

MELAKA
INTERNATIONAL
INTELLECTUAL EXPOSITION

MIIEX'24

12 JUNE '24

Dewan Taming Sari,
Universiti Teknologi MARA Caw. Melaka,
Kampus Alor Gajah, Melaka

*"Empowerment of Special
Needs through Invention
& Innovation"*

**EXTENDED
ABSTRACT**

MiiEX'2024

MELAKA INTERNATIONAL INTELLECTUAL EXPOSITION 2024

**“EMPOWERMENT OF SPECIAL NEEDS THROUGH INVENTION AND
INNOVATION”**

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UiTM Cawangan Melaka

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78000 Alor Gajah

Melaka Bandaraya Bersejarah

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MiiEX'2024

MELAKA INTERNATIONAL INTELLECTUAL EXPOSITION 2024

“EMPOWEREMENT OF SPECIAL NEEDS THROUGH INVENTION AND
INNOVATION”

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FOREWORD BY THE RECTOR OF UiTM CAWANGAN MELAKA



Professor Ts. Dr. Mohd Rasdi bin Zaidi

Rector, Universiti Teknologi MARA (UiTM)

Cawangan Melaka

Welcome to the Melaka International Intellectual Exposition 2024 (MIIEX '24). It is an honour for me, on behalf of UiTM Cawangan Melaka, to thank all of you for joining MIIEX '24. We are proud to inform you that this is the 13th consecutive year that UiTM Cawangan Melaka is organizing this exposition. Since 2009, UiTM Cawangan Melaka has successfully hosted this innovation exposition. Not only have we succeeded in organizing the exposition, but we have also successfully embarked on commercialized products.

2024 is a special year where MIIEX 2024 emphasizes the development of special needs. As we know, special needs indicate a limitation in a person's ability to engage in and benefit from various aspects, such as daily activities and education. Hence, with the theme "Empowering Special Needs Through Invention and Innovation," it is a platform for industries, professionals, academicians, students, and communities to share their innovative ideas and products to increase accessibility for those with special needs.

The successful implementation of MIIEX '24 is our joint success. This event was supported by the Melaka state government through YB Datuk Fairul Nizam bin Roslan, the EXCO of Science, Technology, Innovation, and Digital Communication. I also want to express my

gratitude to Universitas Negeri Padang, Indonesia, Universitas Muhammadiyah, Makassar, Indonesia, the International Association of Economic and Businesses (IAEB), Universiti Sains Islam Malaysia, Ibnu Umami Maktum Research Center (UMMI), USIM, and The Southeast Asia Minister of Education Organization Regional Centre for Special Educational Needs (SEAMEO SEN) as our co-collaborators for MIIEX 2024.

The collaboration from various parties in MIIEX '24 is a platform that will improve cooperation and interweaving among industries, professionals, academicians, students, and communities in shaping their potential in developing innovation products. This exposition also serves as a platform to cultivate and uphold the nation's innovation culture by presenting new ideas and research by young people, especially from academia and universities. Indirectly, MIIEX '24 will encourage all inventors towards empowering Science, Technology, Engineering, and Mathematics (STEM), especially in primary and secondary schools.

The new digital landscape also inspires more innovation and new ideas that contribute to various activities, such as business and industries. As a university that encourages "Research and Innovation," we aim to foster more innovative products that benefit scholars, industries, and communities, addressing issues to improve our present and future life.

This exposition would never happen without dedication, teamwork, and commitment. A round of applause should be given to the committee teams, who are the backbone of this exposition. Their hard work, effort, and time made this exposition possible.

Finally, I would like to conclude this brief remark by thanking all the participants and stakeholders for joining the exposition. We hope that this collaboration never ends here.

Thank you.

FOREWORD BY THE DEPUTY RECTOR (RESEARCH & INDUSTRIAL LINKAGES)



Associate Professor. Dr. Nur Hayati binti Abd Rahman

Deputy Rector (Research & Industrial Linkages), Universiti Teknologi MARA (UiTM) Cawangan Melaka

With much passion and privilege, let me warmly welcome all of you to the Melaka International Innovation Exhibition (MIIEX), UiTM Cawangan Melaka's flagship event. I firmly believe that events such as these demonstrate the gradual evolution of this platform in terms of its significance and its governing principles within the sphere of learning and the broader scholarly society.

The theme for this year, "Empowering Special Needs Through Invention and Innovation," strongly connects to our mission of using research and technology to make a positive impact on the world we live in. Besides enforcing the message of diversity, this theme also reaffirms our focus on creating products to improve the lives of people with disabilities (PWDs). Such innovations are vital as only through focused constructive changes can society become more sensitive to the needs of all members.

