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Managing Tele-Health Virtual Teams: “Making The Move: From Bedside To Camera-Side”

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Abstract:

The twenty first century world is often termed as global village. Over time, developments in Information and Communication Technology (ICT) have brought a revolution in the way services are delivered across globe, making it more effective, cost efficient, and accessible (Khalid, Akba, Tanwani, Tariq, & Farooq, 2008). Healthcare is no exception to this. In last few years, Tele-health has served above measures very well in the healthcare domain.

The position to my paper is that the framework of characteristics i.e. environmental, social and leadership are of key importance in managing Tele-health virtual teams. Therefore, it is essential for Tele-health leaders and team members to work with collaboration, and implement second order change to make the experience meaningful and to overcome challenges. The purpose of this paper is to share my personal experience which drives me to write on the topic of “Managing Tele-health Virtual Teams”, highlight challenges faced by virtual team leaders in health care domain, incorporate environmental, social, and leadership characteristics that are required to manage Tele-health virtual teams with literature support, discuss the need of second order change in managing virtual teams, and recommend strategies to increase efficacy and productivity in leading health care virtual teams effectively.

1.Introduction

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2.Significance

There is chronic and increasing shortage of health care professionals worldwide (Hein, 2009). However, Tele-health and virtual teams are way forward to alleviate this shortage. Nevertheless, Tele-health poses unique challenges like privacy, confidentiality, security, ethics, and informed consent which are not that intense in face-to-face communication. Therefore, the significance of this paper is to reinforce the need for policies and procedures aligned with values of healthcare system and to ensure sustainability of the model. Such practices could propose upcoming benefits and advantages for growth of best practices in virtual teams.

3.Case Scenario

I can recollect from my memory one such experience that I underwent in my professional life, where I had to lead a virtual team and managing that was far different and to some extent challenging than managing non-virtual ones.

In the unit, where I worked as a senior special care nurse I got the chance to work with the virtual team. I was excited yet confused about my project. I was told by my head nurse that in this new project I will be leading a team of 5 people who are physically located in 5 different parts of the world. I already had a leadership and teaching experience but challenging task was to lead people physically located in 5 different parts of the world having different cultures, different backgrounds, and different time zones. Leading such a global team was a challenge as well as an opportunity for me. While I was working with that team over the project of sepsis management, I felt that managing or leading a team of people present with you physically is different from leading those people who are sitting somewhere else and you just dialog or Skype with them to get things done. Moreover, soft

skills of the leaders like motivation, communication and emotional intelligence are more difficult to incorporate into virtual environment. The challenges which I faced while managing virtual team were that there was wide group of people taking session having diverse backgrounds, they have different understanding levels, and building trust relationship with them was a dare. Moreover, taking evaluation on assigned task of every team member is difficult if they are not co-located.

This provokes me to ponder on Tele-health because it also works on the same principles like working with virtual teams. In such setup, to manage every individual appropriately is a big challenge. Nevertheless, the immense impact that Tele-health may have on overall health care accessibility is phenomenal and far outweighs the challenges it poses. Therefore, it is essential for future nurse leaders to be well aware of challenges of managing virtual teams and be equipped to counter them.

4.Literature Review

Pakistan is a developing country with more than 60% of its population residing in the rural area with insufficient health care facilities (W.H.O., 2010). People in Pakistan are facing considerable challenges in getting high-quality, affordable, and universally accessible care. In addition to that, qualified health care professionals do not prefer to work at rural areas which make this scenario worse. The magnitude of the problem gets more intensified due to the shortage of the skilled health care professionals in Pakistan (Khalid, et al., 2008).

In Pakistan, the field of Tele-health is comparatively infant and emerging. In 1998, Elixir Technologies introduced the concept of telemedicine first time in the form of a philanthropic project (Tele Med Pak 07, as cited in Kareem & Bajwa, 2012). This organization carried out some pilot projects with name of Taxilla and Gilgit projects. Technology advancement has created unique capabilities for health care leaders to exercise leadership and planning through virtual control processes. Hence role of leaders has become more crucial in leading virtual teams effectively in health care. In order to provide better health care facilities in the remote areas of Pakistan, Tele-health can be a possible solution. Yet to work this system efficiently, it demands virtual team leaders to develop various characteristics. For many years, characteristics of virtual teams and challenges have been analyzed in non-medical field. Consequently, there are very limited amount of researches available in virtual team management in health care (Khan, 2011).

