

WER

World
Educational
Robot
Contest

World Educational Robot Contest (WER)

OUTLINE

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World Educational Robotics Society
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1. WER Goals

1.1 Mission of WER

- To be the most valuable educational robot contest in the world;
- To be the largest educational robot contest in the world;
- To be the most advanced educational robot contest with the best projects in the world;
- To be the educational robot contest that is favored by preteens and teens around the world;
- To be the ideal platform in the nurturing of technology literacy and the learning of S&T knowledge for preteens and teens;
- To be the ideal platform in the training of successful intelligence (a combination of analytic, creative and practical intelligence) for preteens and teens;
- To be the ideal platform in cultivating and selecting sci-tech talents.

1.2 Educational Concept of WER

- Robotics is the most advanced, comprehensive and constantly improving technology. An educational robot is a theory-based intelligent device that enables students to explore a wide variety of educational projects.
- Three cornerstones of educational robotics are: multiple intelligence, constructivism, and successful intelligence.
- Educational robotics is the best platform for children in cultivating and improving sci-tech accomplishment.
- Educational robotics enables students to engage in projects designed for both entry-level and sophisticated contestants, referring to the constructivism. Students can achieve confidence, skills and knowledge, which benefit them for a lifetime.
- Respect students' multiple intelligences and design appropriate projects and competitions to discover and strengthen students' gifted intelligence, as well as discover and respect their weak intelligence.
- While engaging in contest projects, students' sci-tech accomplishment will be improved, more importantly, their successful intelligence (a combination of analytic, creative and practical abilities), the key element for children to achieve success in the future, can be systematically cultivated during the process.



- Educational robot contests are the arena to train contestants' successful intelligence.
- Educational robot contests are designed based on SITA education methodology, full of high educational value.
- Students should complete all contest projects independently without any direct participation of their coaches. However, coaches can enlighten students in ways to analyze project requirements and design. Furthermore, coaches can design training projects from simple entry-level to sophisticated advanced projects, enabling students to develop gradually.
- Educational robot contests need innovation and prevent alienation. Additional tasks are the focus of the contest to make contestants the real master of the contest.
- Educational robot contests are the contest for students, not for coaches or engineers.
- Educational robot contests are student-centered, rather than equipment-centered, applying the best unified educational robot platform.
- Educational robots enable students to quickly apply, understand and comprehend technology.
- A remote-controlled mechanical contest project, not involving mental training or ability in any real sport, is equivalent to the physical demands of a sports contest. Whereas, an educational robot contest, where the devices operate autonomously, requires and promotes both the physical and mental abilities present in a true sports contest.
- Educational robot contests take both popularity and specialty into account.
- Educational robot contests are constantly perfecting contest rules.
- Educational robot contests are not merely entertainment and should lead the public and media to discover the significant values of educational robotics and understand its importance for human development.
- Educational robot contests have become popular events with widespread appeal and will remain the most preferred science and technology contest for children, the best training ground for cultivating successful intelligence, the best platform to identify, train and motivate technical talents. What will be the next main-stream that surpasses the educational robot contest? It's impossible to appear as robotics is a constantly involving platform with the most comprehensive and advanced technology.
- What matters most for the educational robot contest is not the actual day of competition, but the long preparation and learning process that precedes it. The most important aspects of the educational robot contest lie in the piqued interests, the instigated ambition, the inspired confidence, the unquenchable aspiration, the thrill of success after struggles, and the satisfaction that comes with achievement.
- Educational robot contests are the main way to evaluate children's successful intelligence and sci-tech accomplishment.
- Educational robot contests involve 9 difficulty levels which can be seen as a reference index of successful intelligence and sci-tech accomplishment.
- Children around the world need an educational robot contest that is as popular and authoritative as the Olympics.



2. Contestants and Teams

2.1 Contestants

Preteens and teens from 3 to 18, secondary vocational students, higher vocational students and college students are allowed to sign up for WER contest projects they are interested in.

2.2 Teams

WER encourages teamwork. Contestants should register as a team, consisting of 2-3 members.



3. Contest Projects & Platform

3.1 WER Contest Projects

A contest project is mainly divided into two segments: “Preset Task” (40%) and “Additional Task” (60%). The “Preset Task” refers to the tasks given to contestants in advance. Preset tasks are relatively more difficult, but contestants are given adequate time to prepare. Additional Task refers to the tasks that will be revealed on site. Additional tasks contain easy, medium and difficult tasks. Contestants are required to finish the tasks on the spot by themselves without the coach’s instruction. This requirement is in line with the goal of WER - “An educational robot contest is a contest for students to compete with each other.”

WER projects consist of contest projects and research projects.

3.1.1 Contest Projects (School)

1. Brick Educational Robot Contest (4+3)
2. Brick Educational Robot Contest (Pro)
3. Mobile Educational Robot Contest
4. Modular Educational Robot Contest
5. Humanoid Educational Robot Contest
6. Flying Educational Robot Contest
7. Underwater Educational Robot Contest
8. VR Educational Robot Contest
9. Educational Robot Innovation Contest
10. Brick Educational Robot Contest (NCET)
11. Brick Educational Robot Contest (CAST)

3.1.2 Contest Projects (Artificial Intelligence)

1. Artificial Intelligence Contest
2. Image Recognition Contest

3.1.3 Contest Projects (Abilix Home)

1. Brick Educational Robot Contest
2. Big Brick Educational Robot Contest



3.1.4 Contest Projects (Secondary Vocational School)

1. Brick Educational Robot Contest
2. Modular Educational Robot Contest
3. Educational Robot Innovation Contest

3.1.5 Contest Projects (Higher Vocational School)

1. Brick Educational Robot Contest
2. Modular Educational Robot Contest
3. Educational Robot Innovation Contest

3.1.6 Contest Projects (College)

1. Brick Educational Robot Contest
2. Modular Educational Robot Contest
3. Educational Robot Innovation Contest

3.1.7 WER Research Projects

1. Satellite Robot
2. Antarctic Expedition Robot
3. Moon Expedition Robot

3.2 Contest Platform

Abilix, the global pioneer and leader of education robot contests, with its products fully conform to the educational concept of WER, is the global official contest platform for World Educational Robot Contest (WER).

