UNIVERSITI TEKNOLOGI MARA

PIONEERING EDUCATIONAL PERSPECTIVES

Series 2025

THE World University Rankings 2023 TOP 1501+
TOP 128 UI GreenMetric
MDEC Premier Digital Tech Institution
THE IMPACT RANKINGS 2022 TOP 101-200
MyRA

PIONEERING EDUCATIONAL PERSPECTIVES

Series 2025

Chief Editors:
Nur Alyani binti Khairol Anuar
Muhammad Irfan bin Mokhtar

Editors:
Aqeela binti Ahmad Kamiri
Hawa Syamsina binti Md Supie
Nurul Nadiah binti Rasdi
Qistina Azra binti Mohani
Siti Aishah binti Taib
Nurul Hijah binti Jasman
Siti Mariam binti Mohammad Iliyas

Published by:
Academy of Language Studies, Universiti Teknologi MARA
Cawangan Johor, Kampus Pasir Gudang, Jalan Purnama,
Bandar Seri Alam, 81750 Masai, Johor Darul Ta'zim.
07-3818455
edgii.apbpg@gmail.com

Copyright © Pioneering Educational Perspectives: Series 2025

All rights reserved. No part of this publication may be reproduced in any form or by electronic or mechanical means, including information storage and retrieval systems, or transmitted in any form or by any means, without the prior permission in writing from the publisher.

e-ISBN : 978-967-0033-31-0

Published date: 2025

Chief Editors:
Nur Alyani binti Khairol Anuar
Muhammad Irfan bin Mokhtar

Editors:
Aqeela binti Ahmad Kamiri
Hawa Syamsina binti Md Supie
Nurul Nadiah binti Rasdi
Qistina Azra binti Mohani
Siti Aishah binti Taib
Nurul Hijah binti Jasman
Siti Mariam binti Mohammad Iliyas

Published by:
Academy of Language Studies, Universiti Teknologi MARA Cawangan Johor, Kampus Pasir Gudang, Jalan Purnama, Bandar Seri Alam, 81750 Masai, Johor Darul Ta'zim.
07-3818455
edgii.apbpg@gmail.com

Preface

Pioneering Educational Perspectives: Series 2025 is a collection of thought-provoking insights and research contributions exploring contemporary educational trends and practices. This eBook presents a diverse range of perspectives on innovative teaching methodologies, digital learning strategies, and transformative approaches in education. Designed to serve as a resource for educators, researchers, and practitioners, it aims to inspire meaningful discussions and advancements in the field. Through carefully curated chapters, this publication offers fresh ideas and practical solutions to enhance learning experiences in an ever-evolving educational landscape.

e-ISBN: 978-967-0033-31-0

OPTIMIZING CONTENT DELIVERY FOR TEACHING AND LEARNING IN SCIENCE YEAR 5 USING A VIRTUAL REALITY ENVIRONMENT WITH COSPACES EDU 108

Muhammad Asyraf Abdullah Zawawi 108

ENHANCING PHARMACEUTIC EDUCATION WITH DIGITAL TOOLS: LEARNING ABOUT EXCIPIENTS IN MARKETED PRODUCTS THROUGH INFOGRAPHICS 112

Nurul Alyaa binti Ibrahim[1,*], Mohd Nadzri Mohd Najib[2] & Wong Yuet Yen[3] 112

IDENTIFYING STUDENT AT-RISK VIA BEHAVIORAL RECOGNITION AND LEARNING ANALYTICS DASHBOARD 116

Chai Waii Yuan[1], Chong Mien May[2] & Hairul Aysa binti Abdul Halim Sithiq[3] 116

Lenz DiSCo 120

Noreha Binti Midin[1]*, Norfazlina Binti Mohd Rahim[2], Rizaudin Bin Abd Rashid[3] & Najihah Binti Bakri[4] 120

TIKTOKONOMICS – HARNESSING THE POWER OF SOCIAL MEDIA TO TEACH ECONOMICS ECONOMICS FOR BUSINESS DECISION (ECO745) 123

Azlina Hanif[1,*]& Arlinah Abd Rashid[2] 123

ENGAGING LEARNING: AN INTERACTIVE GUIDE FOR CROP SCIENCE 127

Siti Nurul Atikah Abu Samah[1], Wan Natasya Wan Ahmed[2,*], Hamizah Othman[3] & Muhammad Afiq Haikal Yusoff Raimi[4] 127