5.Introduction To Tele-Health

The New South Wales (NSW) Health Department of Australia defines Tele-health as “the transmission of images, voice and data between two or more health units via telecommunications channels, to provide clinical advice, consultation, education and training services”. Tele-health has gained great popularity and acceptance, particularly in developing countries, owing to number of reasons. Firstly, it makes healthcare more accessible and Secondly, it enables to take advantage of expertise across the world to solve healthcare problems. This phenomenon is predominantly obvious by the catastrophic medical statistics in Pakistan. According to world health statistics of 2007 “ Pakistan has one physician for 1351 people, a nurse for 3225 people, a midwife for every 6666 people, a pharmacist for 20000 people and a dentist for every 20000 people” (W.H.O., 2007). Apparently, Tele-health seems to be a near perfect solution to address this challenge related to shortage and inaccessibility of healthcare staff. Nevertheless, managing and leading virtual teams sitting across different locations, having different time zones, varying cultural and social backgrounds, poses a unique challenge to healthcare leaders working in virtual set up.

6.Introduction To Virtual Teams

Teams are regarded as virtual when team members communicate primarily by means of technology and they are physically positioned in different places in contrast to traditional face-to-face meetings (Jones, 2009). Virtual teams are defined as cross functional groups whose members operate across space, time, and organizational boundaries, and who are linked through information technologies to achieve organizational goals (McShane & Von Glinow, 2008). There are various technologies used in virtual communication which incorporates use of the Internet, intranets, e-mail exchanges, real-time videoconferences or meetings, instant messaging, and phone conferences (Jones, 2009). This depends on the requirements of team members and the use of technology in that particular situation.

7.Leadership In Leading Tele-Health Virtual Teams

Prosperous leadership entails strong communication amongst team members, yet globalization of the world has hosted the reality of leading teams who are often not co-located. Gradually world is becoming global village and future of Tele-health which includes managing virtual teams in different locations as nurse leader; hence has its own unique challenge that needs to be addressed. The biggest challenge is that it is something not done before, healthcare professionals are not used to with managing teams online. McShane and Von Glinow (2008) state that "Information technologies and knowledge-based work make virtual teams possible, two other factors- globalization and knowledge management make them increasingly necessary” (p. 292). In any organization, Virtual teams emerge due to certain critical factors. These factors were defined by Gould (1999) as cited in Jones (2009) these include rapid changes and modifications in the marketplace, broad advances innovative types of enabling technology, and growing importance of economic accountability.

Virtual Tele-health care teams are the real patient centered care. (“Virtual Care Team” n.d.). Tele health has implications for patients, families as well as for health care providers and it enhances the efficacy of health care plans (“Virtual Care Team” n.d.). It gives greater access to patients and their families to see their doctors, nurses and clinical specialists; patients also gain confidence in their ability to participate in self-care and self-improvement activities. Moreover, it enhances the patient’s safety in becoming better informed care givers. Virtual teams give opportunity to nurses and doctors in gathering the more accurate assessment of patients located remotely; it allows for the safer and earlier discharge of complex patients and eliminates the chance of getting hospital acquired infections. The patients get more compliant to the complex care regimens as it saves time and increases patients confidence and satisfaction (“Virtual Care Team” n.d.). This results in the better outcomes and lower costs from

better self-care, it also reduces hospital days for high risk populations and providers, virtual teams strengthen ties with employers and members and it leads to better interpersonal relationships with health care providers.

8.Challenges In Leading Tele-health Virtual Teams

In last few decades Tele-health has become very popular. It aids in providing preventing and curative health care mostly to people residing in the rural areas. Health care personals interconnect with patients by means of e-mails, video conferencing and voice chats (Berner, 2007). However, Tele-health is successfully used in developed countries. Whereas, developing countries like Pakistan is still facing many challenges in providing better health facilities virtually in remote areas.

Tele-health works usually on two ways store and forward method and real time method. Khalid, Akbar, Tanwani, Tariq, and Farooq (2008) states that store and forward method is the inexpensive approach of using Tele-health technology. In this method a medical report of the patients which includes vital signs and some special test like X-rays, urine test or blood test reports are sent to physicians for medical diagnosis (Rashid, 2003). Presently there are certain difficulties in using this method; time factor is the real constrain with store and forward method (Ackerman & Carft, 2002). Moreover, the physician availability on time is also one of the hurdles in this method; in case if the patient condition required immediate action.

