



## A comprehensive model of hidden curriculum management in medical education

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### Abstract

**Introduction:** Hidden curriculum plays a main role in professional learning, formation of professional identity, socialization, moral development and learning values, attitudes, beliefs, and knowledge in learners, so it needs to be managed. Although the majority of the theorists believe in the existence of a hidden curriculum and its greater effect and sustainability compared to the formal curriculum; none has proposed a comprehensive model or approach for its management. This study aimed to design a hidden curriculum management model in medical education.

**Methods:** In this study, the authors used the theory or model construction methodology to synthesize a hidden curriculum management model in medical education. According to Walker and Avant; this methodology includes the following three steps for synthesizing the model: specifying focal concepts, reviewing the literature, and organizing concepts into an integrated and efficient representation.

**Results:** The results of the study showed that numerous factors affected the hidden curriculum including environmental factors (professional, organizational), human factors (teachers, peers and staff), and formal curriculum and learner's influenceability filter which bear important messages for learners, staff and teachers. To manage the hidden curriculum, in addition to the above factors, it is necessary to manage knowledge and the learners' learning in an educational institution.

**Conclusion:** This study revealed that to achieve the desired performance in students, the formal curriculum reform is not sufficient. Moreover, other factors such as environmental factors, human factors, learner's influenceability filter, and knowledge management should also be taken into account. The hidden curriculum management model can be used for training and educating the staff and students with the desired performance in any educational institution.

**Keywords:** Hidden curriculum, Management, Medical education

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### Introduction

Hafferty (1998) defined the hidden curriculum as "a set of influences that function at the

level of organizational structure and culture" (1). Therefore, Hidden curriculum refers to the implicit values, behaviors and norms in an

educational environment (2). It is an implicit curriculum that involves knowledge, attitude, value (3, 4), and behaviors that are transferred into the cultural structure without conscious intention (5, 6) and awareness of students and teachers (7, 8).

Although most contemporary publications state that the history of a hidden curriculum in medical education dates back to the study of Hafferty and Franks in 1994 (9), they assert that this concept was first used in medical education a decade earlier by sociologists Jack Haas and William Shaffir in a study on the new curriculum of McMaster Medical School (10).

In the late 1800s, sociologists began studying medicine as a profession, and since the late 1960s they have documented loss of professionalism in medicine. However, medical organizations neither approved nor thought of this critically. In studies performed in the early 1990s, researchers believed professional ethics in medicine was in decline, and the hidden curriculum became a tool by which teachers and policymakers could realize the cause of this decline (10).

Since the advent of the hidden curriculum in medical education, many studies have been published in this domain; all of them have to some extent emphasized its existence and significance in learning important subjects like ethics (11-13), professionalism (14-16) and its effect on formation of the students' personalities (2, 17-21). Another important issue is the value conflict that students encounter in the clinical setting. There is a gap between what students already know before entering university and what they learn during pre-internship and the reality of the internship phase, which creates a contradiction in value. The reason for this contradiction can be the conflict between formal learning and students' perceptions of the real environment as well as between speech and the behavior of faculty members. Therefore, students receive sophisticated messages that confuse them in their roles (22). Although the hidden curriculum plays a key role in the socialization process, formation of students' professional identities, ethical growth and in general performance as a member of the profession, educators and policymakers have underestimated the significance of the hidden curriculum and its management (4, 23).

Although there has not been a comprehensive study to manage the hidden curriculum, liberals (5) and those who adopt critical (24) and resistance approaches (25) believe that the hidden curriculum is manageable and must be managed. According to these two approaches (liberal and critical), there are places in which

the hidden curriculum delivers messages to the learners. According to liberals, these places include latent messages in the formal curriculum, educational institutions and classrooms (26). On the other hand, critical theorists believe that the latent messages are in the formal curriculum, evaluation and class organization (23). Based on resistance theory, the hidden curriculum can be managed by the Influenceability filter or frame of reference of learners. None of the existing research has embarked on studying hidden curriculum management. Therefore, this study aimed at designing a hidden curriculum management model in medical education to train the graduates with the desired outcome performance.

