

Faculty as a Change Agent: Lessons Learned from a Change Management Game Virtual Workshop: A Qualitative Study

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Abstract

Background

The dramatic change in the learning environment, in the universities, had forced academic medical faculty to play several roles and rapidly adapt and lead this change. Thus, this study aimed to identify the critical success factors that may help academic medical faculty to be a change agent as well as explore effective ways to manage such a change.

Methods

This work utilized a deductive qualitative grounded theory approach aiming to identify the factors and effective ways to manage change. A convenient non-probability sample of thirty faculty members participated in a change management game virtual workshop using the jigsaw technique and change management game. This game has 34 cards with Change Management questions. The research team revised and modified the change management game questions. After revision and modification, the game consisted of four groups of questions, each group included 6–9 questions with a total of 28 questions

Results

The findings were organized under four themes: Individual, Environmental, System/organizational, and Network/interactions-related factors that help the academic medical faculty to be change agents. The participants agreed that a change agent should have transformational leadership attributes, be a role model and a good communicator having strong social connections. Additionally, participants described the change-resistant environment as a major obstacle to change. The presence of skeptics and the inability to find the required supportive team were indicated as important network-related barriers while the significant role play in this team is the innovators. Finally, the destination to make people agree to change is developing and communicating a shared vision and change culture.

Conclusions

The current study added to the body of knowledge the academic medical faculty view of a successful change agent. This study was able to evidence that despite the challenges the faculty are always facing, every faculty can be a change agent in his position and different situations. Therefore, Training, supporting, developing, and rewarding the academic faculty to ensure that the next generation of change agents will be equipped to be proactive on the frontlines of any change will be outlined.

Introduction

Medical Education today faces a range of challenges that call for change from individual classrooms up to departments and institutions. The sudden eruption of the COVID-19 pandemic that led to the creation of the most severe global higher education disruption in history ¹ obliged the different educational institutions to face different and sudden changes ². This has raised an urge to revisit the factors affecting the change process and change agent in universities.

The dramatic change in the learning environment, in the universities, in addition to the many changes in longstanding educational paradigms and practices had forced academic medical faculty to play several roles and rapidly adapt and lead this change. As they affect both the content and process of medical education, their roles and responsibilities are always changed. Several roles were assigned to them being educator, curriculum planner, assessor, mentor, academic supervisor and coach, and. They are largely the primary point of contact to assist students in making their transitions ³. All these new demands and opportunities are developing in the context of growing pressures on the academic medical faculty to be a change agent and manage change ⁴.

Change management is the process of continually renewing an organization's direction, structure, and capabilities to serve the ever-changing needs of external and internal customers ⁵. The dynamic environment of Medical Education forces the academic medical faculty to change and adapt constantly to be in response to any upcoming change ⁶. However, change management in medical education, just as in any other industry, can be a long process that is not guaranteed to be completed successfully without a change agent. This is because people are naturally resistant to change, which often needs someone to lead this change in the institution who actively works in and influences the environment in which he operates, to make it conform to their pre-planned objectives and do not wait for the changes to occur at all ⁵.

The successful change agent should have a set of characteristics that he/ she should possess to successfully implement organizational change ⁷. Change agents are those people either inside or outside the organization who provide technical, specialist, or consulting assistance in the management of a change effort ⁵. They need to adopt different strategies that will help them plan and act in ways that grow a coalition for change such as developing a shared vision, empowering the stakeholders, building a more democratic, wider, and stronger base of support for change, and becoming better prepared for future crises ⁸.

Numerous methodologies were used in previous literature to define the essential factors needed for the change agent to successfully lead the change in their institutions ^{9,10,11,12}. Additional studies also added the role of medical students as change agents ¹³. However, the current study took the initiative of using a new and innovative approach to explore these factors in the academic medical faculty. The current study used a merge between the jigsaw technique and the Change management game in a virtual workshop. The game was originally published in Jurgen Appelo's 90-page booklet, How to Change the World. This game has 34 cards with Change Management questions. This set of questions lets the person think

deeper about his change initiative. Additionally, answering these questions helps the individual to have insight into what it takes to change the world and how he can change a social complex system by forcing the participants to self-reflect, as it raises questions and does not give answers ¹⁴.

