SHORT COMMUNICATION

THE FORCE FIELD ANALYSIS OF ONLINE LEARNING.

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 Abstract

Introduction: Online teaching and learning have become the need of the hour during the COVID-19 crisis. This study uses the force field analysis, an effective and structured decision-making technique, to bring to light the factors influencing the online learning from the students' and family's perspective.

Methods: This study was cconducted as an audit under university guidelines. Twenty students belonging to Year-4 of medical program volunteered to participate and they responded through email. The information was collected, and all the relevant points compiled, analysed, and then grouped together under the section headings.

Results: The safe home environment, good food, plenty of spare time and self-motivation were among the accelerators. The advantages recognized were opportunity for family bonding, less travel, being more economical and environment friendly, less tiring, and stressful and opportunity to explore and learn online materials. The brakes were technical and internet connection issues, distractions in conducive home environment, increasing stress, eye strain, backache, and lack of motivation. Inability to learn from real life patients, inability to build rapport with the lecturers and deprivation in meeting friends, loneliness and health issues and internet addiction were counted among the disadvantages. The family's views were mixed. Anxiety, worry and concern on one hand and support and gratitude for the teachers on the other hand.

Conclusion: The forces for (accelerators) and against (brakes) the online learning varies from student to student. The factors conducive for one may be unconducive for the other. The individual attitude matters the most. Considering the advantages and disadvantages the "blended learning" can be a way forward.

Keywords: Force Field Analysis, online learning, medical education, COVID-19 pandemic, student's perspective.

Introduction

Online teaching and learning have become the need of the hour during the COVID-19 crisis. The Movement Control Orders (MCO) followed by most of the countries to reduce the transmission of the disease has forced the educators to shift to online mode to continue the teaching. (1) It is using the resources and the time in the best possible way. It requires the teachers to become tech savvy. The medical university teachers are working hard to the best of their ability to use various platforms available like zoom, skype etc. to keep up and adapt to this new norm.

On the other hand, the medical university students have been sent back home. (2) They are safe in their homes during the COVID-19 crises though must continue the course through online mode. The students too must work hard to adapt to this new mode of learning. The concept of medical school is no longer the same. The learning environment has changed which is not the same for everyone. The change is different for each student. For some it is comfortable and cosy but for others it is stressful and inconvenient. (3)

The aim of this article was to find the driving forces or the accelerators of the online learning and the resisting forces or the brakes for the online learning using the Force Field Analysis.

The Force Field analysis (4) was created in 1940s by Kurt Lewin. The Force Field analysis is an effective and structured decision-making technique. The idea behind this technique is that situations exist or are maintained because of the equilibrium between the driving forces and the resisting forces. It can increase the quality of the decisions and chances of success. For a change to happen the driving forces must be strengthened or the resisting forces weakened. (4,5,6)

This article recognizes the factors for and against the online learning together with its advantages and disadvantages from the perspective of the students and families.

Methodology

This study was conducted in a private university during the COVID-19 pandemic as an audit with permission from the deanery according to the University guidelines. The fourth-year medical students who volunteered were included in the study. Twenty students volunteered and participated in the study. Their responses were collected through email and recapitulated under two sections. Section A was the students' views on driving forces, resisting forces, advantages, disadvantages of online learning and comments (total 5 columns). Sections B was the participants' family's view represented by the respective participants. It included siblings', parents', and grandparents' views (total 3 columns). The participants presented their views under the desired headings. The information was collected, and all the relevant points compiled, analysed, and then grouped together under different headings.

Results

Section A: Student's views
 1. Driving Forces/Accelerators for online learning

The factors recorded 'for' the online learning were:

   a. Being at home itself
   b. Quiet, safe, and comfortable environment
   c. Family members support
   d. Need to finish the syllabus
   e. Good and healthy food
   f. Convenient own space
   g. Easy accessibility to lectures
   h. Less stressful
   i. No rush going from one class to another
   j. Less exhaustion
   k. Family time
   l. Self-motivation-to learn something every day and gain new experience

m. Online learning is the only option left to complete the course. No other choice.
n. Good teachers who take extra effort to make online teaching effective and interesting
o. Having mini quiz and case scenario discussions
p. Making use of available resources
q. More time to revise