## Methods

In this study, the theory or model construction methodology was used to synthesize a hidden curriculum management model in medical education. In this approach the existing information about a phenomenon will be collected and the related concepts will organize into a network.

To this end and according to Walker and Avant (27), three steps or phases were used to synthesize the model:

### **Step one- specifying focal concepts to serve as anchors for the synthesized theory or model:**

In this stage of the study, the phrase "hidden curriculum management" was selected as a focal concept. While many studies have been published in the hidden curriculum domain, none has used the hidden curriculum management concept. This concept was used for the first time. Most of the theories related to hidden curriculum implicitly believe that hidden curriculum is manageable, but they do not directly use the term "hidden curriculum management". The purpose of this study in using this term was to control the adverse and unintended impact of learning in the educational environment and training the graduates with the desired performance.

### **Step two- reviewing the literature to identify the factors related to focal concepts and to specify the nature of relationships:**

In this step, the search was conducted in two phases. First, content models of hidden curriculum and its different components were searched and examined. Second, to manage each component of the hidden curriculum, a targeted search on related resources was conducted. Finally, a number of hidden curriculum components and necessary interventions to manage each component were determined. Based on the given concept and the questions posed for searching, different databases and sites like "Google scholar", "PubMed", "CINAHL", "Elsevier", "Springer",

the keywords “Hidden curriculum”, “Unwritten curriculum”, “Unintended curriculum”, “Hidden curriculum management” were used individually and in combination with other keywords like “Model” and “Theory”. On the other hand, the term “Medical Education” was taken into account during the searching process.

**Step three- organizing the concepts and statements into an integrated and efficient representation of the hidden curriculum management in medical education:**

In this step, in order to synthesize the model, were integrated the fragmented pieces of knowledge. Using the creative synthesis method, the concepts obtained from previous steps that included hidden curriculum components and the necessary interventions to manage them were designed in a theoretical model.

**Results**

The recent model of hidden curriculum management shows the impact of effective factors on learning during schooling and the socialization process which include environmental and human factors, the formal curriculum, and learner’s influenceability filter. Although knowledge management is not a new discourse in science, it has never been used in the literature on hidden curriculum. Taking into consideration that knowledge is a combination of explicit and tacit knowledge and that the major

part of knowledge transmitted by the hidden curriculum is tacit knowledge, we used Nonaka and Konno’s Knowledge Management Model (1998) for knowledge management (28) in this study. In addition, based on the principles of communication, there are three components in each communication including sender of signal, signal, and receiver of signal. Therefore, to manage hidden curriculum, it is necessary to control the factors related to the sender of the signal (environmental factors, human factors and the formal curriculum), the signal, and the receiver of the signal (learner). The principles of communication science were used in order to design a more complete intervention for each of these components. In the next step, interventions related to the management of effective factors (environmental factors, human factors, formal curriculum and learner’s Influenceability filter) and knowledge management were identified.

Hidden curriculum management model in medical education (Figure 1).

*Factors related to sender of signal*

These factors include environmental factors, human factors and formal curriculum, each having its own components.

*Environmental factors as sender of signal*

Environment is one of the most important sources for learning in the hidden curriculum