3.2.1 Contest Platform (School)

1. Contest Platform for Brick Educational Robot Contest (4+3): C203/C203S/SK201
2. Contest Platform for Brick Educational Robot Contest (Pro): C201/SK501/SK901
3. Contest Platform for Mobile Educational Robot Contest: SO901
4. Contest Platform for Modular Educational Robot Contest: SB901
5. Contest Platform for Humanoid Educational Robot Contest: SE901
6. Contest Platform for Flying Educational Robot Contest: SI901
7. Contest Platform for Underwater Educational Robot Contest: SU901
8. Contest Platform for VR Educational Robot Contest: SV501



9. Contest Platform for Educational Robot Innovation Contest: SX901/SP909
10. Contest Platform for Brick Educational Robot Contest (NCET): C201/SK903
11. Contest Platform for Brick Educational Robot Contest (CAST): C201/SK902

3.2.2 Contest Platform (Artificial Intelligence)

1. Contest Platform for Artificial Intelligence Contest: SK501/SK901
2. Contest Platform for Image Recognition Contest: SE901

3.2.3 Contest Platform (Abilix Home)

1. Contest Platform for Brick Educational Robot Contest: Krypton 4/6/8
2. Contest Platform for Big Brick Educational Robot Contest: SY501

3.2.4 Contest Platform (Secondary Vocational School)

1. Contest Platform for Brick Educational Robot Contest: C7/SITA-V
2. Contest Platform for Humanoid Educational Robot Contest: SE901
3. Contest Platform for Educational Robot Innovation Contest: C7/SITA-V

3.2.5 Contest Platform (Higher Vocational School)

1. Contest Platform for Brick Educational Robot Contest: C7
2. Contest Platform for Humanoid Educational Robot Contest: SE901
3. Contest Platform for Educational Robot Innovation Contest: C7/SITA-V

3.2.6 Contest Platform (College)

1. Contest Platform for Brick Educational Robot Contest: C7
2. Contest Platform for Humanoid Educational Robot Contest: SE901
3. Contest Platform for Educational Robot Innovation Contest: C7/SITA-V



4. WER Contest System

- Official Contest Level 1: WER at School Level
- Official Contest Level 2: WER at District / County Level
- Official Contest Level 3: WER at Municipal Level
- Official Contest Level 4: WER at Provincial / State Level
- Official Contest Level 5: WER National Championship / Regional Tournament
- Official Contest Level 6: WER International Open
- Official Contest Level 7: WER World Championship, the highest-level WER contest, conducted annually.
- In order to participate in higher-level WER contests, students usually have to pass the selection of lower-level contests first.
- WER also encourages organizers around the world to arrange informal tournaments within and between schools.
- Winners of the WER World Championships will bring great honors to themselves, schools and countries. They will be awarded scholarship and may even be directly admitted to elite universities or their achievement may be deemed as a crucial basis for university admission.



5. WER History

5.1 Origin

In 1994, Prof. Jake Mendelssohn from the United States, co-founder of Educational Robotics, organized the earliest educational robot contest in the world, Global Fire-Fighting Home Robot Contest. In 1996, students from primary, middle and high school started to participate in robot contests.

In 2000, Dr. Yun Weimin from China, co-founder of Educational Robotics, held the earliest educational robot contest in China, the Abilix Cup. It soon expanded into the greatest robot contest with most contest projects in China. Meanwhile, Dr. Yun Weimin established the educational robotics theoretical system.

In 2012, Prof. Jake Mendelssohn and Dr. Yun Weimin established the World Educational Robotics Society and launched the World Educational Robot Contest in 2013. WER is designed based on their SITA education methodology, eliminating the disadvantages of the early educational robot contest.

5.2 History of WER World Championship

2013, China

2014, United States

2015, Canada

2016, China, 5,000 contestants

2017, China, 10,000 contestants

2018, China, 10,000 contestants

2019, China, 10,000 contestants

2021, China, 20,000 contestants as estimated

5.3 Scale

There will be over 1,000,000 students from more than 50 countries and regions participating in WER contests in 2020.



6. WER Contest Organizations and Global Network

6.1 Organizations

Co-founders & Chairmen of WER and WERS:

Prof. Jake Mendelssohn, Dr. Yun Weimin

WERS consist of Academic Committee, Organizing Committee, Finance Committee and Education Practice Committee.

6.2 Global Network

The World Educational Robotics Society (WERS) is a network distributed toward all WER National Organizing Committees around the world.

WER National Organizing Committees are responsible for hosting WER national championships.

WER Contest also has WER National Representatives, which in charge of organizing WER at school, county, district, municipal, provincial / state and national level, and selecting national teams to attend the annual WER World Championship.

