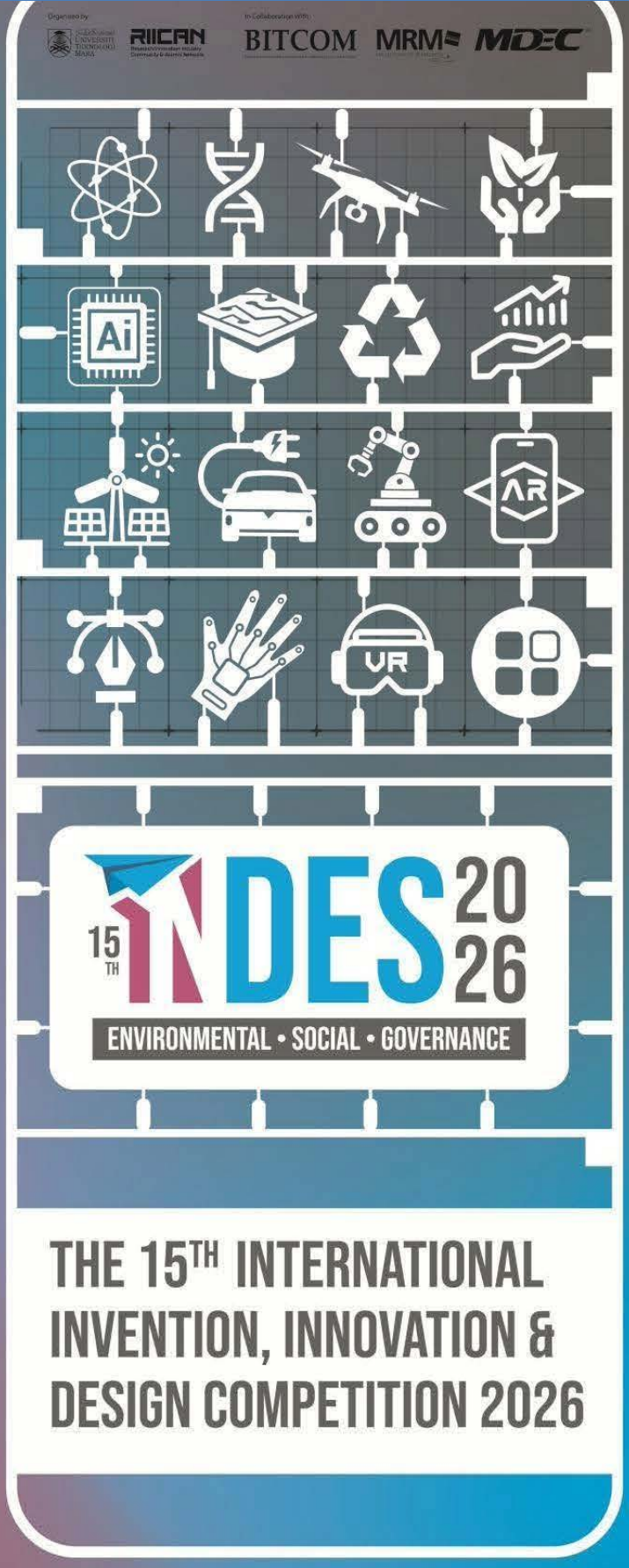

E-BOOK OF

EXTENDED ABSTRACT

E-BOOK OF EXTENDED ABSTRACT

THE 15th INTERNATIONAL
INVENTION, INNOVATION &
DESIGN COMPETITION 2026

Organized by:
Office of Research, Industry,
Community & Alumni Network
UiTM Perak Branch

© Unit Penerbitan UiTM Perak, 2026

All rights reserved. No part of this publication may be reproduced, copied, stored in any retrieval system or transmitted in any form or by any means; electronic, mechanical, photocopying, recording or otherwise; without permission on writing from the director of Unit Penerbitan UiTM Perak, Universiti Teknologi MARA Perak Branch.

Unit Penerbitan UiTM Perak,
Universiti Teknologi MARA,
Perak Branch, 32610
Seri Iskandar Perak, Malaysia.

