INTERNATIONAL EXHIBITION & SYMPOSIUM ON PRODUCTIVITY, INNOVATION, KNOWLEDGE & EDUCATION

E-PROCEEDING

EXTENDED ABSTRACT



UiTM di hatiku

اوسها تقوى مولايا

E-PROCEEDING
EXTENDED ABSTRACT

Copyright © 2025 by Universiti Teknologi MARA (UiTM) Cawangan Kedah

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without prior written permission from the publisher.

© i-SPiKE 2025 Extended Abstract Proceedings is jointly published by Universiti Teknologi MARA (UiTM) Cawangan Kedah.

The views, opinions, and technical recommendations expressed by the contributors and authors are entirely their own and do not necessarily reflect the views of the editors, the faculty, or the University.

Editors

- Prof. Madya Dr. Azlyn Ahmad Zawawi
- Dr. Anis Farawahida Mohd Karim
- Dr. Nursyazwanie Mansor
- Dr. Roshidah Safeei
- Azni Syafena binti Andin Salamat
- Hasniza binti Hassim
- Dr. Nur Zharifah Che Adenan
- Mohd Rozman Mohd Nasir
- Nurfaznim binti Shuib
- Norsyazwani binti Ab Halim

e ISBN 978-967-2948-91-9

9 789672 948919

UiTM Cawangan Kedah

Published by:
Universiti Teknologi MARA (UiTM) Cawangan Kedah
Sungai Petani Campus
08400 Merbok
Kedah
Malaysia

Welcome Message

RECTOR, UITM KEDAH BRANCH

Assalamualaikum warahmatullahi wabarakatuh,

First and foremost, I would like to extend my deepest appreciation to the organising committee of i-SPiKE 2025 for their steadfast dedication and commitment in making this prestigious event a reality. My heartfelt congratulations to the committee for their tireless efforts in ensuring that i-SPiKE continues to grow as a meaningful and impactful platform for academics, researchers, students, and industry players worldwide.

The theme for this year, "Empowering Minds: Bridging Innovation, Knowledge and Education for a Sustainable Future," is both timely and significant. It reflects our shared responsibility to not only embrace creativity and technological advancement, but also to ensure that innovation directly contributes to sustainable development, equitable education, and the well-being of future generations.

i-SPiKE 2025 provides a dynamic platform for showcasing innovations that address real-world challenges while opening new avenues for collaboration, engagement, and inclusivity. By bridging knowledge, innovation, and education, this symposium strengthens our collective capacity to design solutions that empower communities and inspire positive change.
I am truly impressed by the diversity and calibre of participants in this year's event. The projects and ideas presented highlight the extraordinary creativity and determination of our innovators. I am confident that the insights and solutions shared here will pave the way for continuous advancement in teaching, learning, and innovation.

It is my sincere hope that you will find i-SPiKE 2025 an enriching experience, one that sparks new ideas, builds lasting collaborations, and strengthens our shared vision for a sustainable future. To all participants, I wish you every success, and to the winners, my warmest congratulations.
Once again, I thank the organising committee, partners, and contributors for their invaluable support. May i-SPiKE 2025 continue to inspire and empower minds for many years to come.

Professor Dr. Roshima Haji Said
Acting Rector
Universiti Teknologi MARA (UiTM) Kedah Branch

Welcome Message
(i-SPiKE 2025 CHAIR)

It is my great pleasure to welcome you to the 4th International Exhibition & Symposium on Productivity, Innovation, Knowledge, and Education 2025 (i-SPiKE 2025). This year's theme, "Empowering Minds: Bridging Innovation, Knowledge, and Education for a Sustainable Future," reflects our collective commitment to advancing innovation and fostering meaningful collaboration across academia, industry, and communities.

i-SPiKE 2025 provides a platform for scholars, researchers, students, and practitioners from diverse fields to showcase their ideas, share knowledge, and inspire new solutions to global challenges. We extend our sincere appreciation to all participants and contributors whose efforts and dedication have made this symposium possible.
We hope that this e-proceedings serves not only as a record of the innovations presented but also as a valuable resource that continues to inspire long after the event.

