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INTEL® GEEK KIDS @N9: UITM AND PENANG SCIENCE CLUSTER (PSC) EMPOWERING COMMUNITIES THROUGH COLLABORATION

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Introduction

Intel Malaysia has initiated the Intel® Geek Kids (IGK) programme in partnership with the Penang Science Cluster (PSC) to encourage Science, Technology, Engineering, and Mathematics (STEM) education among students in primary schools located in rural areas in Malaysia. Following a successful pilot program in 2022, the initiative aims to foster interest in STEM through workshops and competitions. For young learners in Malaysia, the programme seeks to promote interest, empower students, and build a bright future with countless prospects in STEM fields.



The Two-Day Workshop

UiTM Cawangan Negeri Sembilan, Kampus Seremban was invited to collaborate in a state-level competition in Negeri Sembilan. The programme was successfully held on the 23rd and 24th of July 2024 at Pusat Kegiatan Pelajar, Universiti Teknologi MARA Cawangan Negeri Sembilan, Kampus Seremban. Students from 15 primary schools, aged 9 to 12, from three districts in Negeri Sembilan were selected to participate in the program, which took place as a two-day workshop. This collaboration involved a group of lecturers and final-year students from the College of Computing, Informatics and Mathematics in particular, who were specifically trained as facilitators for the workshop. Prior to the event, the facilitators underwent training conducted by the STEM experts from PSC. The training was a fruitful day for the facilitators to boost their confidence and ensure consistency in delivering the workshop. For college students, it also improves their leadership abilities and fosters their professional growth



Figure 1: A photo session with JPN's representative

The selection of participants from the schools was made upon request to Jabatan Pendidikan Negeri (JPN), Negeri Sembilan. During the two-day workshop, the organiser was delighted to welcome the representative from JPN, who visited the event to show their support.

The workshop module covered various topics, including problem-solving and technical skills, which offered a meaningful and exciting learning experience to both students and teachers. The two-day workshop was conducted to introduce students to foundational programming and robotics skills. The first day consisted of interactive sessions, hands-on activities, and mentorship opportunities to enhance their understanding and creativity. The second day involved an innovation project showcase, during which participants collaborated in groups, to develop product innovations based on instructions given by the organisers. This was followed by the presentation of their projects in a competition that was evaluated by panels of experts from Intel Malaysia. The top three winners were allowed to advance to a national-level competition, which took place at the Kuala Lumpur Convention Centre.



Figure 2: Three teams were selected to represent Negeri Sembilan in the national-level competition

The Intel® Geek Kids (IGK) program specifically addresses the significant gap in programming and robotics tools exposure among primary school students. The program was initiated in response to the growing importance of STEM education in the primary school curriculum. Despite the recognised benefits of STEM education, many primary school students have limited access to hands-on learning experiences with modern technologies such as micro-bit and robotics kits. This lack of exposure can hinder their interest and proficiency in these critical areas. Therefore, this event aims to bridge this gap by offering an engaging and interactive learning environment where students can explore and experiment with these tools. By fostering a supportive atmosphere and providing guided instruction, the program has effectively built interest among young learners and encouraged their exploration of future opportunities in STEM fields.



Figure 3: The workshop day

With 90 students participating, the event specifically targeted children with little to no prior experience with micro-bit and similar educational technologies. The primary challenge was introducing these students to the fundamentals of coding and robotics in a way that was both engaging and accessible.

Program Analysis

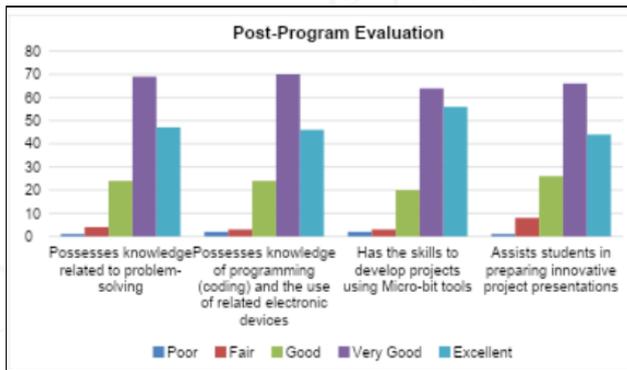


Figure 4: The analysis of post-program evaluation

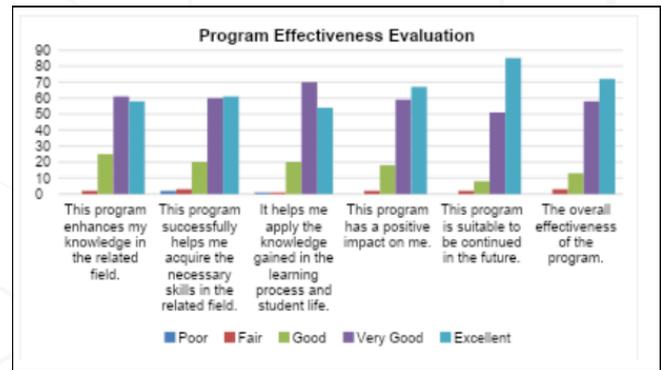


Figure 5: The analysis of the program effectiveness

Figure 4 presents the analysis of the survey conducted after the second day of the workshop. The respondents of the survey comprised students and teachers participating from primary schools. The analysis shows that 96% of the participants achieved the knowledge and skills acquired during the workshop.

Figure 5 presents the analysis of the effectiveness of the programme. The findings indicate that the programme successfully helped the participants to acquire the necessary knowledge and skills. Overall, 98% of participants found that the programme had a positive impact and expressed that it should be continued in the future.



Figure 6: Group photo session with all participants and organisers

Conclusion

The programme successfully introduced primary school students to the basics of programming and robotics through engaging activities, fostering their interest and enthusiasm for STEM subjects. The students gained fundamental coding and problem-solving skills through hands-on learning experiences, laying a strong foundation for future studies in technology and engineering. By ensuring equal opportunities for all participants, regardless of their prior exposure to technology, the programme provided an inclusive platform for every child to explore and benefit from modern educational tools.