Although the research in change management was not new, the existing work focused on how to build a change agent in the industry ⁹, business ^{10 & 11}, and healthcare ¹². Additional studies also added the role of medical students as change agents ¹³. However, this study expanded the way we characterize the change agent by including the academic medical faculty's points of view by reflecting on their real-world experience and engagement. Moreover, individuals do not act in isolation but as part of a context. Therefore, the study explored other factors than the personal attributes of the change agent that may affect them as environmental and social factors. Additionally, the current study took further advantage of the change management game in which the questions make the players dig deeper into things that they do not want to discuss or things that they have been avoiding or trying to ignore. Playing the Change Management Game will force the participant to consider the system, the individuals, the interactions, and the environment. Thus, this study aimed to identify the critical success factors that may help academic medical faculty to be a change agent as well as to explore what effective ways are to manage such a change. The study raised two research questions:

- How does the academic medical faculty characterize the change agent?
- What are the factors that may help characterize the academic medical faculty to be a change agent?

Methodology

We used a deductive qualitative grounded theory approach aiming to identify the factors that may help academic medical faculty to be a change agent as well as to explore what effective ways are to manage change.

Context:

The researchers conducted a change management game virtual workshop using the jigsaw technique. This workshop was one of the practical activities of an online program of health professions education in Egypt.¹⁵ The study team opted to utilize this activity to identify the factors that may help academic medical faculty to be a change agent as well as to explore what effective ways are to manage change.

Sample and participants:

A convenient non-probability sampling sought fellows who were enrolled in the online program. Thirty faculty members attended the workshop. All the participants were Egyptian faculty members from different medical schools, varied in gender, specialty, academic rank, and affiliation.

The fellows were invited by email via the workshop organizing committee, to participate in this virtual workshop. The fellows who were interested in participating in this activity approached the committee via

email. The registration for the workshop was conducted through a google form.

Procedure:

The workshop was designed based on two important techniques: Jigsaw strategy ¹⁶ and Change management game ¹⁴ as shown in figure (1).

The Jigsaw Technique:

The Jigsaw technique is a strategy in which participants in the activity are organized into groups and then rearranged into new groups to share their learning through peer teaching.

We have selected the Jigsaw technique for several reasons. In a virtual set-up, individual members may find it harder to engage, participate, and require additional support. This technique is an effective cooperative learning strategy that encourages cooperation between the participants which is difficult to achieve in virtual activities. It also promotes all participants' contributions as they work collaboratively with each other to come up with the main ideas of the topic. Finally, it allows active learning and the participants to be self and peer teachers, in addition to building confidence and responsibility.

Change Management Game:

The second technique used in the workshop was the Change Management game. The game was originally published in Jurgen Appelo's 90-page booklet, How to Change the World. This game has 34 cards with Change Management questions. The research team revised and modified the change management game questions. After revision and modification, the game consisted of four groups of questions, each group included 6–9 questions with a total of 28 questions (**Annex 1**).

The Virtual Workshop

The workshop was delivered over two weeks and divided into three phases:

(1) **Individual task:** During this phase, each participant was assigned to answer one question individually. The questions were divided into four sets, each was marked by color: red, purple, yellow, green. The participants in the exercise are asked to tell stories of the successful change either from their own experience or readings. Participants were expected to go through an in-depth study of the question before joining their expert group.

(2) **Expert Group Meeting:** participants working on the same set of questions (marked by the same color) formed expert groups. Each group consists of five to six participants. The participants were divided randomly into four expert groups according to the same colors of the questions set: red, purple, yellow, green. Six green questions asking about the system during the change, nine red questions targeting the

people, seven yellow questions targeting the network, people interactions innovators, early adopters, and skeptics. The last group of questions was six purple questions targeting the environment.

During this phase, the participants shared their concepts, answers, experiences and discussed the main ideas of the topic with other “experts”, and then refined their answers. The Experts group communicated together via WhatsApp and Zoom meetings, then finally they submitted a final report of their group work. The purpose of this phase was to facilitate the participants’ development of “expert group knowledge” before proceeding to the next phase, the Jigsaw group meeting (synchronous online session).

(3) Jigsaw Group Meeting: Thirty participants in the workshop attended the synchronous online session. It was conducted via the Zoom meetings application. This session was split into 4 different groups (Jigsaw group) and lasted for two hours. Each participant from the expert group joined a new jigsaw group. Each participant was an ambassador from his/her expert group to the new jigsaw group. Each participant presented her/his topic to their Jigsaw group, while other members of the group were encouraged to ask questions for clarification. Each group consisted of 6–8 faculty members. Each new group was asked to get a consensus about the answer to the main question of “how faculty can be a change agent rather than a change blocker”. The fishbone analysis was used as a tool to guide them to categorize these factors under the four categories of the change management game as shown in figure (2).

