

# COGNITIVE READINESS IN DISRUPTIVE TIMES (CRinDT)

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## **Abstract**

The purpose of this paper is to set forth a research plan and call for volunteers to engage in the research. The paper introduces the foundational documents upon which the research will be based. It also introduces the reader to the pillars of knowledge and learning upon which the studies to date have been conducted. The areas of immediate proposed research are outlined, and the initial steps to attain the information regarding cognitive readiness in the profession of project management. The paper further sets forth the implications for executive managers; project and program managers; and project and program teams, as well as how it could impact decision-making on hiring practices within human resource offices or agencies for project or program managers and the project or program teams.

**Keywords:** Cognitive Readiness, Disruptive Times, Complex projects, Project management, Competences

## **1. Introduction**

While numerous articles and studies have been done on the topic of cognitive readiness, the status of the concept in project and program management has not been done. Various studies have been done on particular types of professions and organizations, such as the United States military, but the focus on project and program management has not been done to date. Such studies are necessary to enhance the awareness of the subject: how the various intelligences serve as foundation for the concept, where the project and program management profession stands in its knowledge of and application of the tenets of cognitive readiness, which includes what the profession has historically referred to as competences, and eventually how the benefits from this knowledge should and can be realized.

A limited view of one of the actions that needs to be taken in the study of cognitive readiness and its application to disruptive times in project and program management, especially in complex projects is the following step-wise flow.



**Fig. 1** Proposed initial survey step

## **1.1 Intelligences**

The intelligences to be studied are brain-based. While the various intelligences have been identified in both academic and popular literature and journals, the study of those intelligences, as applied to the profession of project and program management has not. Further, the need to study mindfulness as an enabling and integrating practice to facilitate the awareness of the intelligences within a project or program manager, as well as the project and program teams, to enhance the abilities of the individual to be a more competent and aware leader and manager has not been done.

## **1.2 Target Group for Studies and Use of the Research**

Project and program management professionals interested in the topic of cognitive readiness based upon the multiple intelligences, both hard and soft skills, as they are often referred to in books on project management, and their application in leadership and management of project and programs, comprise the main target group. The range of the individuals who could be interested in the topic, as well as participating in the proposed research, are: project and program managers, trainers in the subject of project and program management, human resource managers or staffing professionals for projects and programs, and professors providing educational programs to masters or doctoral students in the fields of project and program management. Other groupings of professionals that could have an interest in the research could be: human resource management, leadership and various administrative degree programs, as well as those professors in a variety of psychology, neurology, and adult education programs. Eventually, it is the desire of the core team of researchers that the impact of the research would influence the executive management of organizations seeking not only to have successful projects and programs during normalized times, but during times that are disruptive.

## **2. Purpose of Introducing the Research**

The primary purpose of introducing the research endeavor in the field of project and program management is to encourage participation in the research, whether through facilitating the documentation that are anticipated prior to publication.

In general participants' understanding of cognitive readiness and its role in project and program management, awareness of the project and the information on how to track the project for insights

gained through putting the various findings, conclusions and insights should provide the participants with information to use in their own practices, consultancies, academic efforts or trainings. Through participation practitioners will have the ability to gain access to the research team members to answer questions and set stage for future interactions on the topic and to further expand knowledge and documentation on the subject.

### **3. Introduction to the Foundation for the Research**

The initial book publication on the subject was published in 2019, "Cognitive Readiness in Project Teams, Reducing Project Complexity and Increasing Success in Project Management" ed. Carl Belack, Daniele Di Filippo, and Ivano Di Filippo (1). The book brought together numerous experts in the fields of neurology, social sciences, the practice of mindfulness, and project and program management, and obtained a number of qualified reviews among which we can mention Reinhard Wagner's review (2), just to name one such review by a noted expert in the field of project management.