Perpustakaan Negara Malaysia Cataloguing in Publication Data

No e- ISBN 978-967-2776-67-3

Cover Design: Asrul Nizuan Ariffin

Typesetting : Georgia

EDITORIAL BOARD

Editor-in-Chief

Muhd Syahir Abdul Rani

Managing Editors

Muhammad Wajihuddin Johari
Paul GnanaSelvam A/L Pakirnathan
Nazirul Mubin Mohd Noor
Nurdiyana Mohamad Yusof
Halimatussadiah Iksan

Copy Editors

Sheema Liza Idris
Nurul Munirah Azamri
Zarlina Mohd Zamari
NoorAileen Ibrahim
Farahidatul Akmar Awaludin
Siti Syairah binti Fakhruddin
Noor Fazzrienee JZ Nun Ramlan
Madaha binti Hanafi @ Mohd Ghani
Halimatun Saadiah Abd Mutalib
Hanitha A/P Satthiananthan
Syaza Kamarudin
Iza Faradiba Mohammad Patel
Nuramira Anuar
Noorlinda Alang
Noraziah Azizan
Faridatul Akma Wan Mohd Rashdi
Azurawati Zaidi
Ong Elly
Noran Nur Munira Khalili
Amirah Athirah Amir Yazid
Nurshahirah Azman
Daljeet Singh Sedhu A/L Janah Singh
Budiman Sabri Ahmad
Amirul Farhan Ahmad Tarmizi
Sarah Sakinah Assa'adah Johari

THE THEORY COMPASS: NAVIGATING SIMILARITIES AND DIFFERENCES IN PAD104 THROUGH MIND MAPPING

Dr. Junaida Ismail[1]*, Dr. Nor Adyanti Ahmad[2], Intan Syahriza Azizan[3], Dr. Rozaimy Ridzuan4, Prof. Dr. Sulikhah Asmorowati5

[1 2 3] FSPPP UiTM Cawangan Kedah
4 FSPPP UiTM Cawangan Raub
5 FISIP, UNAIR, Indonesia

**junaidaismail@uitm.edu.my*

ABSTRACT

"The Theory Compass: Navigating Similarities and Differences in PAD104 through Mind Mapping" is an educational innovation designed to improve students' critical thinking and knowledge retention by addressing the complexities of public policy theories. While traditional methods often lead to confusion between overlapping theoretical frameworks, this project introduces a structured comparative mind-mapping approach. This tool enables learners to visually organize, connect, and understand the nuanced similarities and differences between key concepts systematically. By integrating visual learning strategies, the innovation supports diverse learning preferences and transforms abstract theoretical debates into clear and manageable mental models. Preliminary feedback indicates that this targeted approach has significantly improved learners' motivation, clarity of understanding, and ability to synthesize complex information. This project demonstrates the potential of visual tools to transform traditional theory-heavy courses into effective, student-centered learning environments.

Keyword: Differences, Mind Mapping, PAD104, Public Policy, student-centered learning environments.

1. INTRODUCTION

Traditional pedagogical methods, such as chalk-and-board lectures, remain a staple for information transfer; however, they offer no guarantee of deep knowledge synthesis or long-term retention (Biggs & Tang, 2011). In the context of Introduction to Malaysia Public Policy (PAD 104), students often encounter a dense landscape of theoretical frameworks that overlap in function but differ in application. Without effective visual scaffolding, learners frequently struggle to distinguish between these nuanced theories, leading to what Sweller (2011) describes as cognitive overload.

Research indicates that visual teaching techniques, particularly mind mapping, facilitate effective learning for approximately 65% of visual learners by organizing abstract thoughts into concrete structures (Mayer, 2009). Nowadays, critical thinking is gaining significant importance in administrative education, requiring students to move beyond rote memorization toward comparative analysis (Davies, 2011). According to Buzan (2018), mind mapping serves as a "radiant thinking" tool that mirrors the brain's natural architecture, making it ideal for understanding complex relationships.

