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## **Team Building and Responsible Conduct of Research**

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### **ABSTRACT**

While team building and responsible conduct of research are essential recipes for optimizing efficient and sustainable outcomes in research, most researchers lack the know-how of how to harness different strengths of individual team members to create a cohesive synergy for effective performance. In addition, most are not trained in the application of established professional norms and ethical principles in the performance of their research activities. These weaknesses intertwine to produce poor research performance teams and outcomes. In this article, the author provides a brief overview of key considerations for building virile and effective research teams and the essential ingredients in responsible conduct of research.

**Keywords:** *Team building, Synergy, Efficient research outcomes, Responsible conduct of research*

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### **INTRODUCTION**

Many at times the word 'group' and "Team' have been used interchangeably but there is a distinct difference between the two. A 'group' is a number of individuals working together while a 'team' is a group of people organized to work together interdependently and cooperatively to meet a need of their customers or organizations by accomplishing their purpose and goals. Thus, a team works toward a common goal and can normally outperform a group (Heathfield, 2019)

Team building is the process of turning a group of individual contributing to an institution or establishment or set of activities into a cohesive team.

### **WHY BUILD A TEAM?**

A team can be built to accomplish a set of goals such as writing fundable research grants or improving daily interaction that researchers engage in when working together to carry out the multi-faceted activities required of their research or performance of structured activities and exercises that team members can lead. Whatever the motive, one of the major reasons for building a team is to harness different strengths of individual team members to create a cohesive team. When two or more people *work together* to solve a problem, a phenomenon called "synergy" is created, where  $2+2 > 4$ . In this way a team can normally outperform a group (Comaford, 2013).

The value in setting up a team can be summarized thus:

- Meets a strong human need for safety, belonging and significance,
- Offers holistic problem-solving through collaborative, creative, flexible thinking,
- Promote efficient, productive results,
- Improve the odds of success,
- Provide opportunities for professional and self-development (e.g., communication, relationship and leadership skills),
- Empower colleagues and individuals to reach their highest and best selves

Thus, team builders in facilitating the process of team building recognize and ensure the use of the 'Five "People" Factor' that Makes A Great in the team building process. These are:

- **Trust** — Team members must know they can count on each other to get the job correctly done, and if challenges crop up, they'll have each other's backs.
- **Respect** — Team members must have self-respect, as well as mutual respect for other team members' abilities.
- **Communication** — Team members must have both the skills and format to communicate openly and honestly with each other.
- **Passion** — Each team member must be driven to accomplish the team's mutual goals.
- **Commitment** — All team members must have the same values, values that dictate doing what it takes to complete projects at the highest level of execution

### CHARACTERISTICS OF HIGH AND LOWPERFORMING/EFFECTIVE AND INEFFECTIVE TEAMS

Unique differences exist between high and low performing teams as well as effective and ineffective teams. These different shapes whether or not the team achieve the best working outcomes and in a long and sustainable manner or the reverse. Such differences underscore why research managers should endeavor to have the highest performing team. These differences are summarized in Table 1 below. What sets apart high-performance teams is the degree of commitment, particularly how deeply committed the team members are to one another”

**Table 1**  
Differences between high- and under-performing teams

HIGH PERFORMING TEAM	UNDER-PERFORMING TEAM
Has a clear and unifying goal for which each team member has passion	Team goal is unclear so individual goals become paramount (e.g. getting a promotion)
Each member of the team is doing what they love to do - leveraging their gifts and talents	Work is not enjoyable; it becomes a boring, necessary evil
Is solution focused—always asking the question, “How can we?”	Problem focused; always looking for what will go wrong and all the reasons for “why we can’t”
Consistently achieves extraordinary results	Business results are mediocre at best and often go unmeasured
Positive, exciting, engaging team culture that supports the free flow of ideas and creativity	Negative, blame-based culture that stifles new ideas due to the fear of “looking bad”
Team members regularly acknowledge each other’s contributions and also deliver honest, timely feedback in the spirit of continuous improvement	Team members regularly engage in “closed door sessions” and complaining around the water cooler about the work and each other
Team members make the effort to get to know each other very well	Team members stay distant, choosing not to get to know each other outside of roles/functions
Demonstrate high levels of trust in each other	Demonstrate low levels of trust in the motivations and intentions of other team members

Team builders must also take cognizance of the characteristics of effective teams and incorporate them into team building process as shown in Table 2

### SYNERGY-THE MAJOR TEAM BUILDING CATALYST

According to Healthfeild (2019) although people talk about building the team in their workplaces but few understand how

to create the experience of teamwork or how to develop an effective team. Belonging to a team, has a lot to do with peoples understanding of the mission or objectives of their organization and how they can passionately contribute to achieving them.