While editing the material for the book, the writers realized that there did not exist any studies in the application of the intelligences, the application of the intelligences through the use of mindfulness, or the overall application of these concepts to project management and the selection of team members that are cognitively ready to perform for the successful achievement of the stated desired outcomes of a project or program. The need for the ability to have team members and project management teams that are cognitively ready perhaps has been brought to the awareness of the profession via our current disruptive times, the pandemic and resulting economic crises.

The initial hypothesis on which the proposed research is to be based is that cognitive readiness can improve the ability to lead and manage a project or program team. This improvement should enable greater effectiveness in communication and interpersonal relationships, thus providing a high-performance team. By understanding what is necessary for cognitive readiness in individual members, as well as the team, one should be able to select team members or assist team members to be able to achieve success.

It is further hypothesized that the possibility for the project or program manager to enable the cognitive readiness of potential of team members to achieve greater productivity and resilience, in a sustainable way throughout the duration of the project or program even in disruptive times, could be achieved through the insights and knowledge attained through this research and follow-on application studies.

#### **3.1 Cognitive Readiness in Project Team**

The study of cognitive readiness for project and program management was first used as a term of study in 2011 with the project "Cognitive Readiness in Project Team", launched by Russell Archibald, Daniele Di Filippo and Ivano Di Filippo.

Among the various papers published were:

"The Six-Phase Comprehensive Project Life Cycle Model Including the Project Incubation/Feasibility Phase and the Post-Project Evaluation Phase," published in *PM World Journal*, December 2012 (*Russell Archibald and Daniele Di Filippo and Ivano Di Filippo*) (3).

“Unlocking a Project Team's High-Performance Potential Using Cognitive Readiness,” published in *PM World Journal*, November 2013 (*Russell Archibald, Shane Archibald and Daniele Di Filippo and Ivano Di Filippo*) (4).

The team acknowledges that other material in the field have been published since in various publications on the internet, general paper presentations and journals. However, currently those materials are still missing the necessary research to be academically accepted or to gain wide acceptance among practioners, executives, human resource organizations, or organizations practicing project or program management.

### **3.2 Cognitive Readiness in Disruptive Times (CRinDT) Project**

The project, Cognitive Readiness in Disruptive Times, was initiated in 2020 through the International Research Program Capabilities for delivering projects in the context of societal development, CaProSoc, led by Dr. Mladen Radujkovic and Reinhard Wagner through the Alma Mater Europaea, AME, Environmental.

Mr. Wagner invited Ivano Di Filippo to join the International research program. Thus, the project was launched as the Cognitive Readiness in Disruptive Times project (CRinDT).

Through CaProSoc program individuals and organizations involved in societal development are engaging with each other and the broader communities of experts for the benefit of society. CaProSoc aims at forming a global collaboration network of researchers, practitioners, professional associations, non-governmental organizations, governmental agencies and other institutions, which share similarly held values regarding the delivery of projects in the context of societal development (5).

### **4 CRinDT project in CaProSoc Program:**

To prepare CRinDT project, experts from around the globe, multiple disciplines, such as distinguished project management professionals, scientists, and researchers who have contributed to help define and provide substantive information and research, as to how cognitive readiness functions or fits into the domain of project and program management, were organized and began discussing what needed to be accomplished

Ivano Di Filippo, an international neuroscientific researcher and author in the field lead the CaProSoc program, CRinDT. He also represents the Italian Project Management Institute (ISIPM) as its scientific referent. In CaProSoc, he represents an international research study project, Cognitive Readiness in Project Team (CRinPT), where he is the program director, a role that had been done by Russell Archibald until 2019. In these various roles, Daniele Di Filippo has assisted Ivano Di Filippo.

Other lead participants in CRinDT are Rebecca Winston and Jesus Martinez Almela as primes of the project. Both of these professionals are well known in the world of project and program management, as thought-leaders and contributors to the knowledge of project and program management through writings, lectures, and other professional contributions.