Thank you.

Dr Junaida Ismail
Chair
4th International Exhibition & Symposium on Productivity, Innovation, Knowledge, and Education 2025 (i-SPiKE 2025)

PREFACE

The 4th International Exhibition & Symposium on Productivity, Innovation, Knowledge, and Education (i-SPiKE 2025) marks yet another milestone in our ongoing commitment to fostering innovation, creativity, and collaboration across disciplines. Guided by this year's theme, "Empowering Minds: Bridging Innovation, Knowledge and Education for a Sustainable Future," the event provides a dynamic platform for students, educators, researchers, and professionals to share their ideas, showcase their innovations, and engage in meaningful knowledge exchange.

This year, we are pleased to report that i-SPiKE 2025 received approximately 50 initial submissions, with more than 35 projects successfully advancing to final presentation and exhibition. These projects reflect a rich diversity of innovation, ranging from educational technologies, digital applications, and gamified learning tools to sustainable materials, cultural heritage preservation, and community-focused solutions. Collectively, they embody the spirit of bridging innovation and education to address pressing societal and global challenges.

We sincerely thank all participants, reviewers, and committee members for their invaluable contributions in making i-SPiKE 2025 a success. It is our hope that this e-proceedings will not only serve as a record of the ideas and innovations presented, but also as an inspiration for future collaborations and advancements in the pursuit of sustainable knowledge and innovation.

Assoc. Prof. Dr. Azlyn Ahmad Zawawi
Editor-in-Chief, i-SPiKE 2025 Proceedings

TABLE OF CONTENTS

2.	**BIZMATH-FAST (BUSINESS MATHEMATICS – FORMULA ACCURACY & SPEED TRAINER)**	**84**
3.	COLLABORATIVE INNOVATION LAB: RATE & REFLECT SIMULATION	89
4.	ECONOSPHERE 1.0 – THE ECONOMICS E-FLASHCARDS	93
5.	ACC-TILE CHALLENGE 1.0: PERMAINAN INOVATIF UNTUK MAHIR DEBIT & KREDIT	96
6.	PRESERVING CULTURAL HERITAGE THROUGH AR-INFUSED STORYTELLING: PROMOTING KASUT MANIK VIA INTERACTIVE STORYBOOK FOR THE YOUNGER GENERATION	99
7.	FROM CLASSROOM TO COLLOQUIUM: STRENGTHENING SKILLS OF CTU271 (ISLAM AND COMMUNICATION) STUDENTS IN UiTM	103
8.	RABIES VACCINATION IN SARAWAK: VAXPAW	109
9.	ChanteQ: AN INNOVATIVE MOBILE APP FOR ENHANCING HAIR SALON APPOINTMENT MANAGEMENT	114
10.	REBER LINE 2.0	120
11.	THE APPLICATION OF DESIGN THINKING: CASE STUDY I-ROOM BHEA	124
12.	KICKRESEARCH V2 MODULE V2: THE FAST TRACK TO RESEARCH WRITING	131
CATEGORY 2 - SS (YOUNG)		
1.	CULTURE-LENS EDUCATIONAL KIT: A MODULE FOR CULTURALLY RESPONSIVE ANTI-CORRUPTION EDUCATION	139
2.	“MyJourney”: A GEN-Z-CENTRIC DIGITAL INNOVATION TO IMPROVE JOB ENGAGEMENT AND DECREASE TURNOVER INTENTION IN THE HOSPITALITY SECTOR	144
3.	SPIRITUAL WELL-BEING MODULE BASED ON AL-DIHLAWI AND HAMKA SPIRITUAL (SWBDH)	148
CATEGORY 3 – PRODUCT RESEARCH DESIGN (ACADEMIC)		
1.	THE SWICI BOARD: A GAMIFIED APPROACH TO CAREER EXPLORATION AND DECISION-MAKING AMONG AT-RISK ADOLESCENTS	158
2.	EMPOWERING ABILITIES: THE 7 STEPS OF LIFE TRANSFORMATION MODULE FOR PERSONS WITH DISABILITIES	166
CATEGORY 3 – PRODUCT RESEARCH DESIGN (YOUNG)		
1.	SENSME SMART GLASSES (ASSISTIVE WEARABLE TECHNOLOGY FOR VISUAL IMPAIRMENT)	173

