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Research on Learning Improvement at Scale

James Madison University

August 13, 2021

Solving Complex Problems at Scale: Qualitative analysis of interviews with senior executives

Summary:

Achieving improvement at scale is often difficult for virtually every sector (Kotter, 1995). Higher education is no exception. Colleges struggle to improve important outputs and outcomes like retention rates, graduation rates, and job placement. The improvement of student learning is of particular interest to us.

The proposed study attempts to uncover strategies that facilitate learning improvement efforts. Presently, we understand learning improvement at scale is difficult to achieve. We also understand that lack of cross-collaboration factors into those difficulties. In this initial study, we will interview members of teams that are required to cross-collaborate in order to solve complex problems at the enterprise level.

Our first step is to speak with decision makers, both inside higher education (e.g., provost, trustees, department heads) and outside higher education (e.g., military officers, K-12 teachers, CEOs, engineers, medical professionals) who have experience participating in attempts to solve complex problems like achieving learning improvement at scale. Our interview questions are intended to identify similarities, commonalities, differences, successes, failures, and individual experiences in order to better shape our understanding of systems level problem solving as it relates to learning improvement at scale.

Background:

The United States has practiced assessment for decades; a main purpose being the improvement of student learning (Ewell, 2009). Despite the intent, colleges have little evidence to show that learning has indeed improved (Banta and Blaich, 2010). Banta and Blaich identified several reasons for the lack of improvement, with one of them being directly related to this study: lack of cooperation among diverse groups to solve complex problems. Perhaps not surprisingly, cooperation has also been identified in business settings as a key factor to improvement (Gulatti, 2007).

Coordination, capability development, and connection have also been identified as key factors to improvement. Coordination facilitates focus on important elements by harmonizing information and processes. Capability development ensures that an organization is made up of people possessing the requisite skills, and that clear career paths are established for individuals in possession of those vital skills. Connection in this context is the development of value-added relationships outside of an organization (Gulatti, 2007). Engagement in each of these four activities seems to contribute to successful improvement.

We find clues in the literature regarding how diverse teams might be more successful at accomplishing improvement. Hopp and Oyen (2003) explored the impact of cross training and the use of diverse teams to solve complex systems level problems. They conclude that workforce agility benefits from cross-training. Moss et al. (2017) found that culture factors in heavily as well. Where leadership promoted stability and consistent values, performance improved, and challenges were met with better success. Pedegraft et al. (2019) examined superordinate goals, defined as goals not able to be completed without the cooperation of two or more groups (Sherif et al.,1961)   They found that such goals are a common unifying factor across groups and have been identified across numerous studies as a key factor in the success of diverse teams (Pedegraft et al. (2019).

Finally, Gabarro and Kotter (1980) provide excellent examples regarding the advantages of communication that occurs in more fluid directions, as opposed to linear communication within an organization that moves from a boss to a subordinate.

Based on the literature, we believe that achieving learning improvement at scale is dependent upon cooperation of cross-trained individuals. Through interviews we hope to uncover different strategies leaders have used to foster these conditions and to explore how such conditions contributed to improvement.

References

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Draft Text for Email Solicitation

Good Day [TITLE] [LAST NAME],

My name is John Lee. I am a doctoral student at James Madison University and former commissioned officer in the United States Coast Guard. I have joined the research team of two esteemed faculty members and researchers at JMU, Dr. Keston Fulcher author of the book *Improving Student Learning at Scale*, and *Weigh Pig, Feed Pig, Weigh Pig* along with Dr. Paul Mabry, author of *Strengthening Circular Relationships Between Libraries and Communications Centers*. We are conducting human subjects research into solving complex problems at the enterprise level. This research will examine strategies used to solve problems that involve the cooperation of cross trained individuals.

We are interested in interviewing you regarding your experiences solving complex problems that involved dynamic and diverse teams who were required to cooperate in order to achieve success. We are hoping to learn more about how problem-solving, cross training, and cooperation work in your sector by asking you about things like working on problems that involve multiple teams, factors that impact success, conducting cross training, silo's impact on problem solving, and challenges to achieving improvement at scale. We would also like to know what information or resources might be useful to you in ensuring your organization will be successful at this type of problem solving in the future.

We will conduct the 30-60 minute interview over Skype or Zoom. All of the interviews for this study will be recorded for later analysis. Please let myself, Keston or Paul know if you would like to be a part of the study and we will arrange a time to conduct the interview. Our email addresses are: lee22jw@jmu.edu, fulchekh@jmu.edu, mabreype@jmu.edu.

Thank you so much for your time and we look forward to hearing from you!