2. Resisting Forces/ Brakes for online learning
The factors recorded 'against' the online learning were:

a. Internet and technical issues
b. Home environment not being conducive - a lot of distractions so difficult to concentrate
c. Conflicts and tensions at home
d. Background noises at home during class
e. Online Teaching not being as effective as Face to face teaching
f. Very long lectures make one lose focus and become hard to concentrate and gain knowledge
g. Unable to witness clinical cases
h. Occasionally lack of motivation
i. Feel locked up, bored and losing time
j. Feel stressed when parents ask to study
k. Migraine and eye strain
l. Same students whose camera is on are picked up again and again for every question by the teachers while others escape.
m. Due to poor connectivity, some important points can be missed
n. Tendency to internet surfing while attending the class
o. Requires self-discipline and excellent time management skills
p. Lectures' unfamiliarity with online resources

3. Advantages of online learning
According to the students, these were the advantages of online learning:

a. Time saving: Online learning saves travelling time
b. Less tiring: It is less tiring if they do not have to travel
c. Conducive comfortable home environment: Home environment is more comfortable.
d. Less Distractions: During the classes, no disturbance by fellow students' chit chatting and noise.
e. Able to focus better and take down notes better
f. Less of other responsibilities like laundry, cooking, and other essential chores. No need to worry about 3 meals a day
g. More economical – as saving on transport
h. Do not have to get up early morning and rush to class
i. Can attend class from anywhere
j. Promotes family bonding
k. Easy accessibility to the class
l. Less stressful
m. More time for discussions- more time to learn and doctors have more time to explain in detail.
n. Easy Access to reference books and e books
o. Lectures start on time and have full attendance
p. More time for theory

4. Disadvantages of online learning
According to the students, the disadvantages of online learning were:

a. Unable to attend clinics: Real patient learning is missing
b. Eye strain, headache, and backache: continuous hours of online classes cause eye strain, headache, and backache.
c. Less interaction: lack of interaction with the teachers and peers.
d. Lack of motivation: When it comes to self-study, there is lack of motivation

e. Extra expenditure on buying data- not all parents can afford, good phone, camera, and audio
f. No rapport with the lectures
g. Gaining weight as sitting for long hours and no physical activity
h. Technical issues- sometimes important points can be missed because of poor connectivity
i. Poor concentration
j. Repetition of theory
k. Obligations and home responsibilities
l. Ineffective time management- class time, self-study time and home responsibilities causing time mismanagement leading to chaos, stress and conflicts at home.
m. Unable to meet friends
n. Exhausting

5. Comments by the students:
   a. The students are of the view that online teaching for few hours for some postings and small group teachings is beneficial before going to the actual clinics.
   b. They are against the idea of e-logbook, instead suggest having short or long answer type questions writing and submission.
   c. Some students feel they have better participation via online.
   d. They prefer teachers to be precise and stick to the topic.
   e. Eye straining causing increase in the power of the lens/ spectacles.
   f. Some students count it as a new experience but want it to end soon.
   g. The students are concerned about the parents as they cannot use the internet during their classes.
   h. Some like online teaching but suggest that in future both online and face to face teaching should be continued.

Section B: Family's View
1. Siblings:

   a. can spend more time together, better bonding/connections
   b. time saving
   c. prefer online classes
   d. siblings rest/sleep gets disturbed
   e. if time of online class clashes, then inconvenient
   f. younger ones want to notoriously disturb sometimes
   g. cannot watch TV during our online classes

2. Parents:
   a. Parents are anxious about the children not gaining the clinical experience.
   b. Parents are willing to support but feel that home environment is not favourable
   c. They try to make it as comfortable and convenient as possible.
   d. Parents are concerned about spending long hours in front of laptop causing health and eye problems
   e. Parents are happy as they able to spend more quality time with family
   f. Parents want that learning must go on, even during the MCO
   g. Parents request to try to bring back face to face classes as soon as possible
   h. They appreciate the initiative to continue the classes during MCO
   i. They prefer online learning for some classes
   j. Parents cannot watch TV during the online classes
   k. Parents are not in favour of continuous long sessions
   l. Parents are able to understand the pattern of medical studies better

3. Grandparents: Grandparents are happy to be able to see and spend time with grandchildren. They show their love by preparing variety of food.