CATEGORY 3

PRODUCT RESEARCH DESIGN (ACADEMIC)

THE SWICI BOARD: A GAMIFIED APPROACH TO CAREER EXPLORATION AND DECISION-MAKING AMONG AT-RISK ADOLESCENTS

Yusnita Binti Ibrahim
Jabatan Kebajikan Masyarakat, Malaysia
yus@jkm.gov.my

Intan Syahriza Binti Azizan
Faculty of Administrative Science and Policy Studies, UiTM Kedah Branch
Intan219@uitm.edu.my

Nur Hidyati Binti Zolhani
Academy of Language Studies, UiTM Kedah Branch
hidyati@uitm.edu.my

ABSTRACT

Developing a professional identity and determining future career anchors presents a significant challenge for adolescents, particularly in the modern, rapidly evolving labor market. The SWICi board game has been designed to support at-risk youths in Malaysia by helping them to recognize their career interests, personalities, and the knowledge required to enhance their career decision-making processes. Registered under Intellectual Property number LY201900787, the game also assesses participants' knowledge by illustrating on a range of life and career experiences. SWICi can be played individually or in groups of two to six youngsters. The development of the SWICi board game, as part of the Career Decision Intervention module for at-risk teenagers, underwent validation by a panel of 10 experts. Then, the module was piloted with a group of adolescents aged 13 to 17 to assess its reliability, paving the way for a preliminary study. Findings from the initial study indicate that the SWICi board game significantly enhances adolescents' understanding of their career identity, knowledge of the world of employment, and the steps involved in the career decision-making process. Hence, this contributes to a notable increase in their career decision-making self-efficacy. The results highlight the critical role of career counselors and practitioners in supporting adolescents' career development, particularly in fostering better self-efficacy in career decision-making. Basically, the SWICi board game presents a valuable tool for facilitating career exploration and decision-making among youths in an engaging and educational arrangement, with significant potential for positive impact.

Keywords: SWICi board game, career decision intervention, at-risk adolescents, career decision-making efficacy, pilot study

INTRODUCTION

Advancements in the world of work shape the challenges adolescents face in both present and future careers (Hirschi, 2018). Social, economic, and cultural contexts influence job availability, thereby shaping adolescents' aspirations, career interests, and personality development. Increasing job competition further necessitates adaptation to emerging career trends and related challenges. These complexities place considerable demands on adolescents during the career decision-making process. As a result, they may experience career-related problems such as ambiguity, indecision, and decision-making difficulties, which can contribute to psychological, social, and behavioral issues (Anghel & Gati, 2019). Such challenges highlight the need for practical and innovative interventions that can support adolescents in exploring career pathways and strengthening their decision-making self-efficacy.

PROBLEM STATEMENT

Adolescence is a critical stage of identity formation characterized by significant biological, cognitive, and social transitions (Erikson, 1968), during which individuals begin to explore potential career paths and build awareness of the world of work (Lent & Brown, 2008). However, the career decision-making process is often complex, with shifting preferences and uncertainties that require structured support (Gati & Gutentag, 2015). For at-risk adolescents, adverse life experiences may further restrict access to resources, self-knowledge, and career opportunities, negatively impacting cognitive, emotional, and occupational development (Kiteki, 2021; Prescod & Zeligman, 2018). These challenges heighten the risk of career indecision, maladjustment, and reduced self-efficacy. Consequently, there is a critical need for practical and innovative interventions that strengthen vocational identity, enhance workplace competencies, and improve career decision-making skills. The SWICi board game responds to this need by providing an engaging, structured, and educational tool to support adolescents—particularly those at risk—in navigating their career development more effectively.

