Abdimas Indonesian Journal
Vol. 6, 1 (January-June, 2026), pp. 171-180
EISSN: 2808-5094, DOI: https://doi.org/10.59525/aij.1520

Fostering Early Interest in Electrical Engineering Through the Electro Goes to School (EGOTS) 2025 Initiative

Anggi Anugrah[1], Arsenio Ghifari[1], Zenisya Annelia Alimin[1], Andre Suwardana Adiwidya[1], Subekti Ari Santoso[1]

[1] Universitas Pembangunan Nasional "Veteran" Jakarta, Indonesia

ARTICLE INFO

Keywords:

communication systems;
electrical engineering;
internet of things
mechatronics;
power engineering

Article history:

Received 2026-02-17
Revised 2026-03-22
Accepted 2026-04-26

ABSTRACT

In the era of rapid technological advancement, a comprehensive understanding of fundamental electronic concepts has become indispensable for students to address future scientific and industrial challenges. In response to this need, the Electrical Engineering Student Association of Universitas Pembangunan Nasional "Veteran" Jakarta (HMTE UPNVJ) organized a community outreach program entitled Electro Goes to School (EGOTS) 2025. The event, conducted on September 26, 2025, was attended by 70 students from grades 11 and 12 of SMAN 82 Jakarta. The program comprised a semi–talk show presentation introducing the fundamentals of Electrical Engineering, including the department's three concentrations, core academic courses, and professional career pathways. Furthermore, a project demonstration session was conducted in collaboration with three Student Study Groups (KSM), which are Ecovoltech KSM, Internet of Things (IoT) KSM, and Mechatronics KSM. The overall survey results of the EGOTS event showed positive feedback with a score of very good by 35 (54%) participants, good by 26 (40%) participants, quite good by 3 (5%) participants, and not good by 1 (1%) participant. This activity successfully enhanced participants' understanding of electrical engineering principles and inspired greater motivation to pursue advanced studies in the discipline.

Corresponding Author:
Andre Suwardana Adiwidya
Universitas Pembangunan Nasional "Veteran" Jakarta, Indonesia; andresadiwidya@upnvj.ac.id

1. INTRODUCTION

In an era of rapid technological development, understanding the basic concepts of electronics is increasingly important for students as preparation for future challenges. Nearly every aspect of life today involves electronics, communications, and power systems technology, from mobile phones and communication networks to renewable energy and electric vehicles. Therefore, Electrical Engineering graduates are highly sought after now and in the future across various industries, including telecommunications, oil and gas, semiconductor, aerospace, manufacturing, automotive, transportation, service, and bioengineering sectors (Quipper, n.d.). Currently, interest in electronics-based technology

education is growing. For example, some lecturers in Turkey have modified course content to include electronics in subjects such as materials, manufacturing, or ergonomics (Yavuzcan, 2023). Furthermore, previous research revealed high employee demand in industries implementing Industry 4.0, with the most sought-after being mechatronics and electromechanics professionals (78%), data analysts and cybersecurity experts (75%), and production engineering managers who combine managerial and technical knowledge (62%) (Saniuk et al., 2021). This confirms the high industry demand for Electrical Engineering graduates in this era. Previously, there were journals that carried out outreach to increase students' interest in continuing to higher education (Hidayatulloh et al., 2023), outreach to majors at high schools in Palembang to help students make wiser and more focused academic decisions (Aravik et al., 2025), and an introduction to the campus life of high school students in Siak (Murda Niati et al., 2023). Then, there are also several community service journals that specifically discuss Electrical Engineering, namely the socialization of the Electrical Engineering Education Department in Maros Regency (Firdaus et al., 2024), education on alternative renewable energy by the Electrical Engineering Department at Mataram University (Sultan et al., 2024), and the socialization of IoT Technology and monitoring of electrical energy use by the Electrical Engineering Department at Hasanuddin University (Muslimin et al., 2025).

