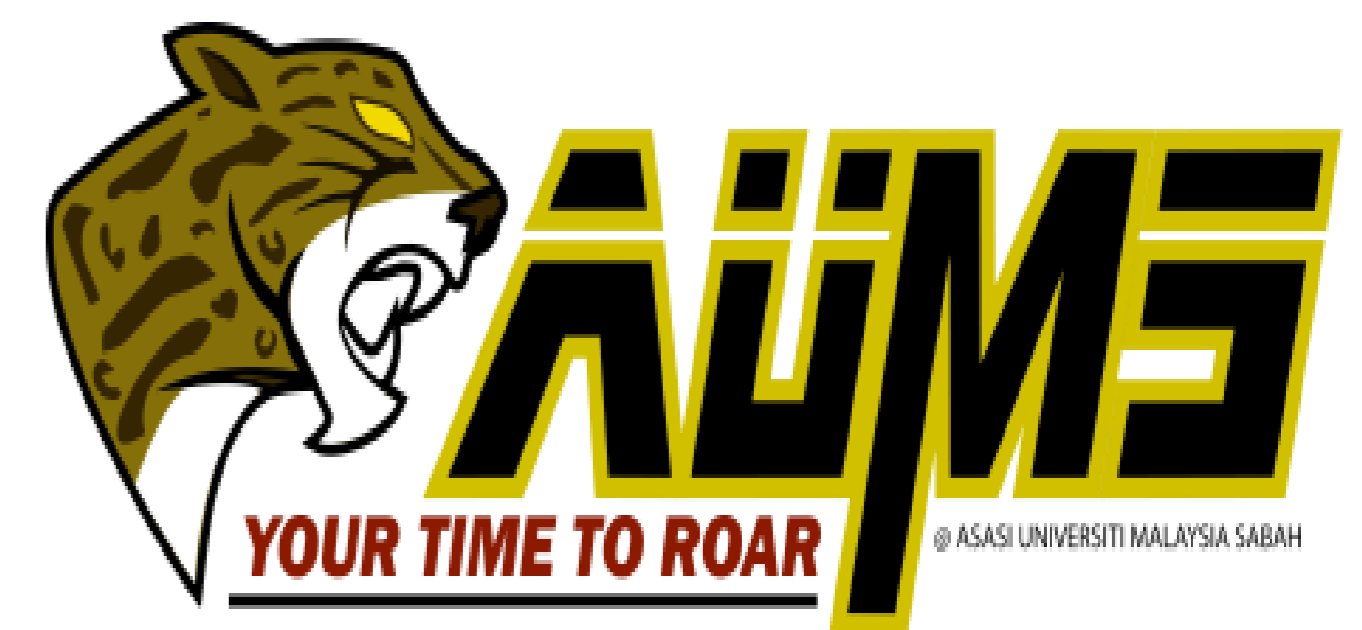


Encouraging Stem Interest Among High School Students Through JIC And YSSC Competition

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1 Objective of Innovation

- Due to declining number of secondary school students enrolled in Science, Technology, Engineering and Mathematics education (STEM) stream, the Preparatory Centre for Science and Technology (PPST) of UMS, initiated competitions as a platform for the students to cultivate their interest in STEM.
- The competitions were designed as *Junior Innovator Competition* (JIC) and *Young Scientist Sci-Show Competition* (YSSC).
- The objective is to gauge JIC and YSSC effectiveness towards students' interest in STEM.

4 Project Impact

- The effectiveness of JIC and YSSC in students' interest on STEM were evaluated through a three-stars rating Malaysia Research Assessment Instrument (MyRA) questionnaire to participants (including teacher).
- The result indicated knowledge, attitude, skills, and aspiration (KASA) transformation amongst the students. Three main aspects were summarized from Q1-Q6 from the questionnaire: learning (Q1 & Q2), interpersonal skill (Q3 & Q4), and STEM interest (Q5 & Q6).
- 82% students agreed that JIC and YSSC were able to increase their knowledge, interpersonal skills as much as ~81%, as well as 84 - 88% in critical thinking. **83.7% - 85.3% students satisfactorily increased their STEM interest and 85% were willing to participate in future competitions.**

2 Teaching/ Learning Principles

- JIC and YSSC are student-centered learning medium.
- Students must work in group and teacher plays a role as a facilitator.
- The competitions incorporate project-based learning approach for teaching and learning principles.
- Term and condition as well as marking rubric were given as an indirect teaching and learning guideline.