KIT PEMBELAJARAN INTERAKTIF MBPK KSSM T1 SUBJEK PENGURUSAN DIRI: YOUR COLOURS YOUR LIMIT 130

Sandi Anak Danel[1]*, Pang Lee Ying[2], Shirley Anyie[3], Geraldine Lasak Ding[4], & Vestly Kong Liang Soon[5] 130

IMMERSIVE IOT LEARNING WITH AR-MICROC: A NEW EDUCATIONAL PARADIGM 134

Farah Waheda Othman[1]*, Irdayanti Mat Nashir [2], Mohamad Syahril Mat Saad[3], Ramlee Mustapha[4] & Mohamed Nor Azhari Azman[5] 134

3M-VM: REVOLUTIONIZING ESL SKILLS THROUGH AI IN PROJECT- BASED LEARNING 138

Nurul Ajleaa binti Abdul Rahman[1]* & Nur Ain Nasuha binti Nasran[2] 138

THEORY-BASED LEARNING DALAM PENDIDIKAN ERA 4.0: PENGHASILAN PRODUK INOVASI MELALUI KURSUS TEORI SENI DENGAN BANTUAN PLATFOM KREATIF AI SEBAGAI KAEDAH PEMBELAJARAN MASAKINI 142

Dr. Mohd Iqbal Badaruddin[1,*], Muhammad Luqman Ibnul Hakim Mohd Saad[2], Dr. Farid Abdullah[3], Hartini Mohd Razali[4] & Mazni Omar[5] 142

AI2P: ARTIFICIAL INTELLIGENCE TOOLS AND PAIR PROGRAMMING TO ENHANCE STUDENTS SELF-EFFICACY AND CONFIDENCE TO LEARN PYTHON PROGRAMMING 148

Ts. Syahrul Affendi Bin Abdul Rahman[1,*] 148

ASSESSMENT MARKS MADE EASY: THE EXCEL VBA SOLUTION 152

Mohamad Irwan P. Harahap[1,*] & Rohimah Khoiriyah Harahap[2] 152

DIGITAL TRANSFORMATION OF MALAYSIAN SIGN LANGUAGE EDUCATION 156

Mat Redhuan Samsudin[1,*], Noorlida Daud[2] & Rushana Sulaiman @ Abd Rahim[3] 156

e-ISBN: 978-967-0033-31-0

ENGAGING LEARNING: AN INTERACTIVE GUIDE FOR CROP SCIENCE

Siti Nurul Atikah Abu Samah[1], Wan Natasya Wan Ahmed[2*], Hamizah Othman[3] & Muhammad Afiq Haikal Yusoff Raimi[4]

[1,2,3,4] *Faculty of Plantation and Agrotechnology, Universiti Teknologi MARA (UiTM) Malacca, Jasin Campus, 77300 Merlimau, Malacca, Malaysia*

**Corresponding author: natasyaahmed@uitm.edu.my*

ABSTRACT

Learning courses that are mostly consisted of facts can be quite challenging for students to understand. The course includes AGR499 Crop Science. This course consisted of eight chapters which full of facts and theories that some students questioned on how to memorize or learn it easier. Therefore, there is a need to create an easier learning method for students which ended in the creation of this guidebook. The guidebook is intended for students to learn in a more interactive and engaging surrounding which makes them understand the content better. The content of the guidebook is made into infographics highlighting important points from the original notes. Its design focuses on colours and creativity to deviate students' stereotype from it being a difficult course. Other than that, the guidebook is made accessible that can enable students to revise and study wherever they are, either it is offline or online. The addition of fun and engaging quizzes, videos and games can further pique the interest of students. In which this can make learning experience more engaging and impactful. In the end, it will help students in scoring the course itself.

KEYWORDS: Crop Science, Engaging, Guidebook, Interactive.

PROBLEM AND OBJECTIVE

AGR499 Crop Science is a compulsory course taken by semester two students of Bachelor in Plantation Management Technology with Honours. The course contents focus on the principles of physiology and plant development that will influence yield performance of cultivated crops (Universiti Teknologi Mara, 2024). Basically, it consisted of scientific facts and theories. The problem that the course faces is the difficulty in fostering students understanding thus, making it hard for them to memorize. As a result, this course recorded high failure rates. Therefore, through the adaptation of digital tools in teaching and learning, a guidebook in a form of flipbook is created. The objectives of the guidebook are to make learning more interactive and fun, to provide a simpler and highlights important notes in an infographic and lastly to make learning engaging through quizzes and videos.