**Table 2:**  
Characteristics of effective teams



Team building can include promoting daily interaction between people engaged in working together to carry out the requirements of their jobs e.g. research grant writing or implementation. This form of team building can come outwith better outcome if group comes up with a set of guiding norms that enables each member know how to appropriately interact on the team and with the rest of the organization.

Team synergy is key team building for ensuring high performing and effective teams. This is because the combined power of a group of things when people are working together is greater than the total power achieved by each working separately. It is a unified effect in which the whole becomes greater than the sum of its parts- thus the overall productivity of a team becomes greater than the sum of each individual’s ability.

- *When individuals come together, their unique perspectives merge, new dynamics are formed, and the team becomes an entity of its own, with a stronger and more nuanced perspective to approaching the task at hand.*

A Team Peak Performance can be achieved if every team member knows their roles and responsibilities, takes upon them what is their share of the load, works at their best and furthermore collaboratively sees the whole process through to completion.

- *A sports team doesn't become champions because one of the players single-handedly rushes the football for each touch down – it takes the whole team's effort.*

Capturing Team Synergy can be done by understanding and using a Three-Step Formula of Diversity, creativity and focus.

**Diversity:** With respect to diversity, team members coming from a different geography, educational background, and distinctive set of life-experiences, affords each team member with a unique perspective to dealing with a situation. These uniquely diverse experiences merge in the co-creative environment of a team and when shared, provides team members with a more nuanced analysis of a situation that allows them to expand on each other's ideas to create something entirely new- then the magic happens.

**Creativity:** The key to unleashing team creativity includes releasing your limiting beliefs and perceptions of what creativity should be like. In this context, there is the need to establish a safe and encouraging environment for team members to test-drive their ideas, make mistakes, and think out of the box. Everyone has talent and can be creative-creativity is not a gift of the few, but an intrinsic quality of every person

**Focus:** Focus is the third leg in the formula. With a focused attention on the task at hand, diversity and creativity can best be utilized to create a co-creative environment that breeds team synergy, and gives rise to innovative ideas for success. There are many ways to ensure that Synergy thrive in a team or organization. Five critical ones include (Bakken, 2007):

- a. Putting the right people on the team and encourage right team talent mix (Visionary, Designer, Organizer, Implementer, Enforcer, Promoter, Therapist, Court Jester)
- b. Understanding how team members are similar and different from one another. The use of analysis tool to map skills and interests of team members can be employed to get this right.
- c. Giving people in a team a sense of purpose as to why they come to work every day and contribute to the institutional or organization's success.
- d. Matching shared goal with clear roles, by putting the right people at the right place, doing the right thing at the right time. This is because goals and Targets work as a motor for motivation
- e. Creating an enabling climate that allows team members to function successfully in their quest to achieve their stated goals.  
In this context create an open culture where communication and differing perspectives are encouraged secondly, open continuous communications between leads and members to creating and maintaining Team Synergy, and part of it is Conflict Resolution. Thirdly encourage engagement of each team member for group decision making and suggestions for change. Leads to better decisions, more creative solutions and higher productivity
- f. Ensuring active management of Differences/Conflicts: Differences should be managed by finding the best solutions from the team member's contributions, despite

differences of skills, opinions, strengths, weaknesses and talents.