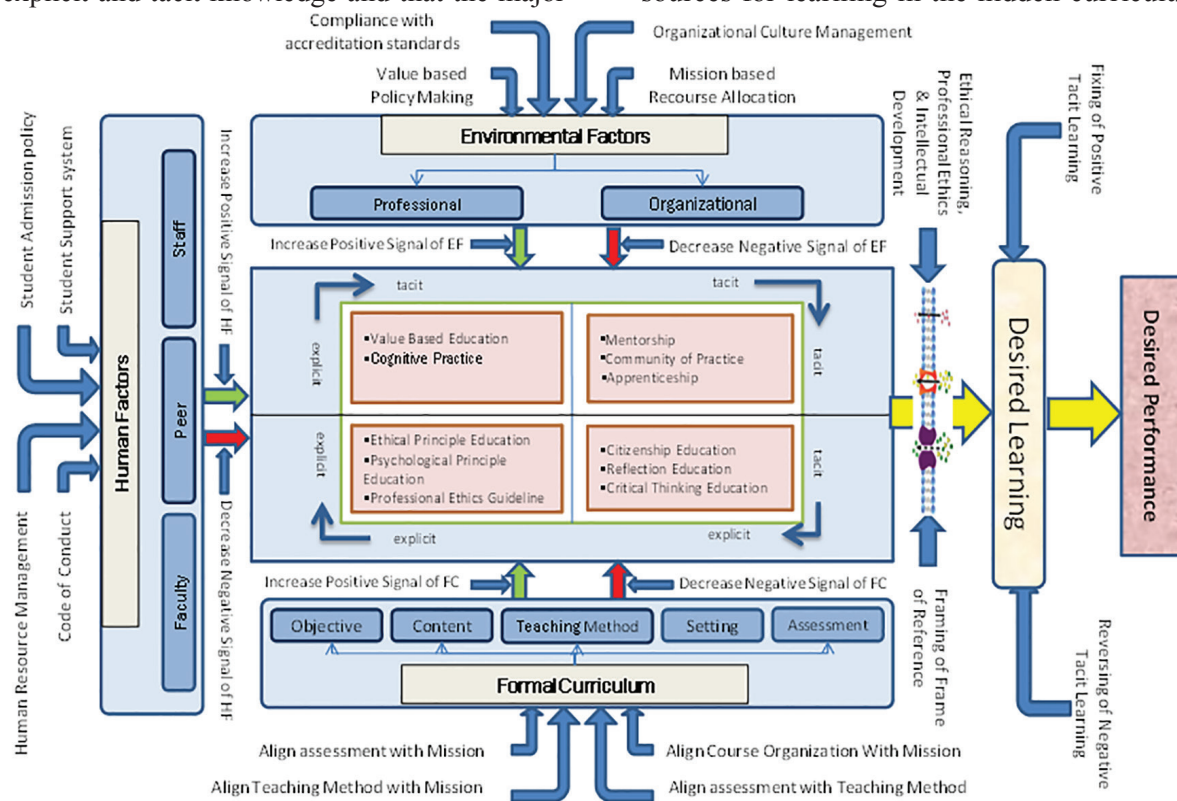


Figure 1: Hidden curriculum management model

(10, 22). According to the social cognitive theory, environment forms human behavior (29).

#### *Hidden curriculum management via environmental management (professional and organizational)*

To manage the hidden curriculum, it is necessary to control environment as the sender of signal. Management of the educational environment involves management of organizational culture, value-based policy-making, mission-based allocation of resources, and compliance with accreditation standards.

#### *Management of organizational culture*

Culture is the philosophy, common ideology, or a set of values, beliefs, expectations and assumptions that direct behavior in a social system. Furthermore, culture includes rituals, ceremonies, habits, artifacts, thinking models, and behavior. If the culture of an organization is adequately powerful, its efficacy increases and new members of the organization learn it during their daily routines (30). Hence, it is essential to manage culture in an organization.

#### *Value-based policymaking*

Policies greatly affect the hidden curriculum. To analyze how policies influence the hidden curriculum and to manage the environment, an individual can use policies as data and ask themselves 'what basic values and messages each activity has created or transferred' (1). Hence, value-based policymaking has to be carried out for every organization in order to transfer those values purposefully to the members of the organization.

#### *Mission-based resources allocation*

Allocation of resources in an organization reflects what is more important or a priority in an organization (1). The mission of an organization defines the priority and significance of the subjects in the organization. Therefore, mission-based resources allocation should be carried out in an organization (31).

#### *Compliance with accreditation standards*

Standards and indices in evaluation and accreditation show what is important or unimportant in an organization. Thus, organizational evaluation and accreditation can be used to reinforce the desired behaviors and expected competencies.

#### *Increasing positive signal and decreasing negative signal of environment*

Moreover, an attempt should be made in an organizational environment to increase the positive messages related to environmental factors and minimize negative messages as much as possible. For example, supplying equipment and suitable space is a positive message sent from the environment.

#### *Human factors as sender of signal*

Implicit messages are transferred from the human environment to the learner and this message transfer occurs via interpersonal interactions (12). Human factors include teachers, peers and staff.

