgwick and Rougeau (2010) also stated that students' communication with each other and employees had a direct effect on the creation and development of professional ethics in them (21).

The attitudes and expectations of professors and students effective in the hidden curriculum included the attitude toward the field of study and future career, the professor's positive attitude toward the student, the professor's appropriate/inappropriate expectations from the student, and the student's expectations of the field of study and future career. Hosseinzadeh et al. stated that motivation and interest as well as communication skills were the highest effective indicators in learning. Experienced professors, compared to less experienced ones, showed more attention to how they performed in the classroom and how to provide training and assessment. Cold and unfriendly relationships, the professor's lack of attention to the student's mental and personal conditions, discriminatory treatment, and underestimating the importance of the field can be enumerated as some of the factors raised by the students in their interviews (22).

Educational rules and regulations that could be either facilitating or inhibiting were the other extracted experiences of students mentioned in the hidden curriculum. Karimi et al. reported that inhibiting rules could have a negative effect on advancing educational goals and student participation in teaching (23). Amini et al. found that variables such as teaching methods, assessment, personality traits, physical environment, rules and regulations, and critical thinking were effective in the hidden curriculum. It was also found that rules and regulations were not effective to the same degree in all

fields; in some fields, such as information technology and health, the impact of rules in the hidden curriculum was greater (24).

Educational facilities, equipment, and environment also had an effect on the hidden curriculum. Qaraei et al. claimed that the lack of proper educational facilities increased the cost and time spent by students for learning (25). Mortazavi et al. reported that the five factors of environment and facilities, the consequence of improving educational processes, educational and managerial deficiencies, professor assessment, and improvement of the quality of education were influential in the quality of clinical education. Educational environment and facilities, especially hospital equipment and consumables, have made a significant contribution to improving education. Hosseinzadeh et al. also found that the physical conditions of the classroom were effective on students' participation in the class activity (26).

## Conclusion

In explaining the experiences of dental students of Babol University of Medical Sciences, this research showed that in the hidden curriculum, it was necessary to consider the professor's teaching method, evaluation, professional behavior, and being a role model, as well as the interaction of the professor, students, and staff, their attitudes, the rules, and educational environment.

## Ethical considerations

This research obtained the ethics code ID IR.MUBABOL.HRI.REC.1400.106, and the interviews were conducted and recorded with the consent of the participants.

## Artificial intelligence utilization for article writing

No.

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## Conflict of interest statement

The authors declare that there is no conflict of interest.

## Author contributions

M.Sh.: Data collection, data analysis and interpretation, article preparation

Z.Gh.Sh.: Study idea, study design, data analysis and interpretation, preparation of the article, critical review of the article before submission, review of the article and final approval before submission to the journal

M.N.: Study idea, study design, data analysis and interpretation, preparation of the article, critical review of the article before submission, review of the article and its final approval before submission to the journal

A.Kh.: Study idea, critical review of the article before submission, review of the article and its final approval before submission to the journal.

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### Data availability statement

The data set analyzed in the current study is not publicly available, but it can be obtained from the corresponding author upon request.

### References

1. Craig CJ, Flores MA. Fifty years of life in classrooms: an inquiry into the scholarly contributions of Philip Jackson. *Journal of Curriculum Studies*. 2020;52(2):161-76. [<https://doi.org/10.1080/00220272.2019.1659417>]
2. Wren DJ. School culture: exploring the hidden curriculum. *Adolescence*. 1999;34(135). [<https://pubmed.ncbi.nlm.nih.gov/10658866/>]
3. Neville P, Zahra J, Pilch K, Jayawardena D, Waylen A. The behavioural and social sciences as hidden curriculum in UK dental education: a qualitative study. *European Journal of Dental Education*. 2019;23(4):461-70. [<https://doi.org/10.1111/eje.12454>]
4. Mariño RJ, Ghanim A, Barrow SL, Morgan M V. Cultural competence skills in a dental curriculum: a review. *European Journal of Dental Education*. 2018;22(1):e94-100. [<https://doi.org/10.1111/eje.12263>]
5. Martimianakis MAT, Michalec B, Lam J, Cartmill C, Taylor JS, Hafferty FW. Humanism, the hidden curriculum, and educational reform: a scoping review and thematic analysis. *Academic Medicine*. 2015;90(11):S5-13. [<https://doi.org/10.1097/ACM.0000000000000894>]
6. Nyquist JG. The hidden curriculum in health professional education. *The Journal of chiropractic education*. 2016Mar;30(1):48-9. [<https://doi.org/10.7899/JCE-15-20>] PMID: PMC4770996.
7. Higashi RT, Tillack A, Steinman MA, Johnston CB, Harper GM. The 'worthy' patient: rethinking the 'hidden curriculum' in medical education. *Anthropology &*