OBJECTIVES

The Strength, Weakness, Interest, and Career of an Individual (SWICi) Board is an educational game developed by integrating elements of Monopoly, Snakes and Ladders, and puzzle-based activities. Its primary purpose is to support adolescents in assessing their strengths and opportunities while engaging with simulated real-world scenarios. In addition, the game functions as a tool to evaluate adolescents' knowledge and awareness of career and life choices, drawing on information acquired from multiple sources. The present study aims to assess the effectiveness of the SWICi Board as a career decision-making intervention module with the following objectives:

i. To identify and explore adolescents' personal and career self-efficacy;
ii. To provide knowledge concerning specific occupations of interest;
iii. To establish strategies for coping with developmental challenges and aligning career goals;
iv. To analyze the process of career decision-making through participants' reflections and discussions, thereby enhancing their confidence in influencing their own career development; and
v. To strengthen adolescents' confidence in their ability to solve problems effectively.

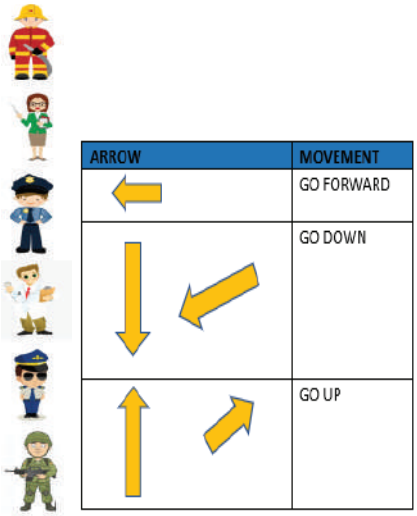
PROCEDURE IN CONDUCTING SWICi BOARD GAME

The SWICi Board Game begins with participants assembling a 25-piece puzzle to complete the game board, fostering collaboration and initial engagement. Each participant then selects a token representing a professional persona and positions it at the starting point (space 1).

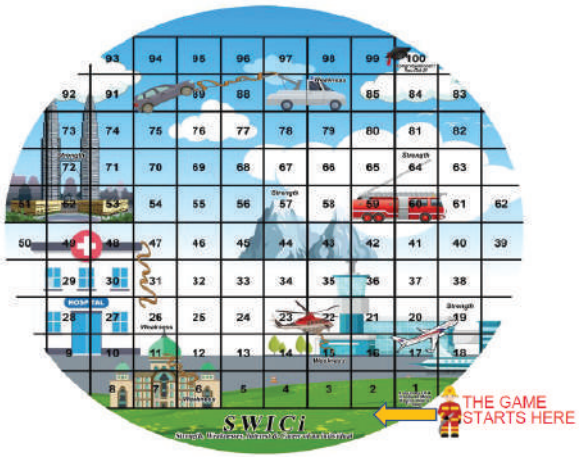
Movement across the board is determined by dice rolls, with gameplay continuing until participants reach the final space (100). Along the way, players encounter designated spaces that represent either advancement (e.g., spaces 15, 44, 71, 88) or regression (e.g., spaces 10, 47, 79). Advancement spaces allow progression to higher positions, symbolizing strengths, while regression spaces require players to move backward, representing challenges or weaknesses.

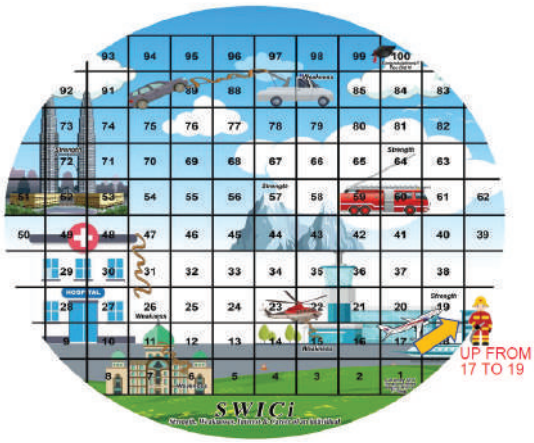
Throughout the game, participants draw “opportunity” and “chance” cards containing questions related to personal experiences, career options, and workplace knowledge. Players are required to respond within five seconds, encouraging quick reflection and decision-making. These elements replicate the unpredictable nature of career