Each group connected the various pieces, so they were able to see where each part fits into the bigger picture and put together the whole game. The discussion was moderated by one of the authors.

At the end of this phase, each Jigsaw group was required to submit their work to the thirty participants in a large group discussion.

Preparation Of A Virtual Workshop Guide

We (NW & EA) prepared a guide for the workshop. The guide included the workshop objectives, timetable, outline, description of the change management game, and how to play the game. This guide aimed to minimize the participants’ disengagement which is one of any virtual activity limitations. In addition to helping them to understand every step and when exactly they would move forward, and which exercise would come next.

Data Collection And Analysis

The large group discussion was audio-recorded and transcribed by the authors. To assure accuracy, each session was transcribed verbatim, and accuracy was verified by the investigators. Two members of the research team independently reviewed and analyzed the large group discussion transcripts. A thematic analysis was conducted following the six phases described by (16). These phases include “1) familiarizing with the data, 2) generating initial codes, 3) searching for themes, 4) reviewing themes, 5)

defining and naming themes, and 6) producing the report. The analysis involved coding the entire data set and the codes were collated to identify themes. The emerging themes were combined into overarching themes and grouped into categories. Representative quotations from reports were jointly recorded by DK and SF.

Results

The analysis of the large group discussion transcripts revealed several key findings/factors that are essential for the faculty to be change agents rather than a change blocker. These findings were organized under four main themes.

Theme 1: Individual factors that help the academic medical faculty to be change agents.

Theme 2: Environmental factors that help the academic medical faculty to be change agents.

Theme 3: System/organizational related factors that help the academic medical faculty to be change agents.

Theme 4: Network/interactions-related factors that help the academic medical faculty to be change agents.

The above themes are elaborated below as follows: Discussion of each key theme with a summary of the findings. This is followed by an expanded description of participants' narratives about their perceptions and experiences. Excerpts from the large group discussion and the actual words used by participants are integrated into these narratives. It is important to emphasize that when a direct quote from a large group discussion participant is used, this is not a random choice. Quotes were selected that represent the views expressed by a majority of participants. The quotes are attributed to the participants (P), who participated numbered from 1 to 30.

3.1 Theme 1: Individual factors that help the academic medical faculty to be change agents.

The majority of the participants agreed that a change agent should have transformational leadership attributes, which depend upon influence and inspiration, not authority, the excitement of the minds of our stakeholders, and empowering others to do the required change. They also indicated that a transformational change agent can help others to understand how to cope with change as he should be the role model having passion, consistency, trust, and vision. One participant (P10) reflected on a real-life experience during establishing a new academic department at his institution and added 'In providing our support during this change cycle, we adopted transformational leadership which is highly ethical and depends upon influence, not authority and inspiration, not dictation to excite the minds of our stakeholders and empower them to do the required change. Transformational leadership is a suitable leadership style for managing organizational change. In addition, it can assist followers to understand how to cope with change"?

Participants classified the essential skills a change agent should have into three main groups: communication skills, training/presentation skills, and conflict resolution skills. As one participant (P14) stated that 'In my institution, the leaders during the pandemic crisis were keen to constantly communicate with the staff through two steps which are knowledge to launch the change and knowledge to sustain the change'. Another participant (P9) added that 'the institutional leaders used the open discussion to convince the staff about the need for change'.

Further elaboration revealed other skills such as professionalism, building rapport, patience, flexibility, empathy, and creativity. They agreed that training is a structured process that provides participants with the knowledge and skills to perform change tasks, and the desire to use them. One of the participants (P18) reflected on his experience "I think I was a good information provider as I used different methods to provide the knowledge, train, educate and work closely with the people and coaching them to acquire the ability to perform effectively."