Based on this, Electrical Engineering students of the Universitas Pembangunan Nasional (UPN) Veteran Jakarta held Electro Goes to School (EGOTS) 2025 at State Senior High School (SMAN) 82 Jakarta to provide an overview of Electrical Engineering, especially regarding the three concentrations in Electrical Engineering at UPN Veteran Jakarta, namely Control Electronics, Electrical Power Engineering, and Telecommunications (UPN Veteran Jakarta, n.d.). In addition, there was a demonstration of one of the devices designed by UPN Veteran Jakarta students that can make human work easier. In this case, EGOTS also collaborated with three Student Study Groups (KSM): KSM Internet of Things (IoT), KSM Mechatronics, and KSM Ecovoltech. The purpose of this activity is to inform high school students about the Electrical Engineering Department at UPN Veteran Jakarta and provide knowledge to grades 11 and 12 at SMAN 82 Jakarta. This initiative aims to spark interest and motivation to explore electrical engineering at the college level.

2. METHODS

The location of the 2025 Electro Goes to School (EGOTS) activity was held at the Hall of State Senior High School (SMAN) 82 Jakarta, Kebayoran Baru District, South Jakarta City, Special Region of Jakarta Province (DKJ). The target of this activity was 11th & 12th-grade students of SMAN 82 Jakarta, with a total of approximately 60 people. The delivery of the material was a semi-talk show concept that explained the basic introduction to the Electrical Engineering major, three concentrations of the Electrical Engineering major at UPN Veteran Jakarta, basic courses, job prospects, and technology applications in the field of Electrical Engineering. There was also a Question and Answer (Q&A) session, so that there was a discussion between the presenter and participants. This Q&A activity can also be a means to increase students' self-confidence, train critical thinking skills, and deepen insight into the material presented. In the middle of the event, there was also an ice-breaking session so that participants remained focused and did not get bored. The committee also prepared prizes for the winners of the ice breaker to make participants more enthusiastic. Additionally, presentations were given on the Internet of Things (IoT) Student Study Groups (KSM), Mechatronics KSM, and Ecovoltech KSM as an introduction to the latest areas of expertise and innovation.

The EGOTS 2025 timeline is divided into three phases: the Pre-Event, Event, and Post-Event phases. The Pre-Event phase includes three activities: Brainstorming, which will take place in the second week of August 2025; Committee Formation in the third week of August 2025; and the EGOTS Meeting, which will take place from the third week of August 2025 to the third week of September 2025. The Event phase is the stage where EGOTS will be held on September 26, 2025. Finally, the Post-Event phase, which will evaluate the implementation of EGOTS 2025, will be held on September 28, 2025.

3. FINDINGS AND DISCUSSION

The results obtained from the research have to be supported by sufThis activity was held on Friday, September 26, 2025, in the Hall of State Senior High School (SMAN) 82 Jakarta at 09:30-11:30 Western Indonesian Time (WIB). However, before the event began, there were preparations for the event and also briefings at 08:30-09:30 WIB. After the event was ready, registration (Figure 1) for participant data collection was opened for 20 minutes. And after that, the opening of the event was carried out by the Master of Ceremony (MC). After the opening of the event, the MC invited the Chairperson of the Executive Committee, Anggi Anugrah, and the Deputy Chairperson of the Electrical Engineering Student Association (HMTE) of the Universitas Pembangunan Nasional (UPN) Veteran Jakarta for the 2025/2026 period, Umar Fatahillah, to give remarks with a duration of approximately 3 minutes each. Then, the event continued with a presentation of material regarding the Electrical Engineering department for 20 minutes (Figure 2) and a 5-minute question and answer session (Figure 3). To lighten the mood, the event continued with an icebreaker game of Guess the Song, which included prizes for at least 10 minutes (Figure 4). Following this, there were brief presentations about the Student Study Groups (KSM) from each KSM delegation, lasting approximately 10 minutes.

Figure 1. Registration for Participant Data Collection.

Figure 2. Presentation of Electrical Engineering material at UPN Veteran Jakarta.

Figure 3. Participant Q&A session.

Figure 4. Ice breaking session and prize giving.