MIIEX allows researchers, students, and industry professionals to come together, share their innovative research, and develop viable research partnerships. It has been great to see the enthusiasm of the participants and the efforts they put into their projects, which can offer various social and economic benefits. This is why one can state that MIIEX is a great

opportunity for creating connections between the academic environment and industry, facilitating the implementation of innovative and promising projects.

Finally, I would like to express my sincere appreciation to all the members and supporters of the organizing committee, all the participants, sponsors, and everyone involved in preparing this event. I want to express my gratitude for your commitment and involvement, as the success of MIIEX and the development of an active culture of innovation in our university and beyond is partly owed to your support.

Thank you

FOREWORD BY THE PROJECT DIRECTOR



Dr Zulkefli bin Muhamad Hanapiyah

Senior Lecturer

Assalamualaikum and Warmest Greetings,

It gives me a great pleasure, on behalf of the organizing committee, to welcome all participants and speakers to the Melaka International Intellectual Exposition 2024 (MIIEX '24) with the theme "Empowering Special Needs Through Invention and Innovation." We are honoured and pleased to welcome all participants to this biennial event.

MIIEX '24 is a platform that gathers experts from local and international industries, academia, scientists, researchers, and the community to contribute to the advancement of scientific and technological knowledge. This knowledge helps develop disruptive innovation products that improve daily activities for businesses and the community, especially those with special needs.

MIIEX '24 provides an atmosphere for inventors of all levels to gain new exposure and collaborate. Indirectly, this promotes a collaborative and innovative culture that focuses on cutting-edge technologies and new standards in technology and creativity.

MIIEX '24 is anticipated to serve as an arena for participants to acquire and disseminate revolutionary information on ideas and innovation. It is intended that the competition will expose the contestants' minds to the latest technologies and designs, aligning with the government's goal of encouraging innovation in Malaysia.

Finally, I want to compliment my fellow committee members on their amazing efforts, which were vital to the event's success. In addition, I want to thank our co-organizers, event sponsors, and participants. Optimistically, we hope that all new knowledge discovered, invented, or innovated will lead us toward future sustainability.

Thank you.

**FOREWORD BY MELAKA STATE EXCO OF SCIENCE, TECHNOLOGY,
INNOVATION AND DIGITAL COMMUNICATIONS**



YB Datuk Fairul Nizam bin Roslan

Melaka State Exco of Science, Technology, Innovation and Digital Communications

Welcome to the Melaka International Intellectual Exposition 2024 (MIIEX '24). It is an honor for me, on behalf of UiTM Cawangan Melaka, to thank all of you for joining MIIEX '24. We are proud to inform you that this is the 13th consecutive year that UiTM Cawangan Melaka is organizing this exposition. Since 2009, UiTM Cawangan Melaka has successfully hosted this innovation exposition. Not only have we succeeded in organizing the exposition, but we have also successfully embarked on commercialized products.

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Thank you.

MIIEX'24 ORGANISING COMMITTEE

COMMITTEE	NAME
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	DR NORASHIKIN ADAM
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	AFZAN SAHILLA BINTI MOHD AMIR HAMZAH
	MUHAMMAD FURQAN BIN AZHAR
	KHAIRUL AZHAR BIN LOCHMAN

ABOUT MIIEX'24

MIIEX'24 is an innovation competition annually organised by UiTM Melaka with the intention to bring together ideas and inspiration that could fit in for commercialization needs.

This event creates a platform for researchers to establish networking, partnership and opportunities to collaborate with industries.

OBJECTIVES

1. Encourage and instil passion towards inventing and innovating among UiTM Cawangan Melaka staff, students and academicians of local and international higher education institutions;
2. Highlight distinguished talents of skilful inventors and exhibit intellectual products, inventions and innovations among local and private tertiary institutions, government and private agencies, including international participants;
3. Become an effective Business Matching platform for participating research products, matching industries and partnering government agencies;
4. Recognise, inspire and promote invention and innovation products to be patented and commercialized;
5. Increase passion towards inventing and innovating through research and boost interests of government and non-government agencies to obtain consultancy services from a line up experts of higher education institutions and UiTM Cawangan Melaka.

THEME

'EMPOWERMENT OF SPECIAL NEEDS THROUGH INVENTION AND INNOVATION'

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KindleLIT: Advancing Dyslexia Accessibility on Amazon Kindle

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Abstract

The innovative KindleLIT programme aims to improve dyslexic people's ability to use Amazon Kindle e-readers. Dyslexic readers find it difficult to understand and enjoy traditional reading materials since they are not always adaptable. The dyslexia-friendly features that KindleLIT has developed, such as text-to-speech capabilities, specialised typefaces, and customisable formatting options, fill this need. By utilising creative design and user input, KindleLIT seeks to enable dyslexic readers to interact with digital literature more comfortably, promoting literacy abilities and academic achievement. KindleLIT provides an all-inclusive solution to promote dyslexia accessibility globally, with the possibility of commercialization through partnerships with e-reader manufacturers and educational institutions.