Consequently, this project introduces "The Theory Compass," a mind-mapping learning technique specifically designed to help PAD 104 students navigate the similarities and differences among complex administrative theories. By transforming linear text into a multidimensional visual map, this study

evaluates how structured mind mapping can reduce theoretical confusion and improve learners' overall understanding and motivation.

The primary pedagogical challenge in PAD 104 (Introduction to Public Policy) is the high level of theoretical abstraction. Students often experience "theoretical conflation," where they struggle to distinguish between overlapping frameworks such as Elite Theory and Group Theory (Davies, 2011).

Traditional linear note-taking fails to capture the multidimensional relationships between these concepts, leading to:

- Cognitive Overload: Students are overwhelmed by dense text and fail to see the "big picture" (Sweller, 2011).
- Surface Learning: Rote memorization of definitions rather than a deep understanding of similarities and differences.
- Decreased Motivation: Students perceive the subject as "dry" or "confusing," resulting in lower engagement during assessments (Biggs & Tang, 2011)

2. METHODOLOGY

This innovation employs a Mixed-Methods Action Research design, following the iterative cycle of planning, acting, observing, and reflecting (Norton, 2009). Figure 1 shows the process of developing the mind map.

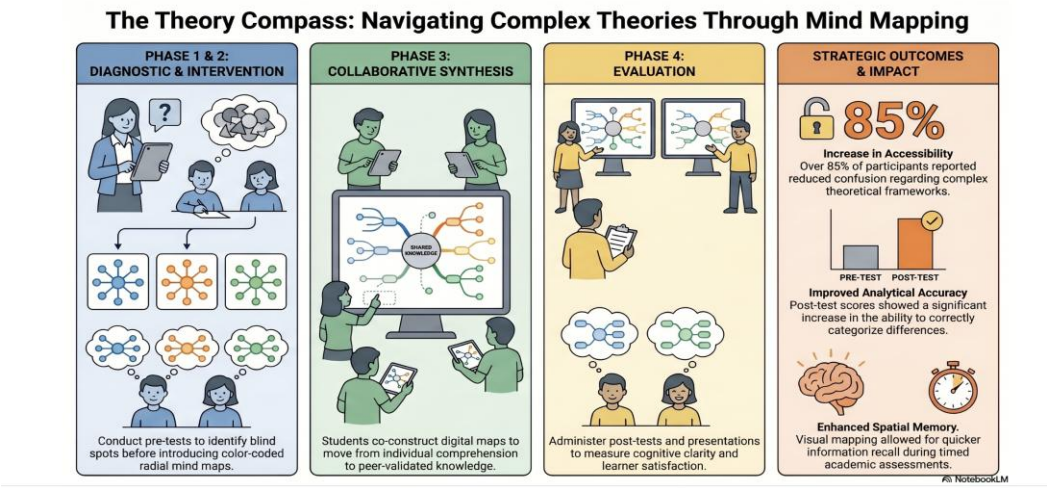

Figure 1 Method of developing the Mind Mapping

Phase 1: Diagnostic Assessment: A pre-test was administered to identify specific theoretical "blind spots" where students most frequently confused concepts

Phase 2: The Intervention (The Theory Compass): Students were introduced to a digital mind-mapping framework. Based on Buzan's (2018) Radiant Thinking model, the Theory Compass utilizes a radial comparative structure. It uses specific colour-coded "nodes" to represent shared characteristics (similarities) and divergent branches to represent unique traits (differences).

Phase 3: Collaborative Synthesis: Students utilized collaborative digital platforms to co-construct mind maps during tutorial sessions, moving from individual comprehension to peer-validated knowledge.

Phase 4: Evaluation: Data were collected through a post-test and tutorial-class presentations to measure cognitive clarity, learning satisfaction, and students' understanding of the subject matter.

3. FINDINGS

Preliminary results from the pilot implementation indicate:

- Improved analytical accuracy: Post-test scores showed a significant increase in the students' ability to correctly categorize theoretical differences compared to the control group.
- Enhanced Information Retention: Students reported that the visual "spatial memory" of the mind maps allowed for quicker recall during timed assessments, supporting Mayer's (2009) Multimedia Learning Theory.
- High User Engagement: Over 85% of participants agreed that the mind maps reduced their confusion and made complex theories more accessible.
- Transition to deep learning: The visual nature of the maps forced students to actively categorize information rather than passively transcribe lecture notes.