Real time method is another way of using Tele-health in which the health care providers monitor patient virtually via several contemporary technologies like video conferencing (Ackerman & Carft, 2002). Though, this method is not feasible in Pakistan due to its high cost as high bandwidth which is required for data transmission. Moreover, "In the real time method based telemedicine is quite expensive for progressive countries like Pakistan due to high cost of hardware and communication channels for audio and video streaming involved in video conferencing" (Perednia, 1995 as cited in Kareem & Bajwa, 2012). Other than the high cost of technologies used in Tele-health like cameras, problems like electricity shut down, poor quality internet services, and mobile networks shut down are highlighted barriers in providing health care facility virtually to remote areas. In order to overcome such challenges leaders of virtual teams should seek attention from government sources, funding agencies, and NGOs to provide them funds so that health care system and services can improve in our country.

9.Strategies to manage virtual teams: Framework Analysis

Jones (2009) defines the framework which describes environmental, social and leadership characteristics of virtual teams. This framework is helpful for Tele-health leaders and team members in managing virtual teams (Appendix A). Environmental characteristics exemplify the physical requirements of the virtual team setting such as technology, work space, or geographical location. Social characteristics signify team level perspectives on both individual and collaborative team social characteristics, and leadership characteristics illustrate what traits, qualities, and actions are required of virtual team leaders (Jones, 2009).

Environmental Characteristics

9.1.Multiple Modes Of Communication

There are multiple modes of communication between the virtual team members which includes use of internet, intranet, e-mails, real time videoconferences or meetings, text messaging, telephone conferencing etc. (Lumsden and Lumsden 2004). However, this is a misconception that virtual teams are totally depending upon technology whereas face-to-face meetings are also the part of virtual communication (Sasso 2008). Non-verbal clues can be missed if virtual team leader totally depend on technology. Therefore Tele-health leaders should also include periodic face-to-face meetings with patients and staffs whenever possible, it helps providing the problem solutions. It also helps to overcome the loss of nonverbal clues that represent 80 to 93 Percent of the connotation individuals obtain in face-to-face communication (Barrett, 2006). On the other hand, video conferencing is also important in overcoming the absence of non-verbal cues. But this also requires keeping a transcribed record of the video meeting to include up-to-date notes and mind-mapping during the meeting (Sampson 2008). For basic, text based communication emails and sharing of the documents are vital, but it cannot be a substitute for diagrams, graphics, or replace the importance of face to face communication (Gould 1997, as cited in Jones, 2009). The proverb that "a picture is worth a thousand words" is a worthy portrayal of the associations between verbal and non-verbal communication methods.

For the team success it is important for a Tele-health leader to be flexible and use multiple modes of communication. Modes of communication also depend upon the physical space, geographical factor and time zones. For instance for real time video conferencing is important for each member of the group like patient, family members, doctor, and nurse to access that conference at the same time. Appendix B describes different options that how virtual teams can communicate (Jones, 2009).

9.2.Technological Support

All members of virtual teams must be skilful and proficient in the multiple modes of communication. Often members of virtual team do not receive sufficient level of training as many organisations undervalue the necessary training. This results in the hindrance for the health care providers and receivers to work efficiently. However, research reports that elementary training in the benefits afforded by new applications and advancements can offer an astonishing return in augmented productivity. (DeMarie, 2000). Moreover with the technological training, virtual team members should possess the advance level of communication skills (Katzenbach & Smith, 2001). This is important for the team dynamics so that all team members could participate and integrate technological methods with flexibility (DeMarie, 2000). Barret also supports this idea that one aspect that appears to assist effective forms of team dynamics and shared practices is the incorporation of a communal technological working space or a virtual team room (Barrett, 2006).

9.3.Shared Work Space

In virtual teams, all the team members are not obligatory to share the space at the same time. Though, it is essential to have the accessibility of mutual work zones this can offer the prospects for evolving development of ideas and design of documents in a conjoint space (Benson-Armer & Hsieh, 1997). Establishing of joint work areas contributions virtual teams to develop

interpersonal relationships and it also provides schemes of sharing information that is critical to team success. Benson-Armer and Hsieh (1997) recommend that having a nominated work area (such as a web page) permits each team participants to use the existing technology for their advantage.