#### **4.1 Foundational Elements for Cognitive Readiness in Disruptive Times**

For the purposes of the research to be conducted, the connotative definition of cognitive readiness is, *“the mental preparation, including skills, knowledge, abilities, motivations and personal dispositions, needed to establish and sustain outstanding individual and team performance in the complex and rapidly changing environment of project, program, and portfolio management.”* (6)

The pillars of this definition are: mindfulness, cognitive, social, and emotional intelligence. These pillars are the building blocks that require more research, as to their direct impact on project and program managers and their success.

One researcher, Melanie Mitchell, has suggested that each profession should develop a working construct to enable them to be impactful through not only the basic knowledge of cognitive readiness, but also how to apply the knowledge. Without the research proposed, the profession of project management is currently missing the knowledge base and case examples to enable such a working construct.

The second element for the research is the connotative definition disruptive times. While consensus appears to have been achieved on the view that we are currently living in disruptive times, no consensus exists as to what it means in the context of project management, a team, an organization or the broader marketplace.

Disruptive times need not be health-oriented. However, to determine what is truly disruptive and what is not, one needs to distinguish a baseline of normal risks in the activities being undertaken. One needs an understanding of what is perceived to be normal and the variety of factors or combination of factors on which this normality is based, as well as how far from what is deemed normal one must experience to state one is experiencing disruptive times.

Again, further research and understanding needs to be achieved. However, one can state that several impacts could create a disruptive time, including, but not limited to: environmental, social, political, supply-chain, team, personal, and the list continues.

These disruptive impacts can be internal or external. Examples of internal disruptions could be: redundancy layoffs, reprioritization, internal customer changes, or merger. Examples of external disruptions could be: downturn in the market, supplier which has gone out of business, exchange rates change significantly, merger among the customer base, loss of distributor of a key component, transportation disruption, or even a global pandemic.

The definition of a complex project has been a source of debate in the project management community for years. However, some consensus appears to exist around the fact that they involve highly impactful decision-making involving inter-related situations within the project that present through risks and constraints that involve significant schedule and cost decisions.

During disruptive times, these characteristics intensify, and perhaps could be argued, make the project or program more complex or can cause a project or program to become complex. When disruptive times occur, they make it more difficult or prevent a project or program from being able to achieve the outcomes planned for a designated period of time.

By understanding cognitive readiness of the individuals in a team and among the team members, one could be able to assess better the steps that need to be undertaken to continue to achieve the project and program outcomes, as well as determining what tools and the application of the same should be done to facilitate the achievement of the outcomes. The three intelligences that individuals possess and the tool and practice of mindfulness that facilitates the use of one's abilities

and knowledge need to be balanced for the specific situation and in conjunction with an understanding of the other team members and their cognitive readiness.

As Kathleen Hass, a researcher in complexity science, stated, *“As complexity science teaches us, human behavior is complex because humans are always reacting to their environment, and therefore human activity is impossible to predict. In addition, teams are complex adaptive systems within the larger program, the program is also a complex adaptive system operating within a complex adaptive organization; the organization is trying to succeed (by changing and adapting) within a complex adaptive global economy.”* (7).

For too long project and program management standards, education and training have focused on the “hard skills” of project management, generally considered to be those that allow the project or program manager to manage the cost, schedule, and scope, as well as the integrating knowledge areas such as quality and risk. This trend has started to shift towards the “soft skills,” such as team motivation, communication, flexibility, and leadership. However, the CRinDT project suggests that in order to apply these soft skills effectively in any given project situation, one needs to understand the level of cognitive readiness individuals possess, as well as the team.

Finally, one needs to understand the connotative definitions of the three intelligences and mindfulness.

**Cognitive intelligence** is generally defined as one’s mental capabilities, including but not limited to reasoning, understanding complex ideas, solving problems, abstract thinking, experiential learning, and related concepts (8).

**Emotional intelligence** is defined by Daniel Goleman as “a crucial set of human capacities within us as individuals, our ability to manage our own emotional and our inner potential for positive relationships.”