The next session included device demonstrations by the three KSMs. KSM Ecovoltech, represented by Asfa Abiyu Hadi and Arya Kusuma Nugraha, demonstrated a device for implementing renewable energy through innovative solar panel technology, utilizing it as a portable power storage device (Figure 5). Then, KSM Internet of Things (IoT), represented by Ilham Surya Rizqullah and Muhamad Nabhan A., demonstrated a smart home device (Figure 6). Finally, KSM Mechatronics, represented by Amilzan Fadlan Radiansyah and M. Elvan Ramdani, demonstrated a robot transporter (Figure 7).

Figure 5. Presentation and Demonstration of Devices from KSM Ecovoltech.

Figure 6. Presentation and Demonstration of Devices from KSM IoT.

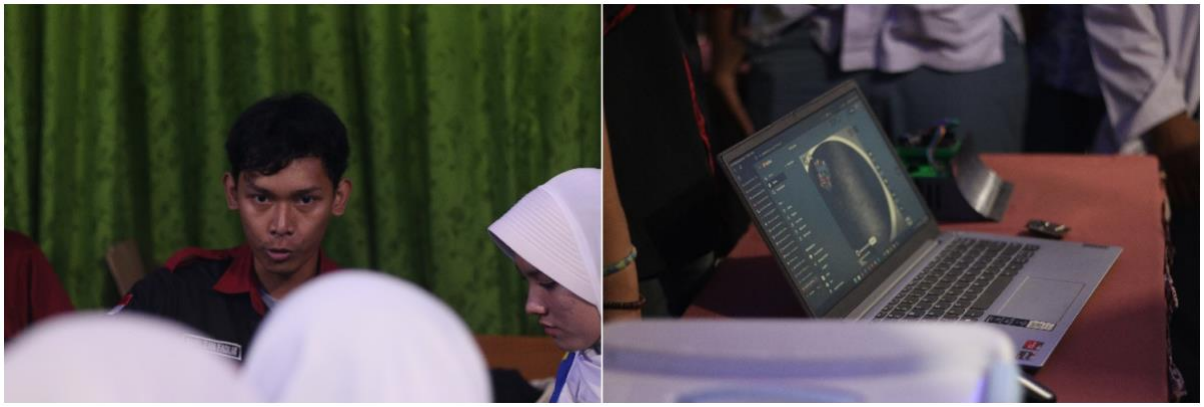

Figure 7. Presentation and Demonstration of Devices from KSM Mechatronics.

To evaluate the results of the EGOTS 2025, a Google Form survey was conducted to collect testimonials and feedback from participants. The displayed results summarize responses from 65 survey participants to questions with answer options, showing the number and percentage for each response. In Figure 8(a), 13 (20%) participants have long known about the UPN Veteran Jakarta Electrical Engineering Department, while 43 (66%) participants have only heard of it, and 9 (14%) do not know it. Similarly, Figure 8(b) shows that 45 (69%) participants do not know whether any of their high school graduates are enrolled in the UPN Veteran Jakarta Electrical Engineering Department, indicating a potential need for increased outreach. Figure 8(c) shows that 57 (88%) participants correctly

answered the number of concentrations or specializations in the department, which suggests that the material was delivered effectively. Figure 8(d) indicates that 4 (6%) participants reported interest in UPN Veteran Jakarta's Electrical Engineering, while 34 (52%) are still considering it. Therefore, further evaluation of the materials may be warranted to support increased participant interest.

