

The Recipe for Success at a Competition

1. Introduction

My team snatched the first place at Qatar’s regional competition. While our skillfully programmed and built robots contributed to our achievement, we wouldn’t have gotten that far without teamwork, communication, organization, and documentation. Similar to a dysfunctional machine without its battery or fuel, our team wouldn’t have won without the essential components that constitute a dedicated team. In addition, documentation played a key role in managing the team’s knowledge, thoughts, objectives, and productivity. This paper aims at providing groups with an insight into my team’s experience, along with the “ingredients and methods” that guarantee success and can help improve their own team and documentation.

2. Effective Team Communication

Communication is vital for preparation. However, there is always at least one somewhat taciturn person in a team, which makes it crucial to have several communication and social media platforms. Some members may feel more comfortable communicating in person than through social media and vice versa. My team mainly utilized Google Classroom, a shared Google Drive, WhatsApp, emails, and the conventional verbal communication, paper, and pencil.



Images: “Flaticon, the Largest Database of Free Vector Icons.” *Flaticon*, Graphic Resources S.L., 2018, www.flaticon.com/.

Both digital and nondigital communication tools were essential to putting together a strong, communicative team. Verbal communication was used to clarify information and ensure every member knew their independent tasks and objectives. Writing down our tasks on paper made it easier to retain them and helped us direct our thoughts effectively. However, our verbal discussions were frequently forgotten and papers got lost, which made digital communication tools imperative. Google Classroom and WhatsApp served as reminders of

our meetings and tasks, as well as a place to ask other members inquiries when we couldn't meet in person. Google Drive allowed everyone access to files and helped organize our work and documentation into folders. Thus, my advice is to have several communication tools to reach team members; this prevents communication gaps, confusion and lack of productivity.

3. Team Structure and Leadership

Effective leadership is vital for every team. It not only maximizes productivity and guides members towards the proper direction, but it also boosts team morale. A leader's confidence provides hope to members, which encourages them to stay on track and maintain an unyielding faith in the team. Leaders are also responsible for ensuring every member conforms to their duties. Although there may be an imbalance of stress and work, it's necessary for leaders to ensure members aren't overwhelmed or underwhelmed by their tasks.

Yet, some leaders may feel overburdened at times, which occurs because they don't delegate their power. Team structure and composition can lift off some of a leader's burden of responsibility. My team had an overall student leader, as well as a leader for each subcategory (e.g. programming, building, documentation). This structure put less weight on the overall student leader and placed more responsibility on each member. Categorizing a team into small groups also encourages members to focus and engage with the task at hand, boosting productivity and participation.

4. Freedom of Ideas and Decision-Making Process

Being in a team becomes unpleasant when a "dictator" carries out all the decisions and deprives other members a chance to express their ideas. This totalitarian system also removes the fun of group thinking, and thus, makes the competition less fun for members. Fortunately, my team consistently embraced an open-minded and accepting culture. It was natural for most of my team members to share their ideas on mechanical systems and strategies, discuss the advantages and limitations of them and come to a conclusion. Team brainstorming and decision-making are advantageous because it combines every member's creative mind, which can help form strong ideas, and is accepted by almost everyone, promising less future disputes and perplexity.

5. Team Spirit and Motivation

A person's abilities and knowledge come in handy, but I personally value a person's willingness to cooperate, help and learn more. Some of my team members, myself included, joined Botball with limited knowledge of robotics. Slowly but surely, we learned the game procedures, understood the mechanism of the robots, and fulfilled the requirements for the documentation at the regionals. The experienced members also willingly assisted novices to grasp concepts within robotics, showing the supportive attitude that should be adopted by all teams. It was everyone's determination and work ethic that delivered us success; without it, we wouldn't have progressed forwards. Hence, I urge you to stay motivated unconditionally and spread this attitude to your team members.

6. Conflict Resolution

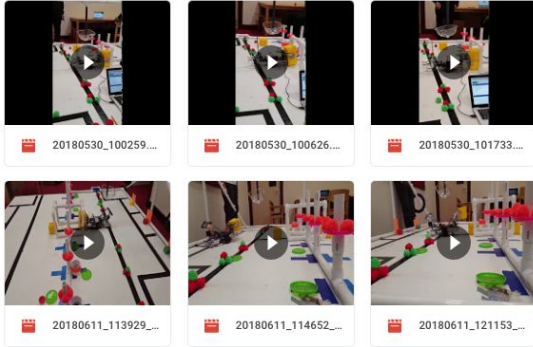
Although my team members were involved in occasional small disputes, they never fell into a difficult conflict. In fact, some minor conflicts may benefit a team by providing various viewpoints and ideas, which is important for the development of mechanical designs and strategies. Yet, minor conflicts should be prevented from becoming childish fights; they should be more similar to mature, fruitful discussions. Most of all, my team's mindset mainly prevented severe conflicts. We overlooked the trivial and personal arguments and cared more about the tasks at hand. Our various personalities and culturally diverse team also made us appreciate each other's differences and contributed to our openness.

Yet, not all teams have the same positive atmosphere. Conflicts become problematic when they are prolonged and evoke profound negative emotions. It's best to identify the type of the conflict before it gets out of hand. Once identified, there should be an attempt to determine the underlying issues, calm down the related members, and seek a solution that satisfies everyone.

7. Documentation

At the regional competition, my team received 100% for the documentation aspect. In some cases, teams tend to overlook documentation and place more weight on programming and building, but documentation is just as important. The regional competition required Project Plans, which are papers that involve producing a schedule, writing an overview of the robot code and mechanical systems, as well a reflection. By simply following the rubric, anyone can receive full marks for the Project Plans. The home-base also provides useful exemplars if your team is uncertain about the quality of their Project Plans. In addition, here's a helpful tip: consistently capture photos and videos of the testing and robots, for it provides a firmer understanding of them while writing the Project Plans.

Yet, documentation is not solely for gaining points. It helps in the long run and keeps the team organized and informed. For this reason, teams should continue documenting although the GCER does not require Project Plans. My team developed a schedule for meetings, along with a recording of the tests and mechanical system, a list of strategies and ideas, and a checklist of our tasks. The continuation of documentation allowed us to test our robots and adjust them based on our observations of their faults. Documentation also made it easier to collect the content for On Sites. In addition, we were more organized and productive because we knew what needed to be accomplished; hence, allowing us to be more prepared for the competition.



Constant documentation of testings and the robots reminds us of the robots' behaviour and allows us to contemplate on modifications.

To-do:

- Design ideas for the components of each
- Research on Youtube: past Botball competitions
- Game strategies
- Schedule + timeline
- Prepare robots so [redacted] and [redacted] can
- Write a review of the trip to Pittsburgh (C)

Brief to-do lists help the team know their tasks and keeps them productive.

Legend

- Mandatory Meeting Days (2:15 pm-3:30 pm)
- Conflicting Dates
- Global Botball Competition
- (If necessary) Weekend Meeting Days (10:00 am- 3:00 pm)

April						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

May						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Schedules keep the team organized and enhances the communication between members.

8. Attitude Before and After a Competition

Never go into a competition with a haughty attitude; it can lead to distress and disappointment if your team doesn't achieve the level they desire. At the same time, never walk into a competition completely underestimating yourself and your teammate's abilities; there is a chance your team will go far beyond what everyone expected. Before a competition, it's best to maintain a level of modesty without compromising your faith in the team. The best feeling occurs when you have the slightest bit of unconfidence and end up achieving an award you didn't expect to gain. However, don't feel dispirited if your team doesn't succeed in what they want. Have a positive and motivated mindset, which will benefit your team in the long run.