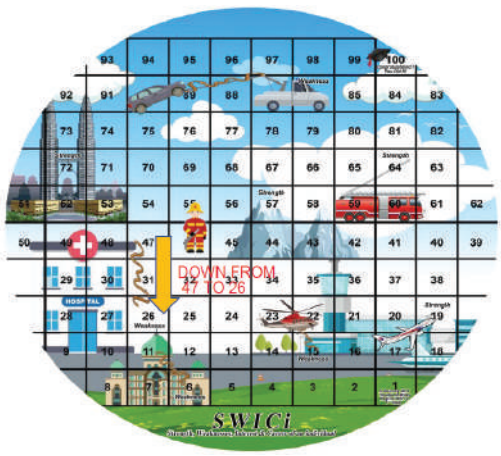
The game concludes when the final space (100) is reached, after completion of the ongoing dice roll. At the end of the session, participants complete a short survey to evaluate their engagement, perceptions, and the overall effectiveness of the SWICi Board Game as a learning tool.

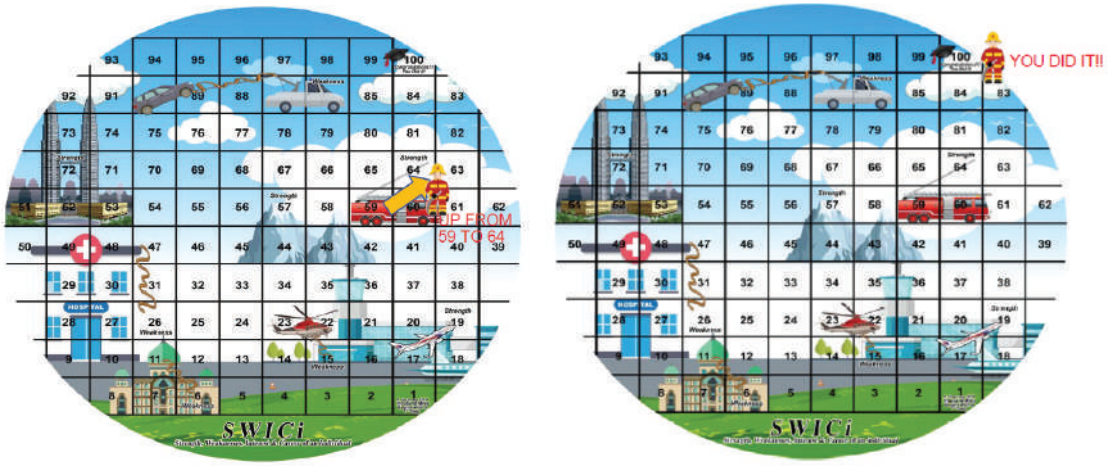


ARROW	MOVEMENT
←	GO FORWARD
↓ ↙	GO DOWN
↑ ↗	GO UP









Potential Applications and Commercialization

The SWICi Board is recommended for adoption by faculty members, research departments, educational institutions, and stakeholders across both public and private sectors as an innovative educational tool. By fostering critical self-assessment and enhancing knowledge and skills, the board supports more informed and effective career decision-making. It is also applicable to organizations working with at-risk youth, providing a structured means for exploring vocational identity and workplace competencies. In doing so, the SWICi Board helps reduce barriers to career success and promote sustainable career development outcomes.

METHODOLOGY

A purposive sampling method was used to select study participants, who served as the unit of analysis. Each participant engaged individually with the SWICi exercise in a separate session. Following the activity, participants completed feedback forms assessing their experience. Responses were analyzed using descriptive statistics, with data coded and processed via the Statistical Package for the Social Sciences (SPSS), Version 25.