Discussion

During the Movement control order (MCO) the universities have vacated the campus hostels and students are sent back home. (2) The medical curriculum is continued using the online mode. Various online platforms like zoom, skype and Microsoft teams are being used.

The medical school is no longer the same. According to the oxford dictionary, school is an institution for educating children. The medical schools provide an environment conducive for learning medicine. The medical students are not only learning medicine here but their whole personality is being developed. They learn to be independent and responsible beings full of values. Medical schools shape future doctors.

Online learning has shifted the schools to homes. This article zooms into the medical students' perspective of online learning.

Driving forces for online learning (accelerators)

The students recognized various factors which are the driving forces for their online learning from home. These factors act as accelerators promoting their online learning experience. Being at home itself is a driving force for some students for online learning. Home environment is conducive for online learning being safe, quiet, and comfortable. A conducive physical environment has been found to increase the learning efficacy. (7) Having all meals served ready with good healthy food was a major factor. 'A healthy mind in a healthy body'. Healthy food keeps one healthy providing energy for the day. Good support by the family members was equally important. Talking to the family can boost the morale.

Students recorded online learning to be less stressful as they did not have to rush for classes. Therefore, they felt less exhausted and had more time at bay for revision.

The other factor recognized as the driving force was the self-motivation. They realized that it was the only option to make the best use of time and resources. Similarly, students from other universities have embraced online learning. (8) The self-motivation to finish the medical syllabus as much as possible online kept them going. A study conducted in 2013 to examine the student characteristics relationship with the course outcome found that students with higher levels of motivation had better outcomes. (9) Last but not the least the extra efforts from the teachers to make the online learning experience more effective and interesting were worth the mention. The students mentioned the quizzes and the case scenario discussions kept them engaged.

A study by Omar (10) on student engagement in online learning highlighted the importance of students' attitude in gaining most from E-mentoring. Thus, above all it is the students' attitude.

Resisting forces for online learning (Brakes)

The factors recorded 'against' the online learning were internet and technical issues. Everybody does not have access to good internet plan, phone/laptop with camera and microphone. Important points can be missed due to poor connectivity. (3,11) For some, the home environment is not conducive. They may be sharing the space/room with the others and background noises can be annoying and distracting. The family conflicts increase the tension and stress making it difficult for the students to concentrate.

Lack of motivation, self-discipline and time management skills were recognized as additional factors against the online learning. The long hours made them lose interest. Some students felt losing time due to no clinical exposure. Online lectures were not as effective as face to face teaching according to some students.

Another resistance was some of the old school of thoughts teachers' unfamiliarity with the online system. Other universities faced similar issues during the initial phase of the crises. (3)

Feeling of locked up, boredom and inability to meet up with friends was also a major factor. It increased their stress which further got worse when parents asked them to study all the time.

Long hours of some lectures led to loss of concentration and inability to gain knowledge. It further led to migraine and eye strain.

An analytic study (12) highlighted administrative issues, social interactions, academic skills, technical skills, learner motivation, time and support for studies, cost and access to the internet and technical problems as the barriers or hindrances or brakes for online learning. (12)

Advantages of online learning

The online learning does not require the students to travel thus saving time and energy. Thus, saving transport cost makes it more economical as well.

The students can focus better in the conducive home environment because of no disturbance by colleagues and friends' chit chatting as in offline lectures. They do not have to worry about laundry, cooking, and other house chores. Easy accessibility to the class leads to full attendance. Staying at home promotes family bonding as well. It is less stressful as there is no early morning rush as classes can be attended from anywhere. There are no space limitations. The resources are easily available. The success of MOOCs (Massive Open Online Courses) since their introduction in 2012 shows the popularity of online learning. (13,14) A lot of time is available for discussion of theory and clearing doubts during online classes. This factor is supported by Sendra-Portero et al (15) pilot study on "undergraduate radiology teaching to evaluate the use of virtual lectures".