9.4. Structured Problem Or Task

Riggio explains knowledge-based team work via highlighting on collaboration. "Rather than each worker independently contributing a piece to the final product, as in traditional work teams, virtual team members share skills and resources, working collaboratively to get the job done" (Riggio, 2008, p. 413). This defines that a virtual team can accomplish any task as a tradition team can do. However, researches have proposed that structured problems or tasks as contrasting to vague "brainstorming" tasks likely to be operational in virtual team situations (Lureya & Raisinghani, 2001).

In conclusion, it is vital for a virtual team leader to be innovative and put their sheer efforts in contrast to a tradition team leaders do. This includes proper training in using different technologies and modes of communication, proper shared electronic work space, and having a well-defined structure problem in order to interchange ideas and work commendably.

Social Characteristics.

9.5. Cross Functional Teams

Virtual team members are more knowledgeable, expert, and skilful in contrast to the traditional teams this is for the reason that most often virtual teams are miscellaneous and multidisciplinary. They don't have geographical restraints. Therefore, best staff can be hired around the world. Teams can "go any distance to bring in just the right expert for the job" (Lumsden & Lumsden 2004, p. 101). Consequently, higher level of professionalism requires in the virtual teams therefore the members of virtual teams have higher requirement for trust as compare to the traditional teams. Every vocation consists of ethics and regulations that subsidizes to "shared beliefs" and this commonalties results in the "store house of credibility and trust" among teams (Barrett, 2006, p. 256). This is how every member can trust and rely on each other by achieving goals and complete the designated responsibilities with little supervision.

9.6. Self-Managed Skills

It is important for the success of the virtual team that each member should be self-reliant, flexible, adjustable, and trustworthy. It is expected from the virtual team members to "manage their own project and evaluate their own performance" (Schultz & Schultz, 2010, p. 214). Virtual teams are most often self-managed teams as they get less supervision as compared to traditional teams. Members of virtual team work in somewhat informal environment but they don't have power over the authority of team leaders (Riggio 2008). However, it is of key importance that both team leader and team members should trust each other because in virtual teams jobs are not done under direct supervision.

9.7. Communication Skills

All team members in Tele-health virtual teams should have great command on communication skills in order to overcome lack of non-verbal communication. Misunderstanding and confusion can lead to poor outcomes because virtual teams limit face-to-face interaction therefore it is vital to communicate clearly. Furthermore, According to Gould, one of the key elements in the victory of teams is the trust and relationships that are developed amongst team members in face-to-face meetings (Gould, 1997, as cited in Jones, 2009). But as we discussed above that virtual teams are not completely dependent on the technology face-to-face interaction are also important for building trust relationship. Jones (2009) explains that "Non-verbal communication is like learning a foreign language and, just like foreign language training, learning non-verbal communication has to be structured" (p. 23). For this reason Tele-health leaders should arrange programs to train every team member to develop non-verbal communication skills.

10. Leader Characteristics

10.1. Mentorship And Guidance

Virtual teams require an on-going mentorship and guidance beyond that of traditional teams. Building trust in virtual teams is more difficult, therefore being organized in meeting goals is more crucial. According to Barrett, with a virtual team, a high level of commitment is even more critical than with a traditional team (Barrett 2006). There are some common requirements which a virtual team manager has to follow as traditional team required. However, virtual team managers need to broaden and expand their horizon in customizing some of their leadership and management practices and skills in order to face new challenges. "In a recent study of 500 virtual managers, 90 percent of them perceived managing from afar to be more challenging than managing people on-site" (Connaughton & Daly 2004, pp. 49-50).

In order to overcome this challenge a virtual team leader can only be effective when he demonstrate continuous mentoring characteristics and this requires a leader to be understanding, empathetic and able to show concerns for each team member (Jones, 2009). It is vital for a leader of virtual team to develop shared vision by guiding every individual member of the team so that they appreciate their contributions to accomplish those objectives, this way a leader can develop a high performing team. However, coaching and facilitation remains the vital job in managing virtual teams so that each member can be implicated in the process.

10.2. Monitored Collaborative Workload

Virtual teams consist of people from all around the world and it is an advantage that they have the capability to employ members with greatest qualification. But, one of the pitfalls of virtual team is that they get overwhelmed because of heavy workload. The organizations tend to assign more work since travel time is reduced and conducting work from distance (DeMarie, 2000). This is

also supported by Schultz and Schultz (2010) that members of virtual team feel more pressure to answer e-mail and other correspondence at any time and never feel away from the job. However, leaders should focus on collaboration and balance and should provide clear guidance so to prevent confusions in completing tasks and meeting deadlines. Paprone (2004) identified three key activities of collaboration in virtual teams this includes controlling, organizing, and motivating.