3 Innovativeness

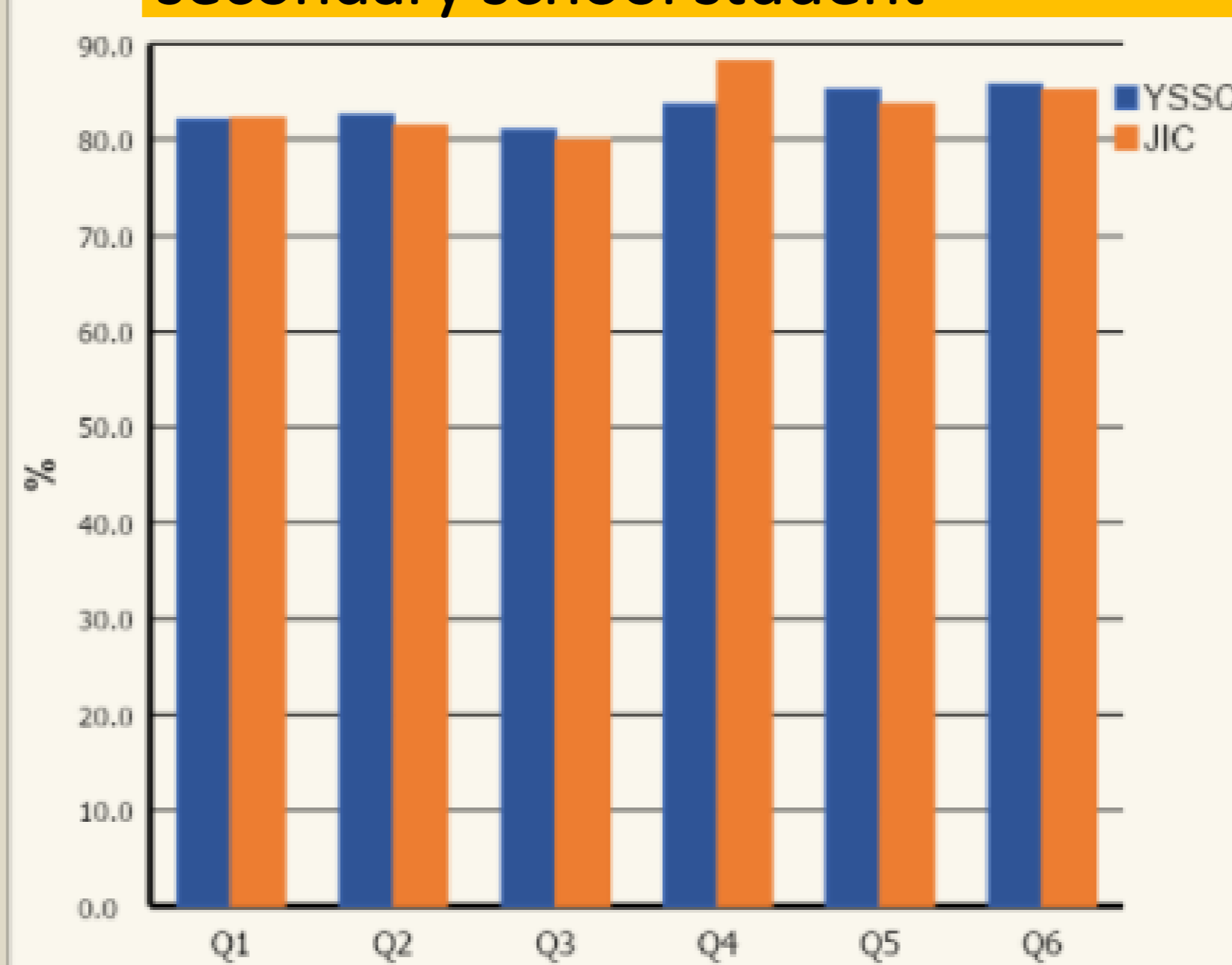
Junior Innovator Competition (JIC)

- JIC requires poster presentation for prototype innovation and open to lower form (1-3) secondary school students.
- Lower form students were introduced with scientific poster writing and presentation
- Poster template were given for reference.

Young Scientist Sci-Show Competition (YSSC)

- YSSC open to upper form secondary student and requires a short video presentation about science knowledge learned in school syllabus.
- Students have to recreate the experiment or invention and translate it to science show via recorded video.