- Medicine*. 2013;20(1):13-23. [<https://doi.org/10.1080/13648470.2012.747595>]
8. Hafler JP, Ownby AR, Thompson BM, Fasser CE, Grigsby K, Haidet P, et al. Decoding the learning environment of medical education: a hidden curriculum perspective for faculty development. *Academic Medicine*. 2011;86(4):440-4. [<https://doi.org/10.1097/ACM.0b013e31820df8e2>]
9. Neve H, Collett T. Empowering students with the hidden curriculum. *Clinical Teacher*. 2018;15(6):494-9. [<https://doi.org/10.1111/tct.12736>]
10. Mason M. Sample size and saturation in PhD studies using qualitative interviews. In: *Forum qualitative 10. Sozialforschung/Forum: qualitative social research*. 2010;11(3). [<https://doi.org/10.17169/fqs-11.3.1428>]
11. Yazdanpanah A, Ghasemi A, Siamian H, Javadian M. The study of the attributional style of the students studying in Mazandaran university of medical sciences in 2008-2009. *Journal of Mazandaran University of Medical Sciences*. 2011;21(82):84-8. [<http://jmums.mazums.ac.ir/article-1-826-en.html>]
12. Najafi KM, Sharif F, Jamshidi N, Karimi S. Students' perceptions of effective teaching in nursing education: a qualitative study. *Iranian Journal of Nursing Research*. 2011;5(19):6-15. [<http://ijnr.ir/article-1-776-en.html>]
13. Mosalanejad L, Parandavar N, Rezaie E. Students' experience about the hidden curriculum: a qualitative study. *Journal of Rafsanjan University of Medical Sciences*. 2014;13(2):111-24. [<http://journal.rums.ac.ir/article-1-1475-en.html>]
14. Azadi Z, Ravanipour M, Yazdankhahfard M, Motamed N. The role of hidden curriculum in transferring training skills to assistant patient in nursing and midwifery students at Bushehr university of medical sciences in 2016. 2018;1;9(1):61-71. [[https://edj.ajums.ac.ir/article\\_81715.html?lang=en](https://edj.ajums.ac.ir/article_81715.html?lang=en)]
15. Mirmoghtadaie Z, Ahmady S. The effectiveness of blended learning in the field of medical education: Explaining dimensions and components based on stakeholder experiences. *Journal of Medical Education Development*. 2019;12(33):26-33. [<http://dx.doi.org/10.29252/edcj.12.33.42>]
16. McCarthy T. *Howard hawks: the grey fox of Hollywood*. Grove Press; 2000. [[https://books.google.com/books/about/Howard\\_Hawks.html?id=JEvgRkHdEjkc](https://books.google.com/books/about/Howard_Hawks.html?id=JEvgRkHdEjkc)]
17. Graneheim UH, Lundman B. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today*. 2004;24(2):105-12. [<https://doi.org/10.1016/j.nedt.2003.10.001>]
18. Jahani J, Rostami M, Marzooghi R, Torkzadeh J, Jouybari L. Nursing faculty members' views on the application of critical thinking skills in postgraduate students' curriculum: a qualitative study. *Journal of Nursing Education*. 2020;9(5):65-74. [<http://jne.ir/article-1-1227-en.html>]

19. Hoffman KG, Donaldson JF. Contextual tensions of the clinical environment and their influence on teaching and learning. *Medical Education*. 2004;38(4):448–54. [<https://doi.org/10.1046/j.1365-2923.2004.01799.x>]