By reflecting on their own experiences, most participants discussed the need for the change agent to have a sense of urgency. It was defined as acting promptly and making change happen efficiently and effectively. This sense of urgency can be made up of two parts: i) the extent to which our sense powers (like sight, sound, touch, etc.) perceive a situation or problem is important; and ii) whether that situation or problem requires deliberate versus swift or urgent action. Reflecting a sense of urgency could be done properly by exploring short and long-term outcomes of change and by showing how change could be anchored in the system. One participant (P5) added 'Leading a team during a transformation at any level will often require an ability to create an atmosphere of urgency that can, in turn, bring about an atmosphere for success '

3.2 Theme 2: Environmental factors that help the academic medical faculty to be change agents.

The participants were asked to describe the characteristics of a "change culture" and to explain how they believed these characteristics could be found. Participants were quick to acknowledge that to build the need for a culture of change there should be a moral purpose in which each change agent should have a responsibility to the organization and the whole environment and should have innovative ideas but also understands that the change process is difficult. The participants also agreed that in cultural change, efforts to motivate and energize low-participants and improve relationships between people can have a significant effect on the whole institutional change. One participant (P1) explained that "Culture is the spirit of the organization, the change agent should build a culture of continuous improvement and change". They have also summarized the different factors that may contribute to the changing culture in developing a change agent as shown in Fig. 3

Additionally, participants described the change-resistant environment as a major obstacle to change. They have discussed the reasons for resistance and identified the lack of awareness about the need for change, lack of agreement and proper communication, and lack of motivation. As one participant (P22) highlighted "I spent most of the time struggling with the minds of the people to convince them about the need for change "awareness" and asking them for support due to its benefits for all "desire". Another

important reason for creating this resistant environment, as indicated by the participants, is the tendency of the change agent to focus on a single person rather than the entire team as well as a resistant culture may be fueled by political, economic, and social factors opposing the change.

Furthermore, the participants discussed the importance of an environment that allows the existence of a coherent team comprising various important roles. They also agreed on the essential elements that could guarantee team members' commitment to change including the creation of competition, regular positive feedback, recognition, rewards, incentives, celebrating progress, and recognizing success. These sentiments are captured in the comments of one participant (P26) who explained "It is one of my own experience as the dean help any member of academic staff in his/her research but a special reward for me was the provision of an extra-help in my research by giving me a vacation to continue my studies longer than given and it was a reward for sharing in extra-time teaching in college"

3.3 Theme 3: System/organizational related factors that help the academic medical faculty to be change agents.

Participants in the large group discussion were asked to elicit the system/organizational-related factors that help faculty to be change agents. They highlighted the role of institutional vision. The participants agreed that the destination to make people agree to change is developing and communicating a shared vision, which is an ongoing process that can occur at every stage in a change process. One of the participants (P10) added that "Shared vision will serve as a shared language and shared imagination for the future of the institution, additionally it makes the stakeholders feel as they own the change project rather than they will be affected by it"

Furthermore, the vision should be based on an accurate analysis of the current situation and should empower others to act on goals and eliminate obstacles. The participants outlined essential steps that the system could follow to lead a change including raining the feeling of urgency, starting with small goals and short-term objectives to finally achieve a bigger one, considering creativity, persistence, building strong teams, creating short-term wins, and incorporating change. Many participants acknowledged the importance of developing Key Performance Indicators (KPIs) to evaluate the change results and also measure the efficacy and effectiveness of the whole process. One of the participants (P16) reflected on his experience on introducing a new teaching method and highlighted the importance of the evaluation of the change results "After doing the change we checked the performance of the demonstrators in sections and the feedback of students for doing the experiments of physiology by using this virtual lab software". Additionally, different evaluation models could be adopted, and results should be announced and communicated. Quick wins should be assessed regularly and solve any detected obstacles immediately. The previous concept is captured in the words of participant (29) "Change management requires a strong system that should set comprehensive plan to avoid resistance and to anchor change".

3.4 Theme 4: Network/interactions-related factors that help the academic medical faculty to be change agents.

Here, the participants agreed that any change agent could not work alone, instead, he/she needs people who believe in them and are ready to take the initiative for change. These people also should show enthusiasm to adopt new behaviors and concepts and disseminate them to others. The participants agreed that a change agent should be a role model and a good communicator having strong social connections to enable him to recruit a strong supportive team. A significant role play in this team is the innovators. According to one participant, the innovators are pushing the process of change to adapt to the present situation. Another participant (P14) added 'Innovators are considered one of the essential endeavors in the education and teaching challenges. As from my vision, any change to happen needs the collaboration of the innovators whom the wheel of change can rotate, and the change comes to the light.'