4. NOVELTY

- Sprint–based format, short, time, and challenges replace transitional lectures
- Mind Map structure – motivates deeper engagement with the team
- Real World Simulation – understand deeper engagement with the team
- Integration of Infographic – Usage of multimedia and collaborative report assessments

5. SAMPLE OF MIND MAP

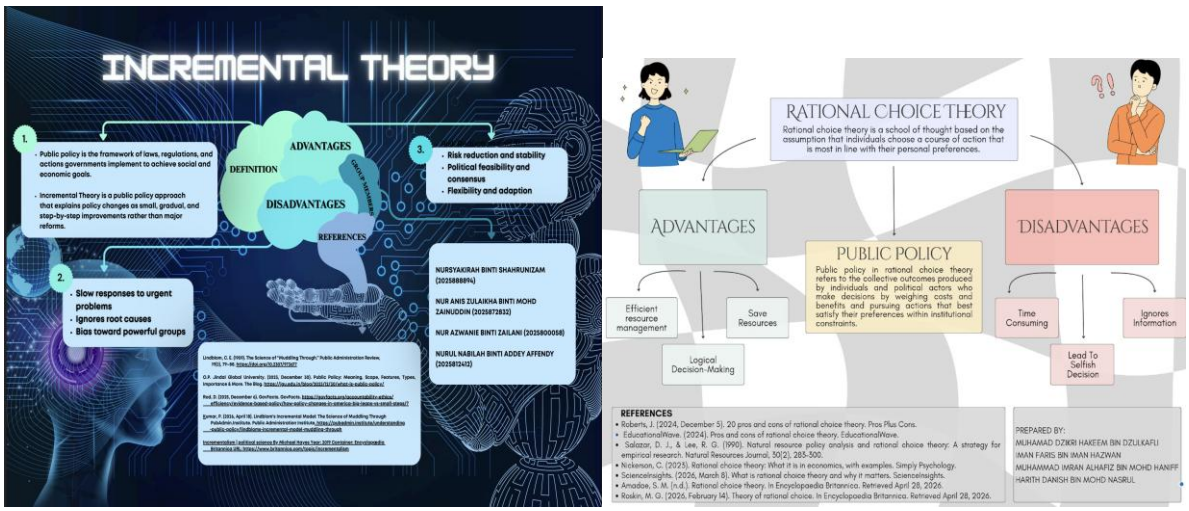

Figure 2 Sample of mind map by student PAD104

6. CONCLUSION

The Mind Map successfully bridges the gap between abstract theory and student comprehension in PAD 104. By transforming the traditional learning process into a visual decoding exercise, the innovation fosters critical thinking and cognitive clarity. The results suggest that structured mind mapping is not merely a creative tool but also a valuable pedagogical intervention for theory-heavy courses. This

framework provides a scalable model to help students navigate complex intellectual landscapes with precision and confidence.

REFERENCES

Biggs, J., & Tang, C. (2011). *Teaching for quality learning at university* (4th ed.). McGraw-Hill Education.

Buzan, T. (2018). *The mind map book: Unlock your creativity, boost your memory, change your life*. BBC Active.

Davies, M. (2011). Concept mapping, mind mapping and argument mapping: What are the differences and do they matter? *Higher Education, 62*(3), 279–301. https://doi.org/10.1007/s10734-010-9387-6

Mayer, R. E. (2009). *Multimedia learning* (2nd ed.). Cambridge University Press.

Sweller, J. (2011). Cognitive load theory. *Psychology of Learning and Motivation, 55*, 37–76. https://doi.org/10.1016/B978-0-12-387691-1.00002-8

E-BOOK OF EXTENDED ABSTRACT THE 15th INTERNATIONAL INVENTION, INNOVATION & DESIGN COMPETITION 2026

eISBN 978-967-2776-67-3

9 789672 776673

Date of Publication: 13 July 2026

UNIT PENERBITAN UITM PERAK

(online)