JIC and YSSC competition impact to secondary school student

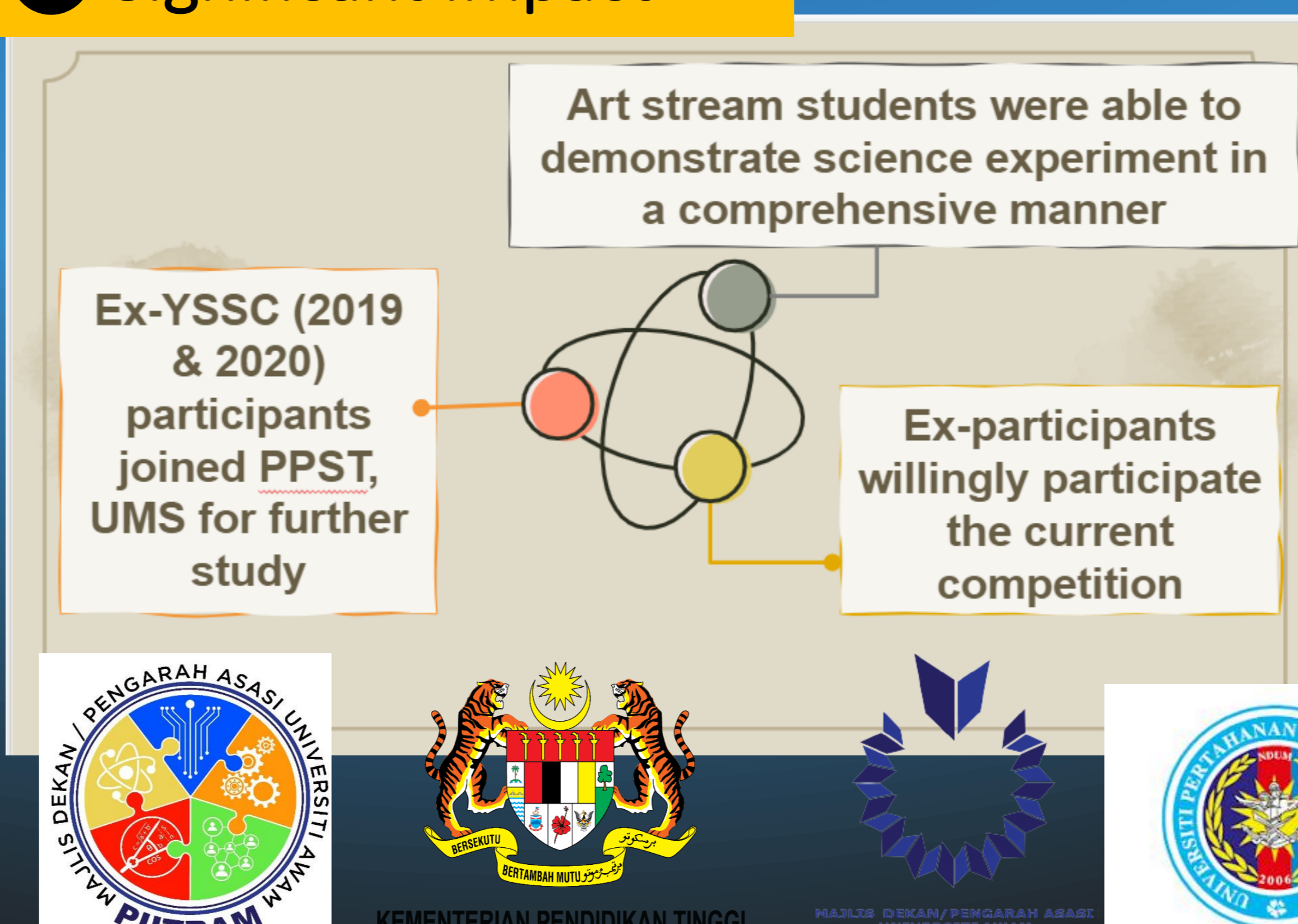


6 Conclusion

Competition based JIC and YSSC programmes have demonstrated inclining STEM interest effect toward secondary school students.

It may encourage students to further their study in STEM field for higher education.

5 Significant Impact



7 Award & Recognition/ Sharing

- Participant in 'Anugerah Inovasi Sektor Awam Sabah (ISAS 2021)
- Published article : Bakri, S.N.S., Lasaraiya, S., Juhan, N., dan Che Hussin, C.H. 2021. Memupuk minat STEM dikalangan pelajar sekolah menengah melalui pertandingan JIC dan YSSC . *Journal of Information System and Technology Management*. 6 (23), 164-179. DOI : 10.35631/JISTM.623015