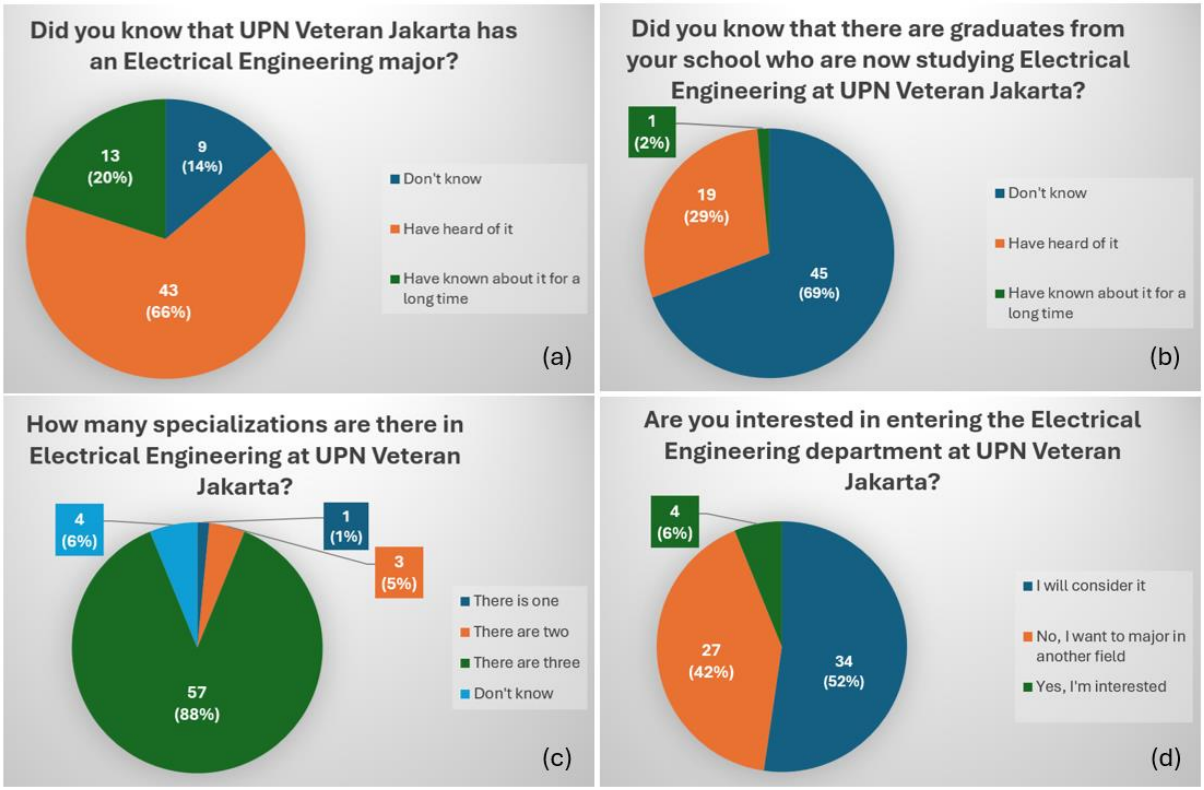

Figure 8. Survey results from participants regarding: (a) Their knowledge, (b) Knowledge of their high school graduates, (c) Number of specializations, and (d) Interest in Electrical Engineering at UPN Veteran Jakarta.