FINDINGS

Preliminary Study

The career decision-making intervention module was developed specifically for at-risk adolescents. To establish its validity, feedback was obtained from ten experts, and revisions were made accordingly. Content validity was calculated using the formula proposed by Sidek Mohd Noah and Jamaludin Ahmad (2005). A validity index exceeding 70% was considered acceptable, while scores below this threshold required further review and refinement to ensure consistency with the study objectives. The validation process involved two rounds of rechecking: first, with an individual adolescent, and second, with a group of adolescents.

Table 1. Calculation of content validity assessment

REVIEWERS	SWICi
R1	9
R2	10
R3	8
R4	9
R5	10
R6	8
R7	8
R8	9
R9	10
R10	10
PERCENTAGE	91%

Note:
Total Score from Expert =10
Maximum Score =100

Pilot Testing

A pilot study of the SWICi Board was then conducted to evaluate the suitability of its activities, assess the feasibility of a full-scale implementation protocol, and collect preliminary data (Teijlingen & Hundley, 2002). The pilot ensured that the module's activities aligned with the research objectives and provided a foundation for large-scale application.

Results and Analysis

The outcomes of the SWICi Board are summarized in **Table 2**. Mean scores were calculated for each item to assess implementation effectiveness and participants' comprehension of career decision-making concepts. A descriptive analysis was also performed to evaluate the overall effectiveness of the intervention, with results presented below:

Table 2. Descriptive analysis

Items	Totally disagree [1]				Totally agree [5]	Mean score
I understand the description in relation to the career interest test.	-	-	3	28	10	**4.1**
I managed to answer the career interest test within the allocated time.	-	-	-	8	40	**4.8**
I understand the ways of analysing career interest tests.	-	-	12	24	-	**3.6**
I was able to interpret career interest test scores against myself.	-	-	12	24	-	**3.6**
I understand the description in relation to SWICi activities.	-	-	3	24	25	**4.4**
I managed to match the puzzle within the allocated time.	-	-	-	-	50	**5**
1 was able to answer the questions given in the SWICi card within the allocated time.	-	-	-	20	25	**4.5**
This activity was able to test my knowledge on my career interests.	-	-	3	28	10	**4.1**
I was able to increase my knowledge of career interests.	-	-	3	32	5	**4.0**
I am willing to seek career information through various channels such as through counsellors, internet, scholarly books, and others.	-	-	-	28	15	**4.3**

DISCUSSION AND CONCLUSION

Career indecision, while often at a normal stage of development, can hinder at-risk adolescents' personal, social, and professional growth if left unresolved. Factors such as self-efficacy, personality traits, vocational interests, and contextual influences play a significant role in shaping career decision-making (Atitsogbe et al., 2018). Strengthening self-efficacy is particularly important, as it enables at-risk adolescents to make informed choices, clarify career goals, and adapt effectively to future transitions (Li et al., 2018). Research further demonstrates that effective decision-making has a positive influence on both academic performance and long-term employment outcomes (Milsom & Coughlin, 2017).

Structured, empirically validated interventions—such as the SWICi Board—provide a practical avenue to address career indecision. By fostering self-awareness, motivation, and informed decision-making, these interventions enhance the effectiveness of career counselling while reducing the anxiety often associated with career choice. Encouraging at-risk adolescents to explore career alternatives and identifying the skills required ensures that they are better prepared for sustainable academic and professional success.

Beyond its immediate educational value, the SWICi Board holds strong potential for commercialization as an innovative career decision-making tool adaptable to diverse educational and organizational contexts. Its scalability allows for integration into schools, universities, youth development programs, and workplace training initiatives. By bridging research with practice, the SWICi Board demonstrates measurable impact in reducing career indecision and promoting sustainable employability among at-risk adolescents.