#### *Hidden curriculum management via human factors management*

##### *Human resources management*

Human resources management involves employment empowerment, evaluation and regular monitoring and promotion policies (32). Human resource management (HRM) decisions are likely to have a significant influence on organizational desired performance (33). Therefore, to manage the hidden curriculum, the employment policies for teachers and staff must be very precise. The teacher recruitment policy seems to be more important because teachers have the highest rate of interaction with learners and thus the greatest effect.

##### *Setting the codes of conduct*

Setting the codes of conduct and ethics leads to establishment of expected behaviors from teachers, students and staff (34). In addition, learners' socialization can be partly managed by taking into consideration the rewards and punishments as well as clear expectations for specific behaviors in an educational environment (35).

##### *Student admission policy*

Student admission policies should be used as a managerial change to support the desired outcomes (36, 37). Since medical students are involved in interaction and communication with people in society such as patients and other medical team members, it is necessary to focus more on non-cognitive factors like teamwork and communication skills (38).

##### *Student support system*

Medical students are subjected to many pressures leading to stress. Over time, these students spend much time outside the university environment, in clinical settings and on studying. This social isolation leads to chronic stress in these students, so a student support system is

required in medical faculties (39).

*Increasing positive signal and decreasing negative signal of human factors*

Caring (40) and getting students involved in making decisions regarding subjects related to them results in increased positive signals and reduced negative signals from human factors (12, 22).

*Factors related to formal curriculum as sender of signal*

Formal curriculum is another signal transmission source which has in itself a hidden curriculum (3). Formal curriculum delivers various messages to teachers and students (1). The curriculum content, class organization and assessment (3) constitute a system of messages by which learners learn attributes such as punctuality, violence and conformity (35).

*Hidden curriculum management via formal curriculum management*

To manage the hidden curriculum, the formal curriculum needs to change and reform (36, 41). To this end, assessment methods, teaching methods and course organization have to be in line with the mission of the organization or institution. In addition, teaching methods need to be compatible with assessment methods.

*Correspondence between assessment methods and missions of educational institution*

Assessment methods should be in accordance with the missions of the educational institution.

*Correspondence between teaching methods and missions of educational institution*

Teaching methods should be in accordance with the missions of the educational institution. For instance, if the mission is promotion of teamwork and cooperation among members of an organization, the teaching methods should be performed in groups and not individually (23).

*Correspondence between course organization and missions of educational institution*

Course organization should be in accordance with the priorities, values and missions of the institution. Course presentation planning delivers different messages to learners selectively and mandatorily. If various subjects such as ethics and responsibility are presented as a course, it transmits an implicit message concerning the importance and priority of ethics and responsibility. However, if these subjects are only presented in elective courses, a powerful

message sent to the students is that the subject is not a priority of the institution (42).

*Correspondence between assessment methods and teaching methods*

Correspondence between assessment and teaching methods is another domain (3). For example, if students are required to do a group project but are scored individually, the message transmitted to them is that only individual effort is rewarded. Therefore, the students might keep special topics for themselves to get a better score than others, and this is not in line with the objectives of the teachers (23).

*Increasing positive signal and decreasing negative signal of formal curriculum*

Informal curriculum management is necessary to increase the positive signals and reduce the negative signals transmitted from the formal curriculum. Correspondence of the formal curriculum with the hidden curriculum is one of these instances. For example, analytical and critical thinking are expectations of the formal curriculum, while rote learning is the expectation of the hidden curriculum (3).

*Knowledge management*

Before the signals and messages are transmitted from the environment, human factors and formal curriculum lead to learning in learners. This process needs to be managed in order for the desired learning to occur in the learners. To manage the learners' tacit and explicit knowledge, the knowledge management model of Nonaka and Konno could be helpful (28). They claim that knowledge creation is the outcome of interaction between tacit and explicit knowledge, and a combination of these two categories yields four reversal patterns. This process involves four components of socialization, externalization, combination and internalization which are applicable to learning management and hidden curriculum management. In the socialization phase, the given values can be transferred to students individually by mentorship, community of practice and apprenticeship (43). In the externalization phase, tacit knowledge is converted to explicit knowledge, which can easily be understood by others. At this stage, the principles of citizenship, reflection and critical thinking can be taught to the learners (29, 44). In the combination phase, explicit knowledge is changed into more complex explicit knowledge. Therefore, ethical principles, psychological principles (45) and guidelines of professional ethics can be taught to the learners.