20. Javadipor M, Rahimi B. Ranking hidden curriculum components: the viewpoint of students studying at faculty of education and psychology of Shahid beheshti university. *Journal of Higher Education Curriculum Studies*. 2017;7(14):131–56. [[20.1001.1.25382241.1395.7.14.7.4](https://doi.org/10.1001.1.25382241.1395.7.14.7.4)]

21. Sedgwick MG, Rougeau J. Points of tension: a qualitative descriptive study of significant events that influence undergraduate nursing students' sense of belonging. *Rural Remote Health*. 2010;10(4):199–210. [<https://pubmed.ncbi.nlm.nih.gov/21121700/>]

22. Hosseinzadeh K, Sarchami R, Moradabadi H, Kazemzadeh AM. Faculties' perspective toward students' participation in teaching: a qualitative study. *Development Strategies in Medical Education*. 2018;5(1):42–53. [<http://dsme.hums.ac.ir/article-1-163-en.html>]

23. Karimi Z, Ashktorab T, Mohammadi E, Abedi H, Zarea K. Resources of learning through hidden curriculum: Iranian nursing students' perspective. *Journal of Education and Health Promotion*. 2015;4(57). [<https://doi.org/10.4103/2277-9531.162368>]

24. Amini M, Tamani far MA, Mashaalahi nejhah Z. A survey on the position of hiddne curriculum from students' viewpoints at kashan university of medical sciences. *Journal of Medical Education Development*. 2015;8(18):1–14. [<http://zums.ac.ir/edujournal/article-1-230-en.html>]

25. Gharaei S, Kargoza S, Amirchakhmaghi M, Gholami H. Students' viewpoints of Mashhad Dental School about educational problems a qualitative study. *Education Strategies in Medical Sciences*. 2015;8(2):123–30. [<http://edcbmj.ir/article-1-783-en.html>]

26. Mortazavi SM, Sharifirad G, Mohebi S. Identifying qualitative factors affecting the quality of clinical education. *Journal of Arak University of Medical Sciences*. 2020;23(4):550–69. [<https://doi.org/10.32598/jams.23.4.6159.1>]

**Appendix 1.** A sample of the main category, subcategory, initial code, and participant statement

Main Category	Subcategory	Initial code	An example of a participant statement
Professor's teaching characteristics	Teaching	<ul style="list-style-type: none"> <li>•Inappropriate teaching by the professor and reduced learning</li> <li>•Professor's good presentation technique and increase learning</li> <li>•Applicability of educational materials and increasing study motivation</li> <li>•The professor's focus on rare cases instead of common ones and reduced learning</li> <li>•Management of the patient by the professor and non-participation of the student and reduced learning</li> <li>•Disagreement of professors in educational issues and creating mistrust</li> </ul>	How well can that lecturer or professor convey the material to me? I mean, I may already know a subject myself, but once a lecturer teaches that subject so badly, I get mixed up what I already know, and this will reduce the pleasure I should enjoy from that subject
	Assessment	<ul style="list-style-type: none"> <li>•Inconsistency of the taught material with exam questions and stress</li> <li>•Teacher formative evaluation and learning enhancement</li> <li>•Less focus in assessments on common clinical cases and reduced learning</li> <li>•Questions and answers by the teacher and increasing the motivation to study</li> </ul>	Well, no one likes to take exams and we all hate taking exams, but I think it has a positive effect. Maybe we don't realize it now, maybe we all say at the moment how much exams are bad, I wish there were no exams, but in the end, it has a positive effect on our learning
Professor's professional characteristics	Professional behavior	<ul style="list-style-type: none"> <li>•Teacher's respectful behavior and creating motivation</li> <li>•Having the teacher's commitment and creating interest</li> <li>•Conscientiousness of the teacher and sense of responsibility and increasing learning</li> </ul>	Professors who try to be friendly with students make the students interested in that field and so students learn much more and become more motivated