Essential techniques to engage the targeted community in the change, as explained by the participants, are witnessing real short success and quick wins as well as recruiting a team of change adopters including public figures/ charismatic leaders who can recruit and inspire more people to be change adopters. *However, one of the participants (P26) added "Diffusing the reform beyond early adopters could be another way for making reform part of the institutional culture and reach to all the faculty members within the institutions."*

The group participants indicated that important network-related barriers to change are the presence of skeptics and the inability to find the required supportive team. The skeptics were identified as the people who are highly suspicious of any information that challenges their points of view and own beliefs. The participants suggested strategies to dealing with the skeptics including understanding their intentions and the underlying reason that is directing their acts, involving them in each step may enable them to empathize, build a rapport, and learn more about their hobbies, their family, and their lives. One participant (P 20) suggested "Do not give up on the skeptics. Instead, understand their concerns and hesitations. Meet them where they are and show them the way. If all attempts fail, the best way might just be to ignore them. Get on your daily tasks and interface with the person only where needed."

A lack of involvement in change was also identified as another important barrier. It may result in relapse/resistance to change. However, it can be easily avoided by early involving all stakeholders in the whole process of change, appreciating their opinions and efforts, asking for their opinions, selecting those who are interested and recruiting them to play major roles in the change process, encouraging discussions and continuously ask for feedback, and finally proper orientations and training. This view was echoed among most of the participants (P 2) "In my opinion, one of the main reasons of the relapse that occurred in my institution regarding online learning is non-involving of the staff members in the process of change and just asking them to implement those changes without proper orientation or training."

By the end of the group, the participants have concluded the discussion by providing tips for a faculty to be a successful change agent as shown in Fig. 4.

Discussion

Medical education is a rapidly transforming world. It needs continuous change and modifications to cope with the continuous updates in the knowledge, techniques, and market requirements. Especially after the COVID-19 pandemic that emerged internal and external challenges confronting academic faculty in medical education. Addressing these challenges requires decisive institutional change agents with an eye to the future and proactivity to grab the opportunities. This academic medical faculty as a change agent should have the knowledge, skills, and environmental factors that can help him to achieve his goal.

In the current study, all the skills identified by the participants are targeting the visualization of the change. In which communication and presentation skills are crucial for any change agent in academic institutions to convince the stakeholders of the importance of the change and involve them continuously through good communication. In line with ¹⁷ mentioned that change agents have to share information promptly, understand the needs of the receiver, use different methods to deliver the message appropriately, and need to understand the channels of communication to and keep the employees informed.

Additionally, the current study added that the change agent needs to have conflict resolution skills. These skills would enable him to adopt multiple viewpoints and deal with faculty diversity. This is in line with other findings of the current study that acknowledged flexibility as significant attributes for any change agent. As when the organizational conditions allow flexibility, creativity and innovations are more likely to develop ^{18,19}. However, a change agent should create a sense of urgency as an important step to manage the change. This point is valid because when academic leaders create a sense of urgency, they alert the institution that change must occur and prepare the organization for the change process. It helps to involve all the affected stakeholders through understanding the need and rationale behind the change. In turn, the change agent will gain the support needed for the start of the change cycle. This point was agreed in literature e.g., in the Kotter model, in which the sense of urgency was mentioned as the first step in managing change successfully ²⁰.

Change is always a challenging concept for everyone, despite their positions. People are naturally resistant to change. Therefore, such a situation should begin with small changes, which are also easily measurable. In this regard, the current study has added evidence about the importance of creating a culture change in the academic institution. This was echoed by ²¹ who indicated that the attitude of the people regarding change is always influenced by past experiences, available information, and individual cognitive processes.

Thus, the current study declared that academic medical faculty as a change agent should be knowledgeable about the stages of change and the underlying emotional response. The participants highlighted the importance of dealing with resistance as it is a critical stage and people undergo emotional depression, they showed a special emphasis on motivation as it stimulates forces that energize, direct, and sustain behavior. This can be explained by the self-determination theory that emphasizes the importance of people's growth tendencies and their innate psychological needs in determining self-motivation and personality integration ²².

Several factors were further identified by the current study to help in the creation of this culture and reach the ultimate goals. Participants identified that measurement through Key Performance Indicators (KPI) which can help the change agent. It provides an important and necessary calibration of performance if coordination exists between the institution's mission, structure, processes, and performance measures. Similarly, ²³ noted that a focused and articulated set of KPIs will help make the strategic objectives of the institution more tangible. Also, ²⁴ added that it gives them form and makes them recognizable, relevant, and understandable to staff.