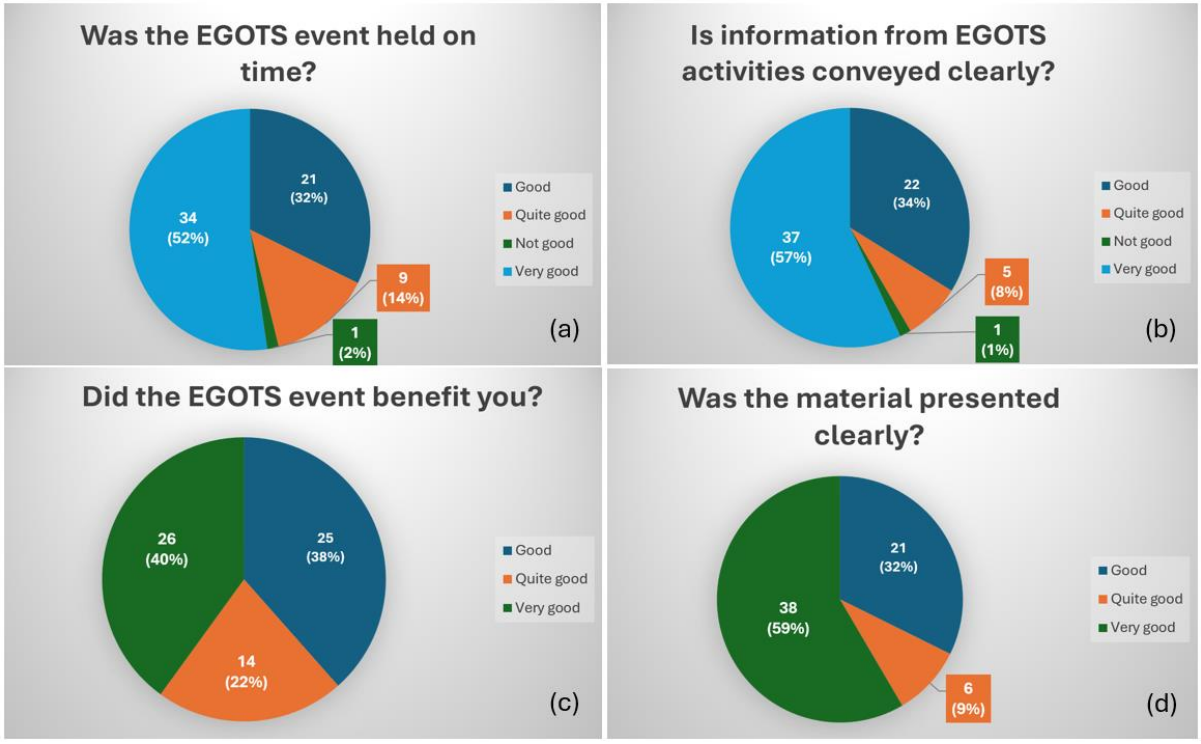

Figure 9. Results of participant surveys regarding: (a) Punctuality, (b) Delivery of information, (c) Benefits, and (d) Material Clarity of EGOTS 2025.

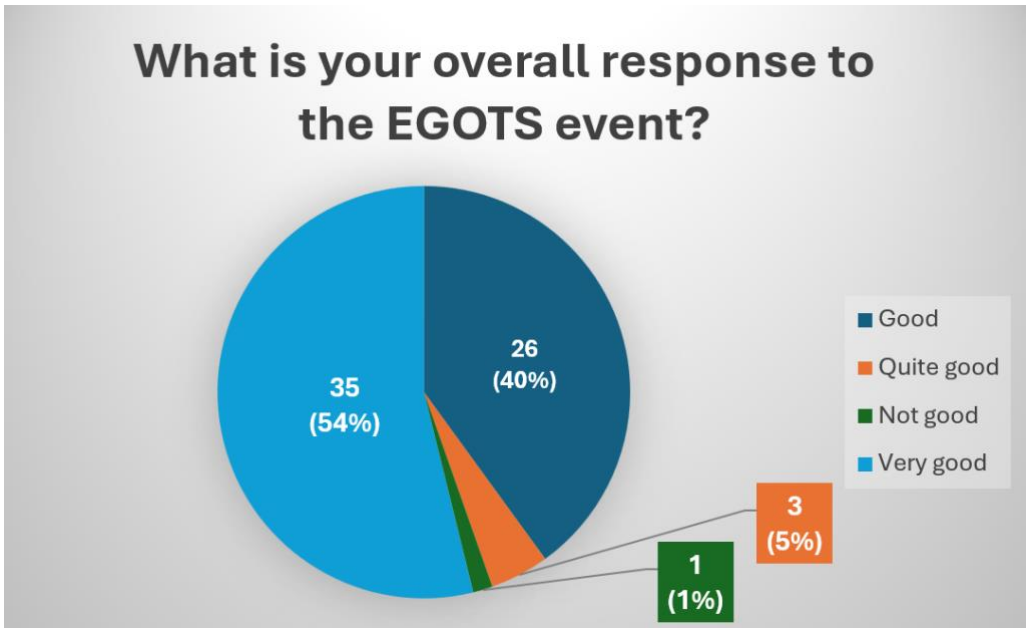

Figure 10. Results of participant survey regarding overall assessment of the EGOTS 2025 event.

Following the fulfillment of the survey, a plaque was presented to the school (Figure 11). The final agenda item was a documentation session with a group photo of all participants and committee members (Figure 12).

Figure 11. Presentation of Plaque to the Principal of SMAN 82 Jakarta.

Figure 12. Joint Documentation Session with The Committee and Participants.