10.3. Defined Teams Standard Operating Procedures

One of the important aspects of the virtual team is to define the ground rules at the very beginning as Gould (1997) states as cited in Jones (2009) establishment of norms tend to prevent misunderstanding and conflict. Connaughton and Daly (2004) support this idea that successful leaders have learned to set the rules at the establishment of team. In addition, virtual teams should have their processes where virtual teams can interact face-to-face when encounters some serious conflicts.

10.4. Decision Policy

Virtual teams often require taking decisions on their own. However, every member should know that what decisions require leaders or sub-ordinates inputs. Every organization should have their well-defined decision policies. Yet, decision making in virtual teams is more crucial as explained by Pleban, "one of the critical components to unit success is the leader's ability to recognize environmental cues and relevant situational factors, maintain situational awareness (SA), apply appropriate strategies, and make effective real-time decisions" (Pleban, 2001, p. 11).

There is an information explosion due to advances in technology which results in complexity, ambiguity, uncertainty and information overload. Therefore, clear decision policies can prevent confusions and increases productivity.

Application of 2nd Order change theory in Managing Tele-health Virtual teams

As discussed above that leadership role is emerging in Tele-health. Therefore, to manage this role in a proper manner a change in mind set is required. Moving from real (face-to-face) to virtual team has different dynamics hence, effective change management is a key leadership skill required in virtual teams. Watzlawick and Weakland (1974) as cited in Lorenzi and Riley (2000) defines that leadership in virtual team functions on two levels described in (Appendix C). First-order leadership is primarily functional; it functions within the constrictions of, and strengthens existing in structures. Conversely, Second-order leadership is principally transformational, and functions to transform or renovate structures as desirable (Lorenzi & Riley, 2000).

However, in my point of view for virtual teams, especially for ones under transformation, second order change is required. Second order change entails reconceptualization and redefinitions of things and the way it is to be conducted which require shift in thinking to other logical levels. Fullan (2001) explains some traits of second order change presented in (Appendix D), these includes a break with the past and thinking out of the box. Moreover, it is emergent, unbounded, non-linear and complex. Second order change also requires new knowledge and skills to implement and it is neither problem nor solution oriented, whereas it is outcome oriented. Similarly, virtual teams are also task oriented self-managed teams which works by implementing innovative knowledge and expertise. Therefore, implementing second order change in virtual teams would help leaders to manage teams successfully. Reflecting back to my own experience mentioned above, I was able to lead the team effectively only after I adopted and applied characteristics of second order change while managing the team.

11. Recommendations

Jones (2009) suggests that "A virtual team needs a greater amount of training and it is required in both the use of technology as well as operating with limited face-to-face contact." (p. 93). For this purpose it is recommended that leaders should put great emphasis on making decision policies – as it lacks face to face interaction, proper training on technologies should provide to all virtual health care providers and receivers, and leaders need to be relatively better aware of personality traits of each team member so as to ensure positive group dynamics. Khan (2011) proposed few recommendations for developing virtual teams in health care system which includes that leaders should clearly define the purpose for creating the team, fostering team identity by arranging face-to-face meetings, establish communication protocols to keep team members aligned, using coaching to augment team performance, and to use technology effectively. These strategies would lead to "effective virtual teams that complete meaningful task on time, within budget, and with a sense of satisfaction that comes with the camaraderie of working with a group of likeminded and hardworking people" (Khan, 2011).

On the other hand, there are some limitations for Tele-health leaders such as high cost of hardware needed for virtual teams like cameras and other devices calls for government's attention to provide financial aids to rural health care facilities. Moreover, government should provide attention to improve the infrastructure of health care setups and to take care of the security issues in order to enhance the role of Tele-health in expanding access to quality health care.

12. Conclusion

Leading virtual teams in healthcare setup is different from its traditional version, hence requires higher level of demonstration of communication skills. Khan (2011) says that Henry Ford preached "coming together is a beginning; keeping together is a process; working together is success". According to him this quote has a special significance for virtual teams. The leading drawback of virtual teams is that teams are often not co-located and during team interaction visual and physical clues are absent. Therefore, the Tele-health team leaders need to follow environmental, social and leadership characteristics in order to manage virtual teams effectively. This imposes Tele-health virtual team leaders to think out of the box in order to bring second order change in achieving their goals.