A shared vision also may help in the creation of this culture as remarked by the participants. They stated that the shared vision will help the change agent and the involved person to understand what is expected from them and monitor their steps. This is consistent with ²⁵ who declared that changing expectations can be a source of discomfort and opposition and prohibit the monitoring of their steps but trust in change agents can mitigate these feelings. This point was confirmed furtherly by the current study participants which identified a key task for change agents, then, is to develop and maintain the trust of stakeholders. This can be explained as continuous communication with stakeholders provides regular feedback about goals and results will help the change agent to establish and reestablish shared language and shared images of the future ²⁶. This was further concurred by the results of ⁸ which suggested that engaging stakeholders and building a shared vision are key elements in many of their change projects. Also ²⁷ tackled the importance of shared responsibility and active participation.

Furthermore, dealing with skeptics early in the change cycle was also identified by the participants. Although skeptics can be a challenge to any change agent, Skeptics can be one of the greatest resources for any change initiative because they are the ones who have concerns, see potential hiccups, notice blind spots, and think they know what is wrong with your idea. Therefore, change agents should smartly deal with them and use this resource most properly for common gain. As suggested in the current study, understanding their intentions and the underlying reason that is directing their acts, involving them in each step may enable them to empathize, build a rapport, and learn more about their hobbies, their family, and their lives. All these strategies will help in creating common ground, building ownership, and gain their commitment as agreed in ²⁸. the study adds evidence on the importance of communication and avoiding the lack of involvement. A lack of involvement will often be accompanied by struggle and resistance no matter how good the change plan is. This is echoed by ²⁹ and ³⁰ who found that with poor communication, the effectiveness of change will be questionable, and employees will be less likely to participate in the change efforts.

Study Limitation:

Although the current study is a qualitative study that uses the experience of faculty regarding the changes that happened in their schools, the findings must be interpreted with caution. The findings might have related to the experiences of the number of faculties presented and therefore cannot be transferred

to a larger population. However, the participants were recruited from different institutions, and have different positions which permit diverse views and experiences that may have been reported.

Conclusion

The current study added to the body of knowledge the academic medical faculty view of a successful change agent. This study was able to evidence that despite the challenges the faculty are always facing, every faculty can be a change agent in his position and different situations. However, several environmental, organizational, and social factors affect the change. Academic faculty as change agents should be transformational leaders who figure out the needs of people and develop ways of addressing them. They should also analyze the causes that disrupt progress and their warning signs and work towards preventing them. Moreover, they should make full use of human resources to identify and develop new talents. Change agent, in addition, aligns internal structures and systems to reinforce all-embracing values and goals. Therefore, Training, supporting, developing, and rewarding the academic faculty to ensure that the next generation of change agents will be equipped to be proactive on the frontlines of any change will be outlined.

Declarations

Ethics approval and consent to participate

Ethical approval for the study was obtained from the Faculty of Medicine-Suez Canal University Research and Ethics Committee. Data collection was done following the Helsinki Declaration. Informed consent was obtained from the participants. The participants were informed about the purpose of the study and its relevance to the field of medical education. All the participants were informed about the purpose of the study and their right to refuse participation or to withdraw from the study without consequences

Consent for publication

Not applicable

Availability of data and materials

The datasets used and/or analyzed during the current study are available at: "Faculty as a change agent", <https://doi.org/10.7910/DVN/CY8HEZ>

Competing interests

We report no conflict of interest in this work.

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Author's contribution

NW: substantial contributions to conception and design of, or acquisition of data or analysis and interpretation of data, drafting the article or revising it critically for important intellectual content, and final approval of the version to be published.

DK: acquisition of data or analysis and interpretation of data, drafting the article or revising it critically for important intellectual content, and final approval of the version to be published.

SF: acquisition of data or analysis and interpretation of data, drafting the article or revising it critically for important intellectual content, and final approval of the version to be published.

EA: substantial contributions to conception and design of, or acquisition of data or analysis and interpretation of data, drafting the article or revising it critically for important intellectual content, and final approval of the version to be published.