4. CONCLUSION

The Electro Goes to School (EGOTS) 2025 activity has been implemented, which introduced the Electrical Engineering major, specifically at the Faculty of Engineering, Universitas Pembangunan Nasional (UPN) Veteran Jakarta, to students of State Senior High School (SMAN) 82 Jakarta. The students looked very enthusiastic, especially during the device demonstration session. Each participant had the opportunity to simulate the devices directly by visiting three Student Study Group (KSM)

booths that had been provided. Their curiosity was very high, starting from asking about how it works, the components involved, to asking about various responses that might occur when the project faces a condition. The overall survey results of the EGOTS event showed positive feedback with a score of very good by 35 (54%) participants, good by 26 (40%) participants, quite good by 3 (5%) participants, and not good by 1 (1%) participant. The EGOTS 2025 activity is expected to provide benefits and also new insights into the field of Electrical Engineering, as well as build the interest and motivation of SMAN 82 Jakarta students to explore this field more deeply at the college level.

Acknowledgments: We would like to express our gratitude to the Universitas Pembangunan Nasional (UPN) Veteran Jakarta for supporting this activity. We also extend our gratitude to the committee of the Electrical Engineering Student Association (HMTE) of UPN Veteran Jakarta for their excellent implementation.

REFERENCES

Aravik, H., Marnisah, L., Frastuti, M., Nur Imamah, F., & Nubila, H. (2025). Sosialisasi Pemilihan Jurusan Kuliah Pada Sekolah SMA di Kota Palembang. AKM: Aksi Kepada Masyarakat, 6(1), 221–228.

Firdaus, Muh. Yusuf Mappeasse, Elfira Makmur, Sari, D. A., & Hilda Ashari. (2024). Sosialisasi Perguruan Tinggi berdasarkan Bakat dan Minat Calon Mahasiswa Se-Kabupaten Maros. TEKIBA : Jurnal Teknologi Dan Pengabdian Masyarakat, 4(1), 39–43. https://doi.org/10.36526/tekiba.v4i1.3734

Hidayatulloh, A., Arry Pratama, I., & Zaidah, A. (2023). SOSIALISASI DALAM RANGKA MENINGKATKAN MINAT SISWA KELAS XII UNTUK MELANJUTKAN KE PERGURUAN TINGGI. EJOIN: Jurnal Pengabdian Masyarakat, 1(6), 517–520.

Murda Niati, S., Supraptiah, E., Hajar, I., Cahya, G., & Inayatullah, A. (2023). Pengabdian Masyarakat Pengenalan Dunia Kampus Kepada Siswa/Siswi SMA Saind Tahfizh Islamic Center Siak. Jurnal Pengabdian Masyarakat, 2(3), 2023.

Muslimin, Z., Ahmad, A., Sari Areni, I., Chaerah Gunadin, I., Ejah Umraeni Salam, A., Anshar, M., Mayasari, F., & Dani Achmad, A. (2025). Sosialisasi Pemanfaatan Teknologi IoT dalam Monitoring Penggunaan Energi Listrik pada Siswa SMKN 10 Makassar. 8(2).

Quipper. (n.d.). Teknik Elektro. PT Quipper Edukasi Indonesia. Retrieved November 2, 2025, from https://campus.quipper.com/majors/id-teknik-elektro

Saniuk, S., Caganova, D., & Saniuk, A. (2021). Knowledge and Skills of Industrial Employees and Managerial Staff for the Industry 4.0 Implementation. 28, 220–230. https://doi.org/10.1007/s11036-021-01788-4/Published

Sultan, S., Muljono, A. B., Nrartha, I. M. A., Ginarsa, I. M., Sasongko, S. M. Al, Hadi A, Muh. S., & Yadnya, M. S. (2024). Program Edukasi Energi Terbarukan Sebagai Alternatif Teknologi Ramah Lingkungan di MTS Negeri 1 Mataram. Jurnal Gema Ngabdi, 6(1), 28–32. https://doi.org/10.29303/jgn.v6i1.392

UPN Veteran Jakarta. (n.d.). Tentang Program Studi Teknik Elektro. Fakultas Teknik UPN Veteran Jakarta. Retrieved November 3, 2025, from https://ft.upnvj.ac.id/id-program-studi-s1-teknik-elektro-html/

Yavuzcan, H. G. (2023). How Electronics Knowledge Relates to Industrial Design Education. 28(1), 8–33.