DESIGN DESCRIPTION

This flipbook is designed by creating a dynamic, engaging and user-friendly digital learning platform. Each chapter has interactive modules and multimedia contents by incorporating videos, quizzes and puzzles to make content digestible and engaging while assessing users understanding in each chapter. The purpose of this flipbook is to simplify complex crop science concepts in AGR499 while enhancing practical learning. It aims to bridge the gap between theoretical knowledge and real-world application in agricultural practices. Moreover, it is tailored for students, educators, agricultural professionals, farmers and agronomists, providing

e-ISBN: 978-967-0033-31-0

an immersive learning experience that integrates multimedia content and interactive tools. The design's ability to integrate interactive technology with crop science education is a key differentiator. Unlike traditional textbooks or static lecture notes, this platform allows users to "experiment" in a virtual space, making learning active and hands-on. The development of this flipbook aligns with the pedagogical approaches that emphasizes active learning, visual literacy, and inquiry-based learning (Jailani, et. al., 2024).

VISUALS

To enhance user comprehension, this flipbook incorporates visually-rich content including infographics, diagrams, graphs, charts and videos. These vivid diagrams provide a tangible representation of abstract science concepts (Shaidullina, et. Al., 2023). The use of vibrant colours and a high-resolution diagram that explains plant morphology, anatomy and nutrient cycles facilitates seamless comprehension from the beginning of the chapter to the end. Clear and interesting videos and educational websites linked to the flipbook helps to reinforce understanding and grasp practical skills. Figure 1 below shows some of the visuals in this interactive flipbook.



Figure 1 Summary content of the flipbook

NOVELTY AND UNIQUENESS

This flipbook is different from any existing crop science education tools in its innovative combination of experiential learning. Instead of passively reading mundane lecture notes and textbooks, users are able to actively engage with the contents in each chapter, manipulating variables and seeing instant results. The colourful notes and step-by-step explanations on any difficult topics not only make the learning process more engaging, but also mimics real-world agricultural challenges. This innovative educational tool combines cutting-edge technology with interactive learning. It offers a unique, hands-on approach to mastering crop science,

e-ISBN: 978-967-0033-31-0

empowering students and professionals alike to apply their knowledge in practical, meaningful ways. Since this flipbook is in electronic format, it can be opened and used by learners at any place and at any time (Orance & Manalo, 2021).

BENEFITS TO MANKIND

This flipbook provides an intuitive and visual learning experience. In educational settings, flipbooks can help simplify complex concepts by making them interactive with step-by-step visualizations. They can make learning more engaging, enjoyable, and accessible, particularly for visual learners. Flipbook is designed to be used online; therefore, it is portable and convenient for people to access digital learning resources and eliminates the need for printed materials; thus, lowering paper use. However, where there is poor internet connection, the material can be accessed offline in PDF format. The process of creating or interacting with flipbooks encourages creativity; thus, enhances focus, memory, and cognitive development through active engagement.

COMMERCIAL POTENTIAL

The AGR499 flipbook has great market potential in education, as it is ideal for e-learning in this new era, and it offers significant potential in various industries due to its interactive, multimedia-rich format and flexibility. It is globally accessible, simple to update, and eco-friendly, in contrast to physical books. Their competitive advantage is derived from their interactive, eco-friendly nature, and they are readily scalable through online platforms. They provide a sustainable, cost-effective digital solution by utilizing flexible business models such as subscriptions and possibility of custom services, as well as minimal production costs.

CONCLUSION

In conclusion, AGR499 Crop Science flipbook was designed to solve the issue of learning a fact-based course that many students struggled to memorise and comprehend. This interactive guidebook explains complex concepts with infographics, quizzes, and games to make learning more interesting and enjoyable. It provides a more effective learning technique by combining visually rich material, bright design, and the use of digital resources. The flipbook is environmentally friendly, scalable, and available both online and offline, offering significant commercial potential in education.

REFERENCES

Jailani, N. A., Azmi, I. A., Rahman, N. Z. A. A., Samah, S. N. A. A. and Yusuf, N. A. (2024). *The Art of DNA Extraction*. E-proceedings for International Teaching Aid Competition 2024. 258-264.

Oronce, J. P. & Manalo, D. A. O. (2021). *Development and validation of flipbook in earth and life science*. IOER International Multidisciplinary Research Journal, 3(1), 111-117.

Shaidullina, A. R., Orekhovskaya, N. A., Panov, E. G., Svintsova, M. N., Petyukova, O. N., Zhuykova, N. S., and Grigoryeva, E. V. (2023). *Learning styles in science education at university level: a systemic review*. EURASIA Journal of Mathematics, Science and Technology Education, 19(7), 1-10.

Universiti Teknologi Mara. (2024). *AGR499 Crop Science Course Info*. https://aims.uitm.edu.my/index.cfm/page/module/moduleId/186018.