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Figures

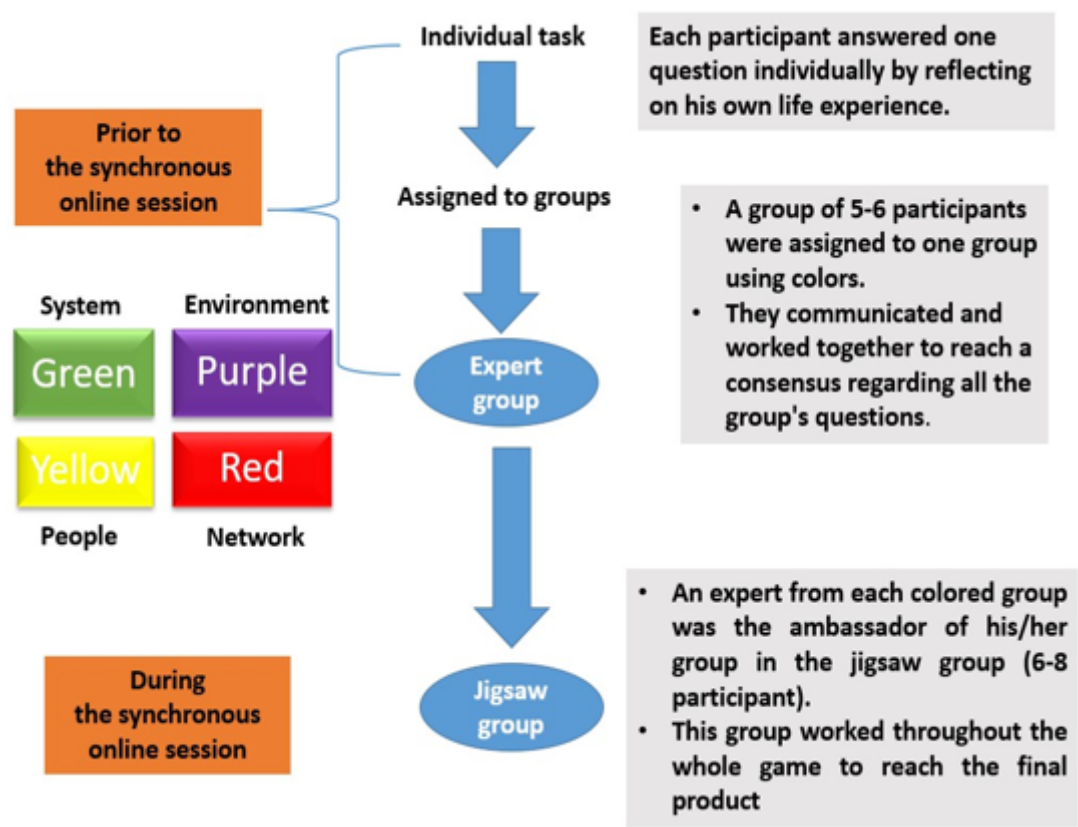


Figure 1

The workshop design merging the Jigsaw strategy and change management game.