-John Lee

Consent to Participate in Research

Identification of Investigators & Purpose of Study

You are being asked to participate in a research study conducted by Dr. Keston Fulcher, Dr. Paul Mabrey, and LTJG John Lee (USCG) from James Madison University. The purpose of this study is to examine problem solving strategies implemented to solve complex problems at the enterprise level.

Research Procedures

Should you decide to participate in this research study, you will be asked to sign this consent form once all your questions have been answered to your satisfaction. This study consists of an interview that will be administered to individual participants via Skype or Zoom. You will be asked to provide answers to a series of questions related to your experience tackling complex problems within your sector, industry, organization or field. Your interview will be digitally audio/video-recorded.

Time Required

Participation in this study will require 30 minutes to an hour of your time.

Risks

The investigator does not perceive more than minimal risks from your involvement in this study (that is, no risks beyond the risks associated with everyday life).

Benefits

There are no direct benefits of the study to participants. The benefits of the research as a whole include broadening the knowledge base for problem solving strategies within large organizations or institutions, as well as helping to shape future research into the topic.

Confidentiality

Whether you participate or not will have no bearing on your future relationship with members of the research team.

Because this project is a considered a self-study, all participants who consent to participate must acknowledge the possibility that the primary investigators listed above (Dr. Fulcher, Dr. Mabry, and LTJG. Lee) may have personal knowledge of the participants and could conceivably identify them based on their responses.

Although your identity will be known to the researchers conducting this study, any future publication or presentation based on this study will only use non-identifiable data. Furthermore, audio transcriptions of your data will use pseudonymic information of your name and other identifying information (e.g., country of origin), to further protect your identity.

The researchers retain the right to use and publish your data. The results of this research will may be presented at an academic conference or in some other academic journal. Aggregate data may also be presented, representing generalizations about the responses as a whole. All data will be stored in a secure location accessible only to the researcher. Upon completion of the study (i.e., publication of the first

manuscript associated with this project), all digital files that match individual respondents with their responses will be destroyed.

Participation & Withdrawal

Your participation is entirely voluntary. You are free to choose not to participate. Should you choose to participate, you can withdraw at any time without consequences of any kind.

Questions about the Study

If you have questions or concerns during the time of your participation in this study, or after its completion you would like to receive a copy of the final aggregate results of this study, please contact:

LTJG John Lee, M. S.

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Questions about Your Rights as a Research Subject

Dr. David Cockley

Chair, Institutional Review Board

James Madison University

(540) 568-2834

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Giving of Consent

I have read this consent form and I understand what is being requested of me as a participant in this study. I freely consent to participate. I have been given satisfactory answers to my questions. The investigator provided me with a copy of this form. I certify that I am at least 18 years of age.

Please confer your consent below by checking the relevant boxes and writing in your initials (if you are conducting this study via Skype, you may type in your initials).

☐ I understand that because this is a self-study that my actual identity may be known by the research staff responsible for collecting and analyzing data. _____ (initials)

☐ I would like to receive a copy of the report and will request this by emailing LTJG Lee at lee22jw@jmu.edu

☐ Please check this box if you consent to participating in this study online via Skype or Zoom.

For participants conducting their interview online, we will use the audio recording function on Skype or Zoom. Please consent to have your interview recorded by checking the box below and initialing it (or typing your initials) on the side.

☐ I give consent to be *audio* taped during my interview. _____ (initials)

Typing your name below will count as your digital signature.

_____ _____

Name of Participant (Digital signature)   Date

_____ _____

Name of Researcher/Research Assistant (Signed)   Date

Interview Questions:

Interview Introduction

"To give you a little background on what we are interested in, when organizations encounter complex and unanticipated problems - how did they put together teams to tackle those problems? And we know that we are never as ready as we want to be. None of us are the Avengers or X-Men - we are imperfect and must do the best we can to navigate uncertainties. We want to look at what kind of skill development, cross-training, teamwork was necessary to be successful.

We will talk about cross-training more specifically in a moment, but we think understanding a bit more about your work and context would help.

1. Can you tell us a little bit about your career and most recent roles there?

2. What kind of projects that tackled complex problems with diverse teams and backgrounds did you encounter in your work?

3. Were the teams ready when you put them together? Did they require skill development or team building as they began?

4. When teams were successful in tackling complex problems, what made them successful?

5. When teams were not successful, what impeded their success?

6. Can you give us an example of where it was difficult to pull people out of silos?

7. How important was/is cross-training and developing flexible employees?

8. What made cross-training successful?

9. What obstacles existed to cross-training?

10. If you had to give advice to a new leader putting together a team, what would you suggest?

11. If there were one tool, resource, or piece of information or data, that would help your organization solve complex problems involving cooperation of cross trained teams, what would it be?