	<ul style="list-style-type: none"> <li>•Professor's sincere behavior at the bedside and increasing self-confidence</li> <li>•Respectful behavior of the professor at the bedside and increased cooperation between the patient and the student</li> <li>•Professor's good behavior with the patient and increasing motivation</li> </ul>	
Unprofessional behavior	<ul style="list-style-type: none"> <li>•Inappropriate interaction between the professor and the student at the patient's bedside and causing stress and frustration</li> <li>•Inappropriate behavior of the professor with the patient and causing embarrassment to the student</li> <li>•The teacher's inappropriate behavior with the student and the loss of the patient's trust</li> <li>•Professor not coming to the patient's bedside on time and causing stress and frustration</li> </ul>	When the professor blames a student that his/her learning is not complete, the student does not dare to ask questions because they know that the professor does not treat them well
Being a role model	<ul style="list-style-type: none"> <li>•Being a role model for a professor in bedside management</li> <li>•Irregularity of the professor in attending the clinic and irregularity of the student</li> <li>•Being a role model for the professor in relation to colleagues and patients</li> <li>•Being a role model for the professor in the field of proper dressing</li> </ul>	Since we interact with professors in all matters, this inevitably affects the student's behavior and the professors' behavior with patients will shape our behavior with our patients in the future
Interactions and communications	<ul style="list-style-type: none"> <li>•Student acceptance among classmates and increasing the quality of performance</li> <li>•Intimacy between students in the dormitory and improvement of morale</li> <li>•Supporting classmates and increasing learning</li> <li>•Communication between students in practical work and increasing self-confidence</li> <li>•Competitive atmosphere among students and increase learning</li> <li>•Reducing intimacy between students and reducing learning</li> <li>•Learning risky behaviors from each other such as addiction</li> <li>•Communicating with higher year students and increasing learning and reducing stress</li> <li>•Supporting other students in doing clinical work and creating a sense of peace</li> </ul>	Students' lives are influenced by the friendships they establish with their friends. If they are rejected, they will be disappointed and isolated and won't be able to communicate later, and their self-esteem will be low in all aspects of their lives. But if they are accepted, the energy they get will make them more active
	<ul style="list-style-type: none"> <li>•Respect between professors and increased learning</li> <li>•Inappropriate communication between professors and reduced learning</li> <li>•Inappropriate communication between professors and stress</li> <li>•Inappropriate communication between professors at the</li> </ul>	Professors who behave well with me, I respected them more. A professor who paid attention to us, we also felt more intimacy, whether in work mistakes or work successes, and we talked very easily with them

	<p>bedside and student's discomfort</p> <ul style="list-style-type: none"> <li>•Good communication between professors and taking students seriously</li> <li>•Arguments between professors and a decrease in the professor's respect among students</li> <li>•The professors are not coordinated in presenting the treatment plan and create a sense of confusion</li> <li>•Management of the group manager in establishing proper communication between professors</li> <li>•Friendly relationship between professor and student and increasing learning</li> </ul>	
<p>Communication between students and staff</p>	<ul style="list-style-type: none"> <li>•Improper communication of ward nurses and reduced learning</li> <li>•Improper communication of the ward nurse and creating a feeling of discouragement</li> <li>•Proper communication of employees and creating a sense of empathy</li> <li>•Non-cooperation of education staff and discomfort of students</li> <li>•Emphasizing education staff in following up on administrative matters and creating stress</li> <li>•Intimate communication between ward nurses and increased learning at the bedside</li> </ul>	<p>When a nurse treats you with respect, it reflects on your work; that is, when you know that the nurse will treat you well one day or you don't know if the training staff likes you, you feel good when you want to refer them or you return. You feel better and don't nag. If this is not the case, you'll return with anger and hatred. This has an effect on our performance as well as our view of the people in the community with whom we will be in contact later</p>
<p>Attitudes and expectations</p>	<p>Professors' attitudes and expectations</p> <ul style="list-style-type: none"> <li>•Proper understanding of the student by the teacher and increasing motivation and reducing stress</li> <li>•Inappropriate view of the professor to the student and reduced learning</li> <li>•The view of the student being a colleague with the professor and increasing self-confidence and learning</li> <li>•Proper expectations of the professor from the student and increasing learning and reducing stress</li> <li>•Inappropriate expectations of the professor in the assessment and causing stress and frustration</li> <li>•Proper expectation of the professor in teaching and increasing the amount of learning</li> <li>•Professor's positive attitude towards the field and creating interest</li> <li>•Appreciating the professor and increasing learning and self-confidence</li> <li>•High motivation of the professor and increased learning</li> </ul>	<p>The professor who wanted the student to follow up and he himself followed up on the student's topics would make the student grow, and I myself was a person who tried to be at the center of the professor's attention with my efforts. This feeling means more intimacy, and the fact that we are working together as colleagues and we are going to be colleagues in the near future would make me show a higher level of work</p>