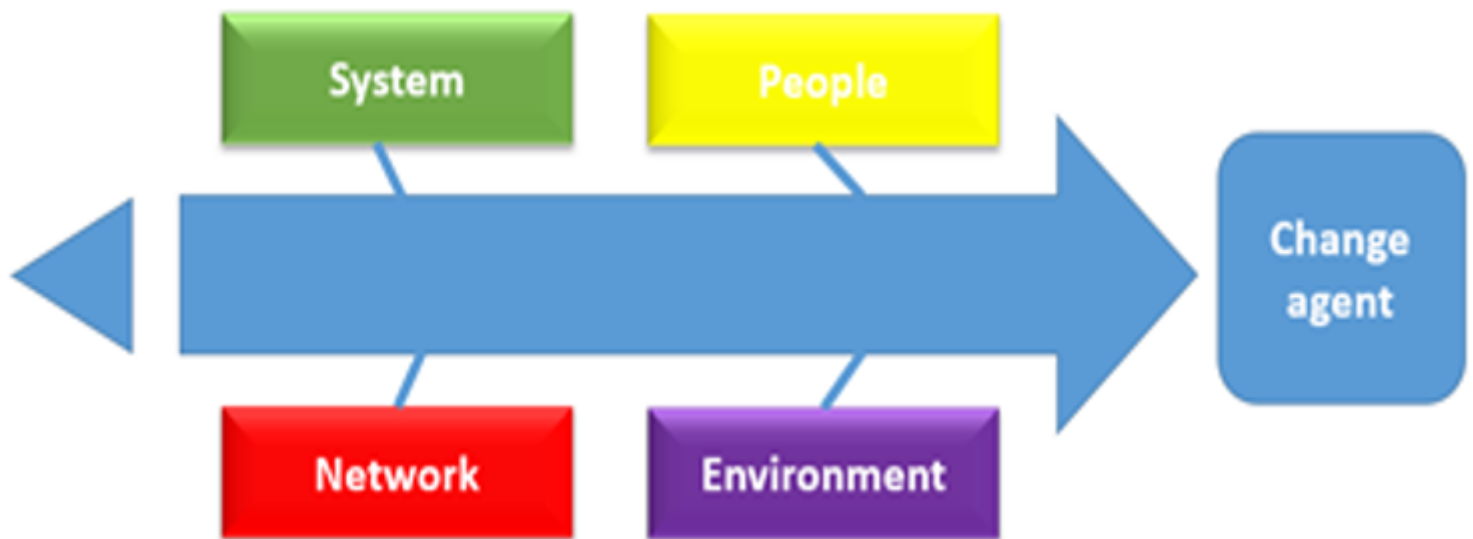


Figure 2

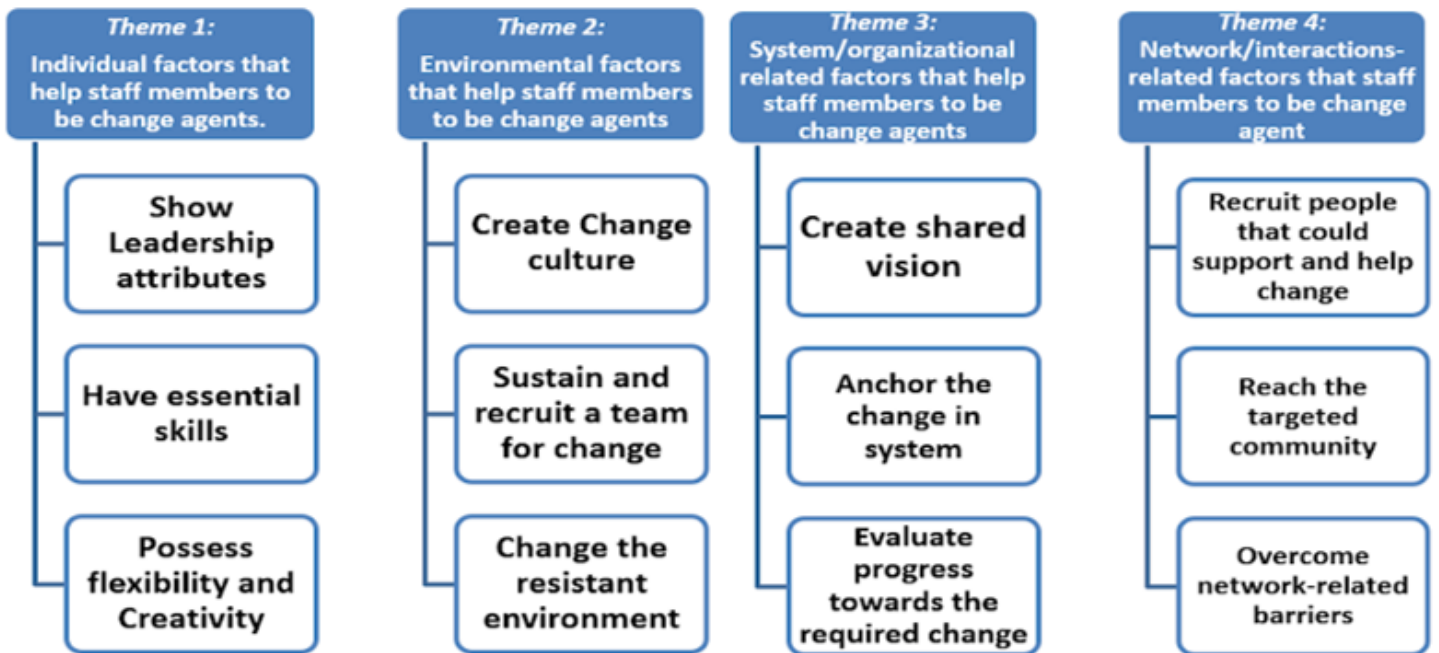
The four dimensions of the change management game



Figure 3

Key factors for a faculty to be a change agent.

How does the academic medical faculty characterize the change agent?



What are the factors that may help the academic medical faculty to be a change agent?

Figure 4

Tips for a successful change agent