AI Analytic Engine for Providing Tailor-made Trainings Targeting SEN Students

AI analytic engine capable of recommending individualised educational plan (IEP) for SEN students to tailor their learning needs.

Keywords:
- SEN, e-learning, training, Individualised Educational Plan (IEP), digital health, Applied Behavioral Analysis (ABA), therapy
- Smart people, Artificial Intelligence (AI), data analytics, Internet-of-Things (IoT), physiological data, environmental data

Problems addressed

- The number of SEN students is increasing to over 56,000 in public mainstream schools in 2020 – 21
- There are insufficient teaching resources for SEN students such as shortage of therapists and limited space of classrooms
- One-on-one intensive training is an effective therapy approach but is too expensive and unaffordable for most families

ASTRI has developed a revolutionary and cost-effective distance-learning system which allows parents and teachers to conduct SEN related training anytime, anywhere. With the assistance of the programme recommendation engine, the system can also help educational psychologists to speed up the assessment process and create a more efficient Individualised Educational Plan (IEP) for SEN students.
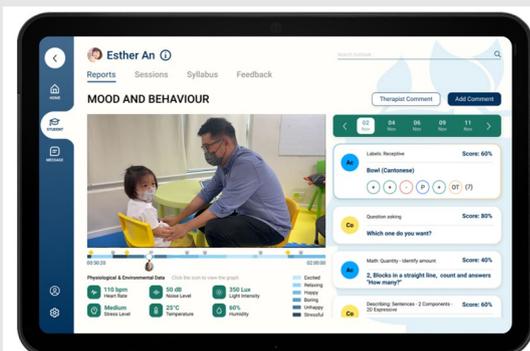
Innovations

By combining Artificial Intelligence and Internet-of-Things (AIoT), the solution can assist therapists to develop the IEP for SEN students based on the historical learning data and multimodal data collected during the lessons. The highlights of innovations are as follows:

- **Programme recommendation engine** that can speed up the assessment of student performance and suggest an updated IEP for students to improve the learning effectiveness
- **Multimodal data capturing system** that can collect the videos of learning activities, physiological data of students and environmental data of classrooms during the lessons for data analysis and evaluation
- **Distance-learning system** that allows parents or therapists to conduct training anytime and anywhere
- **Mobile training app** that can enable the trainers to conduct training on a mobile phone or tablet and submit the learning data on-the-fly for performance evaluation
- **Applied Behavioral Analysis (ABA)** therapy method, which is evidence-based, data centric and individualised, was supported by the system

Key impact

- Affordable and accessible ABA therapy tailored for each SEN student
- Quality and consistent learning experience across different parents and teachers
- Improve the effectiveness and efficiency of SEN training process

Innovation snapshot

Project completed
- Ongoing

Applications
- SEN training & therapy
- Kindergarten education
- Primary education
- Rehabilitation therapy for children

Patent(s)

- N/A

ASTRI Patent Search

Commercialisation opportunities
- IP licensing
- Technology co-development

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