In the internalization phase, explicit knowledge is converted into tacit knowledge and values can be taught implicitly. Value-based education (46) and cognitive practice of ethical subjects can help to internalize the values.

#### *Learner management as a recipient of messages*

##### *Influenceability filter management*

After knowledge management is carried out, the learning content approaches the learner's influenceability filter, and the learner will recognize what to learn by using the frame of reference, reasoning and judgment. At this stage, influenceability filter can be controlled by reforming the learner's reference framework and teaching reasoning and logical judgment (41), thereby achieving ethical reasoning growth, professional ethics development and mental development in the learner.

##### *Desired performance management*

By controlling and managing the influenceability filter, desired learning can be created in the learner. Moreover, a graduate with desirable performance can be trained by stabilizing positive implicit learning and reversing negative implicit learning by reflection in action and reflection on action.

## **Discussion**

This study showed that environmental factors, human factors and the formal curriculum affect the hidden curriculum. In management of the hidden curriculum, not only must all of the aforementioned factors be managed and controlled, but also the knowledge and the influenceability learning filter should be managed in addition to measures for stabilizing implicit positive learning and reversing implicit negative learning.

Many studies have been undertaken on the importance and effects of hidden curriculum on learning, but none has provided a comprehensive model for controlling and managing the hidden curriculum. Haferty (1998) identified the impact of the hidden curriculum on four domains including policy development, evaluation, resource allocation and institutional "slang" (1). Although he deals with important issues in his studies, it appears that all the issues can be a subset of environmental factors which is manageable with appropriate interventions. Despite the fact that the results of this study are completely compatible with those of the study of Haferty, he only emphasizes environmental factors. In addition, he does not propose to manage the hidden curriculum and refers merely

to its manageability. Hafler et al. (2011) in their conceptual model demonstrated several factors for the socialization of the faculty and students in professional life. The authors categorized these factors under the hidden curriculum related to faculty members and students which led to their behaviors (31). The results of this study are also compatible with the study of Hafler, but he only refers to a part of the hidden curriculum component. These components can be classified under the subset of human and environmental factors. Blasco (2012) believes that beside the formal curriculum, interpersonal interactions and the school governance also send messages to learners that could be sometimes contrary to the intended goals. Blasco argues that if these three factors are controlled, the negative effects of the hidden curriculum can be reduced (23). Despite the consistency of the results of the Blasco's study and the present study, Blasco also only mentions part of the influential factors and ignores other factors such as environmental factors, knowledge management and learning management. The Andarvazh's model also identifies the content and process of the hidden curriculum, but the only messages transmitted through the environment (social, organizational, professional, and human) to learner are considered (47). While the formal curriculum is one of the most important sources that convey the importance and priority of the subjects of the curriculum, it is not mentioned in the Andarvazh's model.

Gordon (1983) (48), Haferty (1998) (36), Lemp (2004) (21), Hafler et al. (2011) (31), Thornberg (2009) (44), Blasco (2012) (23), Mossop (2013) and Andarvazh (2018) (4) identified hidden curriculum content and process (4, 8). In this study, the findings of all the authors mentioned were used to create a comprehensive hidden curriculum management model. In addition, the knowledge management model of Nonaka and Konno was used for the first time to manage the hidden curriculum in this study.

## **Conclusion**

This study revealed that to achieve the desired performance in students, a reform of the formal curriculum is not sufficient and other factors such as environmental and human factors, learner's influenceability filter and knowledge management must also be taken into account. The hidden curriculum management model can be used for training and educating the staff and students with the desired performance in any educational institution. Our model provides a coherent framework for controlling and managing the negative effects of a hidden curriculum in

medical education. This framework can help to promote the professional performance of the graduates and inform further research into one of the most important and challenging aspects of medical education.

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