**Social intelligence** is further defined by Goleman in relationship to emotional intelligence, as “beyond a one-person psychology...to a two person psychology: what transpires as we connect.” (9)

Mindfulness for the purposes of CRinDT is defined, as used by noted practitioner and expert John Kabat Zinn: “Mindfulness is awareness that arises through paying attention, on purpose, in the present moment, non-judgmentally,” says Kabat-Zinn. “It’s about knowing what is on your mind.” (10)

“The concept of the three elements of sensations, emotions, and thoughts is part of that branch of Buddhist philosophy that studies the “void” and is referred to as “the three bamboos.” The control of these three bamboos leads to the first stage of the meditator’s consciousness.” (11)

## **4.2 Neuroscience Based Approach for CRinDT**

The principles applied to the projects will be adopted in communion with the experiential ones and integrated with the principles of what is called “hard project and program management skills”. Regarding the basis of neuroscience applied, they are the most recent principles like neuroplasticity and epigenetics.

The research to be done in the area of project and program management will be integrated with various pieces of research performed by neuroscientists, psychologists, and behavioral economists. These areas of science are engaging in research regarding the area of cognitive readiness, especially in the area of leadership. Through the application of research done by these other teams and the proposed research in CRinDT, it is proposed that one should have a more complete understanding of what it means to be cognitively ready to perform and be successful in delivering the outcomes and benefits of projects and programs in disruptive times.

### **4.3 CRinDT - Thesis, Hypothesis, Purposes**

- ❖ Thesis: Understanding the necessary level of cognitive readiness of the project or program team to undertake a project or program during times of uncertainty and disruption as compared to normal modes of project and program management is an essential management tool to being able to achieve milestones and project and program success.
- ❖ Hypothesis: The level of cognitive readiness of the project or program team required, when undertaking a project or program during times of uncertainty and disruption is different, especially in the areas of social and emotional intelligence, known by project and program managers as the soft skills. Although some areas of cognitive intelligence could be required, such as communication specialists or organization behavioralists, which are knowledge-based areas that blend the emotional and social with cognitive.
- ❖ Purpose: Present new and important brain-based understanding of competencies for project managers and executives involved in complex projects and programs during disruptive times.

## **5 Support for Leading Associations Research and Statements**

Cognitive competence or capabilities contribute to the holistic competence philosophy of project management. In particular, the International Project Management Association® and the Project Management Institute® have already begun research into the basic tenets of this book, which are included in “The Eye of Competence” (IPMA) and “The Talent Triangle” (PMI). As stated by IPMA, “The eye of competence represents the integration of all the elements of project management as seen through the eyes of the project manager when evaluating a specific situation.” (12) After processing the information received, the competent and responsible project manager takes appropriate action. The project manager’s awareness of his inner intelligences such as emotional, social, or cognitive; the outer representation of his cognitive styles; and the inner or intelligences status of the project or program management team members and the stakeholders, as well as the outer as represented by the environment. This awareness may help the project or program to take steps to be effective in the development of a resilient and high-performing team. For its part, the Project Management Institute®, in the “*Pulse of the Profession*” has developed a talent triangle that cites three critical types of project management skills—technical skills, strategic and business skills, and leadership skills. In the Institute’s opinion, competence or capabilities in leadership skills accounts for 81 percent of a project manager’s probable success with technical being 9 percent, strategic and business being 9 percent, and other skills 1 percent. Moreover, the same research found that the lack of focus on talent development contributes to the poor performance of programs and projects. Competencies or capabilities that were previously successful, while still necessary, may not be sufficient for today’s project managers and teams in the face of increasing project complexity and uncertainty (13).

An essential framework for managing and minimizing the effects of complexity that stem from both human behavior and ambiguity. Additionally, cognitive readiness would enable a project team to more easily absorb systems behavior through a greater understanding of one another's individual and combined capabilities for handling those behaviors.