- g. Providing opportunities for increased capacity building e.g. Through training
- h. Rewarding teams through group incentives
- i. Providing robust leadership through active listening, playing fair, Seeking input from everyone. The leader should also focus on constructive, collaborative approaches; Acknowledging and appreciating effort; Advocating team approach and be a model team member. Rotating Team Leads for special projects is critical for engaging synergy
- j. Ensuring Trust, Respect and Compassion. This is important because when every individual works and communicates with the basis of trust, respect and compassion, everyone will feel that their contribution is as valuable as the next person – and vice versa, and therefore each person will give their best work for the Team
- k. Assuming the best about people. It's easy to focus on what is the worst things about people when we work with them day in and day out for months at a time. It is essential to put on the rose-colored glasses occasionally and see what is best in them.
- l. Encouraging team members to be supportive of one another.
- m. Conducting Team check-ups to know whether the team has or has not done well together. It is important to always evaluate where things went right or wrong and make an 'improvement action plan' for continuous progress
- n. Getting together socially on a periodic basis to celebrate project successes. This helps the team to stay cohesive

## RESPONSIBLE CONDUCT OF RESEARCH

Responsible Conduct of Research (RCR) is termed "The practice of scientific investigation with integrity". It involves the awareness and application of established professional norms and ethical principles in the performance of all activities related to scientific research. The field of RCR is widely recognized as essential to scientific education, investigation, and training. The following are components of RCR include:

- Collaborative Science
- Conflicts of Interest and Commitments
- Data acquisition,
- Management, Sharing and Ownership
- Human Research Protections
- Lab Animal Welfare
- Mentoring
- Peer Review Publications Practices and Responsible Authorship
- Research Misconduct

### Why the focus on Responsible Conduct of Research?

Over the years, the scientific community for research has been concerned about the way research is conducted because Annals of research ethics are full of horror stories which serve as cautionary tales for current scientists, examples include: *Low oxygen experiment by German Airforce*: One example is illustrative. Physicians from the German air force and from the

German Experimental Institution for Aviation conducted high-altitude experiments on prisoners to determine the maximum altitude from which crews of damaged aircraft could parachute to safety by taking them to altitudes with less oxygen. (Kordata Andrew,2006)

*Freezing experiment of Humans by German Air:* In this case, scientists in Germany carried out so-called freezing experiments on prisoners to find an effective treatment for hypothermia ((Kordata Andrew,2006)

*Tuskegee Syphilis study 1932-1972:* One of the aims of The Tuskegee Syphilis Study conducted in Alabama, USA between 1932 and 1972 was to see how blacks react to syphilis and to determine how long a human being can live with untreated syphilis. According to Ogungbure, 2011, a large group of black men, about six hundred, of whom four hundred were infected with syphilis were compared with the other two hundred uninfected who served as the control group. During the study the men with syphilis infection were left untreated, and suffered adverse effects, ranging from paralysis of limbs due to an extremely dangerous spinal tap procedure used by the researchers to get fluids from the spinal cords of the patients, to extreme neuronal damages, some died from advance syphilitic lesions, wives were infected, and many of the offspring of the participants were born with congenital syphilis. Even when Penicillin was available to treat people infected with syphilis, the black patients with the disease were denied treatment.

More scandals and controversies are on the rise—such as:

*The falsification, fabrication, and plagiarism of data in funded science:* The Committee on Science, Engineering, and Public Policy, National Academy of Sciences, National Academy of Engineering, and Institute of Medicine (2009), defined falsification, fabrication, and plagiarism of data in funded science. Examples are used as illustrations.

Fabrication is “making up data or results. “For example, a student decided to interview 200 out of the minimum sample of 380 study participants because of inadequate time and money to hire research assistants, and then self-completed questionnaires for others in his home.

Falsification is “manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record.” For example, a researcher whose study results show that eating a type of diet has no effect on reduction of hypertension manipulated the values recorded in her dataset to obtain statistical significance that it does

Plagiarism is “the appropriation of another person’s ideas, processes, results, or words without giving appropriate credit.” An example is when a student conducting a study on schistosomiasis prevalence in a district copied verbatim the results of another study just concluded by the Ministry of health as though they were his without acknowledging source.

*The manipulation and distortion of research sponsored by private companies:* This can be exemplified by a marketing company promoting a pharmaceutical drug as effective in the

treatment of all eye infections whereas the product only relieves eye irritation thus compromising objectivity to gain access to money.