Environmental Characteristics				Social Characteristics				Leader Characteristics			
Multiple Modes of Communication	Structured Problem or Task	Technological Support	Shared Work Space	Cross Functional Team	Self Managed Team	Communication Skills	Verbal and Non-Verbal Communication Skills	Mentorship and Guidance	Monitored Collaborative Workload	Decision Policy	Defined Team SOPs

Table 1: Framework of Virtual Team Characteristics

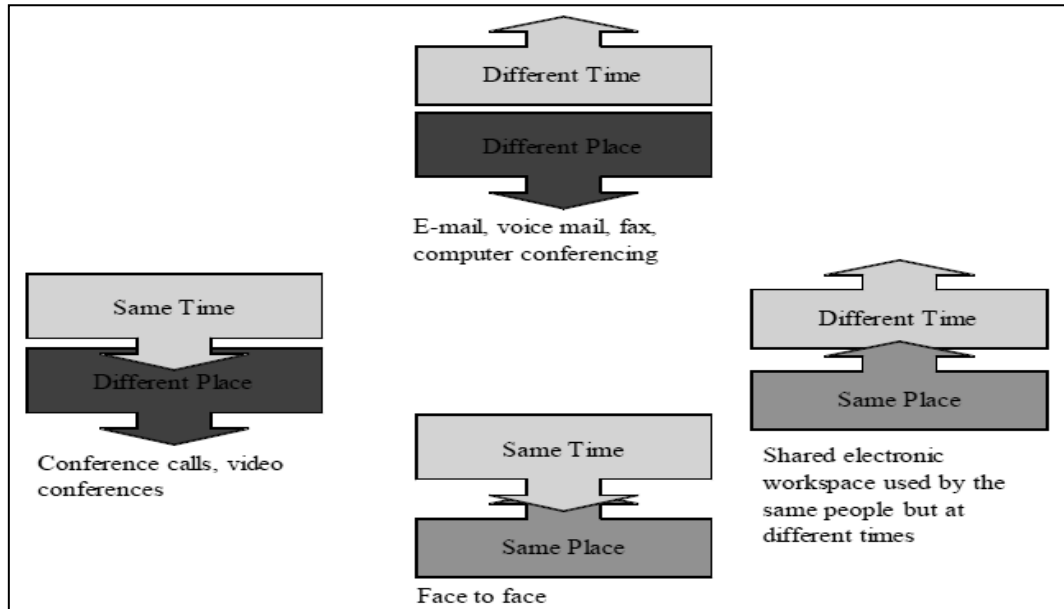


Figure 1

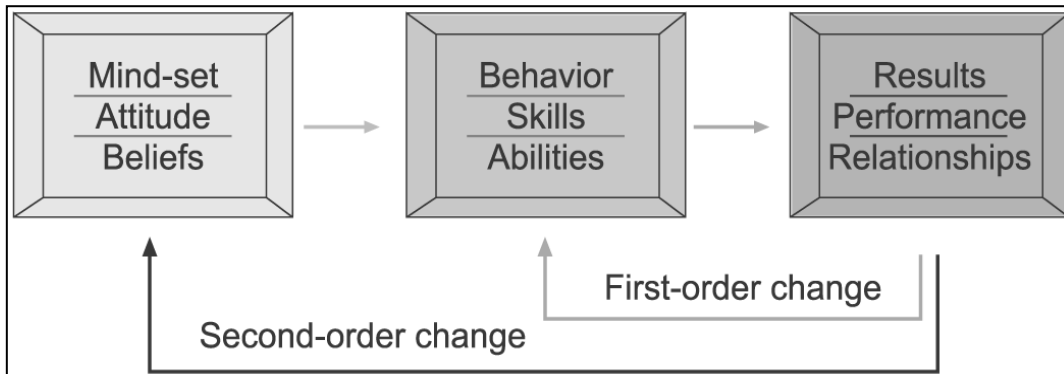


Figure 2

First order change	Second order change
An extension of the past	A break with the past
Within existing paradigms	Outside of existing paradigms
Consistent with prevailing values & norms	Conflicted with prevailing values & norms
Focused	Emergent
Bounded	Unbounded
Incremental	Complex
Linear	Nonlinear
Marginal	A disturbance to every element of a system
Implemented with existing knowledge & skills	Requires new knowledge & skills to implement
Problem- & solution-oriented	Neither problem- nor solution-oriented
Implemented by experts	Implemented by stakeholders

Table 2

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