Keywords: KindleLIT, Dyslexia, Accessibility, Amazon Kindle, E-readers

INTRODUCTION

The "KindleLIT: Advancing Dyslexia Accessibility on Amazon Kindle" initiative introduces the significance of addressing dyslexia accessibility on e-reader platforms, including the Amazon Kindle, given the substantial impact that dyslexia have on people's reading experiences. The project intends to create and deploy dyslexia-friendly features to increase accessibility and usability, highlighting the current obstacles experienced by dyslexic readers in accessing digital literature. With the ultimate goal of promoting reading skills and academic performance, KindleLIT aims to enable dyslexic people to interact more confidently with digital texts by utilising technology and teamwork.

OBJECTIVE

The objectives of "KindleLIT: Advancing Dyslexia Accessibility on Amazon Kindle" are to develop dyslexia-friendly features for the Amazon Kindle, including specialized fonts, customizable formatting options, and text-to-speech functionality, aimed at enhancing accessibility for dyslexic readers. Next, to conduct user feedback sessions to gather input from dyslexic readers and refine these features based on their preferences and usability.

NOVELTY & INVENTIVENESS

KindleLIT distinguishes itself by focusing specifically on advancing dyslexia accessibility within the context of a widely used e-reader platform. By combining innovative design elements with evidence-based strategies for dyslexia support, KindleLIT offers a comprehensive solution tailored to the unique needs of dyslexic readers.

PRACTICALITY & USEFULNESS

The implementation of dyslexia-friendly features on the Amazon Kindle through KindleLIT has the potential to significantly improve the reading experience for individuals with dyslexia. By enhancing accessibility and usability, KindleLIT empowers dyslexic readers to engage more confidently with digital literature, fostering literacy skills, academic success, and a lifelong love of reading.

CONCLUSION

KindleLIT represents a significant step forward in improving accessibility for dyslexic individuals on e-reader platforms, such as the Amazon Kindle. By implementing dyslexia-friendly features and prioritizing user feedback, KindleLIT enhances the reading experience for dyslexic readers, fostering literacy skills and academic success. Moving forward, the continued development and adoption of initiatives like KindleLIT are essential for promoting inclusivity and ensuring that individuals with dyslexia can fully participate in the digital reading landscape.

REFERENCES

- BAO, S., KUBOKI, R., IJIMA, R., MINAGAWA, H., YAMANAKA, K., & MIZUHIKI, T. (2019). Printed Book or E-book, Which is Better? An Investigation using Manga and Magazine. *International Journal of Affective Engineering*, 18(1), 9–16. <https://doi.org/10.5057/ijae.ijae-d-17-00038>
- Cavalli, E., Colé, P., Brèthes, H., Lefevre, E., Lascombe, S., & Velay, J. L. (2019). E-book reading hinders aspects of long-text comprehension for adults with dyslexia. *Annals of Dyslexia*, 69(2), 243–259. <https://doi.org/10.1007/s11881-019-00182-w>
- Draxler, F., Rakytianska, V., & Schmidt, A. (2022). Maintaining Reading Flow in E-Readers with Interactive Grammar Augmentations for Language Learning. *ACM International Conference Proceeding Series*, 53–61. <https://doi.org/10.1145/3568444.3568459>
- Grusky, M., Taft, J., Naaman, M., & Azenkot, S. (2020). *Measuring and Understanding Online Reading Behaviors of People with Dyslexia*. <https://doi.org/10.1145/3313831.XXXXXXX>
- Mastropavlou, M., Zakopoulou, V., Christou, T., Nerantzini, M., & Lekakou, M. (2020). The Design of New Digital Resources of Personalized Support of Reading Skills for Novice Readers and Children with Dyslexia: A Presentation of the iRead Software Linguistic Domain Models: New Digital Resources of Personalized Reading Support. *ACM International Conference Proceeding Series*, 241–245. <https://doi.org/10.1145/3439231.3439279>
- Zikl, P., Bartošová, I. K., Víšková, K. J., Havlíčková, K., Kučírková, A., Navrátilová, J., & Zetková, B. (2015). The Possibilities of ICT Use for Compensation of Difficulties with Reading in Pupils with Dyslexia. *Procedia - Social and Behavioral Sciences*, 176, 915–922. <https://doi.org/10.1016/j.sbspro.2015.01.558>