*Human embryonic stem cell research:* According to Bernard Lo and Lindsay Parham (2009), “Stem cell research offers great promise for understanding basic mechanisms of human development and differentiation, as well as the hope for new treatments for diseases such as diabetes, spinal cord injury, Parkinson’s disease, and myocardial infarction”.....” However, human stem cell (hSC) research also raises sharp ethical and political controversies. The derivation of pluripotent stem cell lines from oocytes and embryos is fraught with disputes about the onset of human personhood”

*Cloning;* It has been reported that cloning has a great role in human health - the separation of Human embryonic cells in 1998 and as such cloning has been said to offer opportunities of its being used to cure diseases such as neurological problems, Parkinson's disease, and heart problems. These types of benefits notwithstanding, scientists, ethicists, policy-makers, and religious scholars forbid cloning in human beings, because of numerous ethical, emotional, and moral questions. (Nasrullah, Rana Khalid Iqbal, Shahzadi BiBi, Sana Muneer, Sumaira BiBi, Farhana Naureen Anwar (2020).

*The patenting of DNA and cell lines—illustrate the importance of RCR:* Jon F. Merz and Mildred K. Cho (2005) stated that throughout the world, patents are awarded following an examination by a patent agency. “Examination procedures ensure that inventions fulfill the standards for patentability, and that the patent grants protection only for that which has been invented. However numerous ethical concerns have been raised about the effects of such patents on clinical medical practice as well as on research and development. In a few cases, patent owners have used the patents to monopolize the testing service, requiring physicians and laboratories to send samples for testing to the owner or its specified licensees. In these cases, laboratories have been told where patient samples must be sent to have the patented tests performed and how much it will cost. Being compelled to stop providing testing services has serious implications for the ability of molecular pathologists to maintain currency in their field, to treat their patients with comprehensive medical services, to train residents and fellows, to perform research and to run their laboratories in an efficient manner”

Media reports of misconduct scandals, biased research, violations of human research ethics rules, and moral controversies in research in technologically advanced countries occur on a weekly basis, (though scant information on this exists in Nigeria media). The scientific research enterprise, like other human activities, is built on a foundation of trust. Scientists trust that the results reported by others are valid. Society trusts that the results of research reflect an honest attempt by scientists to describe the world accurately and without bias. The level of trust that has characterized science and its relationship with society has contributed to a period of unparalleled scientific productivity. But this trust

will endure only if the scientific community devotes itself to exemplifying and transmitting the values associated with ethical scientific conduct (<http://www.nap.edu/readingroom/books/obas/preface.html>)

Essential Values for Researchers in conducting Responsible Research:

- **Honesty:** conveying information truthfully and honoring commitment
- **Accuracy:** reporting findings precisely and taking care to avoid errors
- **Efficiency:** using resources wisely and avoiding waste and
- **Objectivity:** letting the facts speak for themselves and avoiding improper bias

### **RCR: Responsibility of Research Institutions**

To put researchers on the right road, research institutions (Universities, Hospitals, Private Research Companies) should:

- Have policies that cover various aspects of their research programs
- Have committees to review human and animal research
- Approve and manage all research budgets
- Ensure that laboratory safety rules are followed, and follow established practices for the responsible use of hazardous substances in research
- offering suggestions on different practices which foster quality and integrity of data
- Put a system/procedure in place for investigating and reporting misconduct and conflicts of interest in research or violations of regulations in research with human subjects, or their applications for agency funding
- have Web sites that contain the following information:
  - copies of institutional research policies,
  - links to state and federal policies,
  - required forms and instructions for completing them,
  - responsible conduct of research training programs, and
  - lists of key personnel.

### **Conclusions**

There's an old African proverb that says "*if you want to go fast, go alone. If you want to go far, go together*". It is important to know that so much can be achieved as a team than as an individual. Early researchers are advised to cultivate the habit of team building in achieving a greater goal.

Responsible conduct of research is a vital component of research training. All researchers engaged in studies involving human and animal subjects must complete Bio ethics training and obtain certification every 3 years.

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