	<ul style="list-style-type: none"> <li>•Interest in money and social status instead of interest in the field and reduced learning</li> <li>•Student interest and increased learning</li> <li>•Student's interest and increasing satisfaction and quality of patient treatment</li> <li>•Student motivation and more practice</li> <li>•High student knowledge and increased self-confidence</li> <li>•Difficulty of clinical work and stress</li> <li>•Student responsibility and increase learning</li> </ul>	<p>Well, many students first start this field and then get interested, but many don't get interested at all, they just do it now because of its income and social status</p>
<p>Rules</p>	<p>Facilitator</p> <ul style="list-style-type: none"> <li>•Rules and regulations of the ward and regularization of students and increase of learning</li> <li>•The professor's insistence on the student's regular attendance</li> <li>•Order in the ward and increase learning</li> <li>•Rules and regulations of the department and speeding up the process of clinical management of the patient by the student</li> <li>•Rules and regulations of the ward and appropriate dressing for the student</li> <li>•Regularity of the ward and professional behavior of the student</li> </ul>	<p>The fact that we had to enter the ward at a certain time every day was very good and it made us be disciplined during our student years</p>
	<p>Inhibitor</p> <ul style="list-style-type: none"> <li>•Strict and unreasonable rules in the ward and creating stress</li> <li>•Injustice in complying with educational laws and creating dissatisfaction among students</li> <li>•Failure to monitor the student's behavior at the bedside and reduce learning</li> <li>•Disobeying the rules and causing student confusion</li> </ul>	<p>When we were supposed to be in the ward at half past eight, but we were threatened that we might be dropped because of a delay of, say, a quarter of an hour, it caused us all to be stressed and mental conflict for a while</p>
<p>Educational facilities and environment</p>	<p>Educational facilities</p> <ul style="list-style-type: none"> <li>•Existence of educational facilities and equipment and increasing learning</li> <li>•Lack of educational tools and facilities, reducing learning and increasing stress</li> <li>•Existence of defective facilities and equipment and reduced learning and self-confidence</li> <li>•Lack of facilities and decrease in visits of patients in the bed and decrease in learning</li> <li>•Availability of materials and equipment and increased motivation</li> <li>•Inadequacy of educational units for left-handed students</li> <li>•Lack of sufficient equipment and materials and reduced teacher's motivation to teach</li> <li>•Existence of defective facilities and equipment, causing stress and frustration</li> <li>•Lack of educational tools and facilities, creating frustration and reducing concentration</li> </ul>	<p>Definitely it is very effective in learning, especially in molding materials. For example, a task that we can do with one-tenth of the difficulty should be done with ten times the difficulty and we'll be stressed to see if it works well or not, especially if it's on a patient</p>

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	<ul style="list-style-type: none"><li>•Lack of facilities and equipment and the patient's objection to the student</li><li>•Lack of facilities and equipment and reduction in the quality of treatment</li></ul>	
Educational environment	<ul style="list-style-type: none"><li>•Proper appearance of the department and increased patient cooperation</li><li>•Dissatisfaction of the professor with the atmosphere of the college and the decrease in the quality of teaching to the students</li><li>•Beautiful appearance of the ward and stress reduction</li></ul>	The appearance of the department has an effect on both the patient and the student. We work here for a while and we get used to it, but the appearance of a department, for example pediatrics, has a great effect on the patient, and when the patient cooperated better, we can work more smoothly

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