As such, cognitive readiness should be recognized as a primary set of leadership competencies both for self-management and for successfully developing, leading and managing high-performing teams in a complex project environment. The proposed research should be supportive of the research of IPMA® and should provide a foundation for narrowly focused research pertaining to the impact of the use of virtual technologies on the cognitive readiness of project and program managers. This research would be prefaced on the question whether an individual can communicate the three intelligences effectively and productively to various stakeholders. Further, the future research could determine if there are differences in different industrial sectors and the trajectory of research could continue to expand to assist organizations, executives, project and program managers, as well as various technical team members in forming teams, maintaining teams, and being productive, outcome producing teams (14).

## **6 Follow-on steps**

- ❖ Determine if there are areas to be pursued in greater depth or with new methods of review for the field;
- ❖ Determine if other types of organizations should be reviewed against the findings to determine if there are some types of projects and programs to which the findings are more applicable than others;
- ❖ Determine types of organizations to be reviewed against the initial findings currently documented to determine if there are some types of projects and programs to which the findings are more applicable than others or projects and programs that are initially more receptive to the application of the findings;
- ❖ Determine other areas of research with participating organizations that would be beneficial to those organizations in preparing teams to be more successful through cognitive readiness;
- ❖ Identify and prioritize for study the impact of various disruptions to the delivery of project and program objectives, deliverables, and benefits; and
- ❖ Determine a research protocol for those impacts identified, which should be studied, capture the results, and convey to those practicing in one of several modes using a variety of media;
- ❖ Publication of the next book with practical and applicable situational analysis to assist project and program managers, as well as those executives sponsoring projects and programs, and human resource managers staffing projects and programs to be successful in disruptive times.

## **7 Proposal:**

1. Acquire the agreement of organizations to participating in a Call to Action that would be done with at potentially three levels of management, singularly or collectively: executive, functional or line management, and project and program managers. Call to action will also



- be conducted with several individual contributors to project or program knowledge and application bases.
2. Follow-on assessment would concentrate on reports like report papers, surveys, integration of cognitive readiness in school classes, degrees thesis from graduate students. These items would form a platform for conveying cognitive readiness to project and program managers, executives, students, scholars focusing on the three intelligences of: cognitive, social and emotional.
  3. Discussion of the initial and ongoing findings with the participants during a series of future Round Tables, including both group internal round tables for decision-making and those round tables to be made public for the potential user base of the information compiled and assessed.
  4. A series of articles on the research and applications to be written by the participating authorities, as a report of the actions taken and the outcomes. These articles should be published in both juried and non-juried publications to enable the information to reach the broadest audience in the communities identified.

## **8. Conclusion**

The CRinDT is in the process of acquiring agreement from organizations, both public and private, to participate. Individual participants are also being sought to develop scientifically justified surveys, to act as proponents in participating organizations, to develop a series of case studies, as well as future actions such as developing training and educational tools and texts.

CRinDT envisions various round tables and publications, including juried publications to disseminate the knowledge gained and to promote the acceptance of the area of cognitive readiness and the integration of mindfulness to enhance and promote the intelligences.

No matter what technology one is managing or what technology one is using to communicate or disseminate to the stakeholders, including team members, one needs to be cognitively ready to perform. However, research is necessary to determine how to apply the tenets of cognitive readiness, how each organization should determine what is appropriate for its performance, and how to educate and train decision-makers to apply the research.

The need to develop educational training materials as one is able to coalesce the research and develop texts and articles will require specialized individuals with knowledge of how to communicate this material and the best presentation tools.

Global collaboration is necessary for research efforts to move forward. It is also necessary for the acceptance of the research. Through this mutually beneficial effort, the profession of project management will achieve more recognition and be more beneficial to the organizations that use it to achieve their strategies and project objectives. This global collaboration is also a global collaboration of various specialties and knowledge backgrounds to enable the group to have an accepted and well-reviewed research portfolio.

## **9. Acknowledgments**

*In memoriam:* Russell D. Archibald, as the initial lead for the research, globally recognized author, consultant, and lecturer on project management.

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