A systemic review and meta-analysis (14) comparing online learning to offline learning or traditional learning in undergraduate medical students did not show superiority of traditional/offline learning over online learning. Online learning showed additional advantage of enhancing undergraduates' knowledge and skills. (14)

Web-based training for medical students on infant gross motor screening was found to be as effective as conventional training as evidenced from the study by Pusponegoro et al (16) few years back.

Another study by Subramanian et al (17) showed the web-based learning modality for medical students to be better than traditional methods in student learning and retention. The web based, learning modality used was StepStone Interactive Medical Software (SS). (17)

Disadvantages of online learning

Medical students cited lack of clinical exposure as the main disadvantage of online learning. Inability to gain practical knowledge was the reason of their worry. These were the year-4 students, so they still had hopes to catch up in year-5, the final year of medical curriculum. That may be the reason of not worrying about becoming housemen/doctors without practical knowledge.

Health issues pertaining to long hours of continuous sitting and laptop/phone use was another disadvantage. Students developed eye strain, headache, backache and worsening of migraine. Due to constant eye strain increase in the lens power required change of spectacles. Studies (18,19,20,21) have shown association between computer use and neck and shoulder symptoms and eye strain and headache. Long hours of sitting without physical activity led to increase in weight as well.

Some students had tendency to surf internet during the lectures. Various studies (22,23,24,25) have shown problematic internet use and internet addiction among students.

Another disadvantage reported by the students was less interaction with the lecturers. The students need to make use of the available platforms to approach the mentors to develop rapport. A study on e-mentoring showed the success to be learners' attitude dependent. (10) Lecturers also need to be available on these platforms and tech savvy.

Extra expenditure on data plan, microphone, camera, laptop, printer was reported as a disadvantage of online learning. Though some students have the gadgets while others reported difficulty in buying during MCO due to logistic

issues. Technical issues and poor connectivity led to poor concentration and irritability and stress.

Motivation is very subjective. Some complained about the lack of motivation during MCO while other were self-motivated to learn something new every day. In an analytical study (12), the learner's motivation was recognized as one of the barriers for online learning.

Home environment varied among students. Some have the advantage of conducive environment, understanding and supportive family with readymade food served in a platter with zero household responsibilities whereas others have inconducive environment with family issues. Some have family responsibilities and obligations to take care of. Managing time for online classes, self-study and home responsibilities led to chaos, stress, and conflicts due to poor management. Amid all this there is no way to relax and vent out as could not meet up with friends or go out.

Comments

Some students went ahead and gave comments on their preferences. On one hand some felt their participation was better in online classes as compared to face to face. While on the other hand, some wanted this to end as soon as possible and get back to face to face. While there were still other, who were of the view that certain percentage of online learning should be continued together with face to face wherever feasible. Pei L and Wu H. (14) supported the idea of blended learning (26) (online and offline learning).

Families' views on online learning

Siblings enjoyed time together. Younger ones in playful mood tried to disturb online classes. Some had their own online classes to attend. Issues arouse when they had limited resources and had to share the internet or the laptop. Their activities were restricted because were unable to enjoy TV or sleep during online sessions.

Parents had mixed views. Some parents were anxious about not having clinical teaching in hospitals. On the other hand, some appreciated the universities initiative to utilize this time by online classes. They tried to support by making the home environment as conducive as possible for the children. They were enjoying their company and trying to understand the medical education system. They were also concerned about the health issue of spending long hours on electrical devices. Whereas some wanted the MCO to end and children to go back to universities others preferred some percentage of online learning in the curriculum so that they get to spend time together. Though they were not in favour of very long online sessions.

Grandparents are happy to be able to see and spend time with grandchildren. They show their love by preparing variety of food. They want to relish each moment spent.

Conclusion

To conclude the forces for and against the online learning vary among students. The factors considered conducive for one may be unconducive for the other. The family background and circumstances play a major role. Of course, the individual attitude matters the most. If the issues of online learning (health concerns and internet addiction) are tackled appropriately "blended learning" can be a way forward. Lecturers also need to adapt effective ways to make the online learning a stress-free enjoyable experience.

Acknowledgments

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