REFERENCES

Anghel, E., & Gati, I. (2019). The associations between career decision-making difficulties and negative emotional states. *Journal of Career Development*, https://doi.org/10.1177/0894845319884119

Atitsogbe, K. A., Moumoula, I. A., Rochat, S., Antonietti, J. P., & Rossier, J. (2018). Vocational interests and career indecision in Switzerland and Burkina Faso: Cross-cultural similarities and differences. *Journal of Vocational Behavior*, 107, 126–140. https://doi.org/10.1016/j.jvb.2018.04.002

Bellah N. Kiteki (2021) African Refugee Youth's Experiences and Impact on Career Development: An Adaptation of a Culturally Responsive Career Exploration Group. *The Journal for Specialists in Group Work, 46(1),* 90-107, https://doi.org/10.1080/01933922.2020.1856257

Erikson, E. (1959). Theory of identity development. *E. Erikson, Identity and the life cycle. Nueva York: International Universities Press. Obtenido de http://childdevpsychology. yolasite. com/resources/theory% 20of% 20identity% 20erikson. Pdf*

Erikson, E. (1968). Identity, youth, and crisis. New York, NY: Norton

Gati, I., & Gutentag, T. (2015). The stability of aspect-based career preferences and of the recommended list of occupations derived from them. *Journal of Vocational Behavior*, 87, 11–21. https://doi.org/10.1016/j.jvb.2014.11.009

Gati, I., Krausz, M., & Osipow, S. H. (1996). *A taxonomy of difficulties in career decision making. Journal of Counseling Psychology, 43*(4), 510–526. https://doi.org/10.1037/0022-0167.43.4.510

Hirschi, A. (2018). The Fourth Industrial Revolution: Issues and implications for career research and practice. *Career Development Quarterly*, *66*(3). https://doi.org/10.1002/cdq.12142

Holland, J. L. (1973). *Making vocational choices: A theory of careers*. Upper Saddle River, NJ: Prentice Hall.

Holland, J. L. (1992). *Making vocational choices: A theory of vocational personalities and work environment.* (2nd ed.). USA: Florida Psychology Assessment Resources.

Holland, J. L. (1997). *Making vocational choices: A theory of vocational personalities and work environments* (3rd ed.). Odessa, FL: Psychological Assessment Resources.

Lent, R. W., Brown, S. D., & Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance. *Journal of Vocational Behavior,* 45, 79–122. https://doi.org/10.1006/jvbe.1994.1027

Lent, R. W., Brown, S. D., & Hackett, G. (2000). Contextual supports and barriers to career choice: A social cognitive analysis. J*ournal of Counseling Psychology,* 47, 36–49. https://doi.org/10.1037//0022-167.47.1.36

Lent, R. W., & Brown, S. D. (2008). Social cognitive career theory and subjective well-being in the context of work. *Journal of Career Assessment*, 16, 6–21. https://doi.org/10.1177/1069072707305769.

Li, M., Fan, W., Cheung, F. M., & Wang, Q. (2019). Reciprocal Associations Between Career Self-Efficacy and Vocational Identity: A Three-Wave Longitudinal Study. *Journal of Career Assessment*, *27*(4), 645–660. https://doi.org/10.1177/1069072718796035

Milsom, A., & Coughlin, J. (2017). Examining Person–Environment Fit and Academic Major Satisfaction. *Journal of College Counseling*, *20*(3), 250–262. https://doi.org/10.1002/jocc.12073

Osipow, S. H. (1999). Assessing career indecision. J*ournal of Vocational Behavior, 55,* 147-154. https://doi.org/10.1006/jvbe.1999.1704

Sheu, H., & Bordon, J. J. (2017). SCCT research in the international context: Empirical evidence, future direction and practical implications. *Journal of Career Assessment, 25,* 58074. Doi: 10.1177/1069072716657826

Sidek Mohd Noah & Jamaluddin Ahmad. (2005). *Pembinaan Modul: Bagaimana Membina Modul Latihan dan Modul Akademik.* Serdang, Selangor: Penerbit Universiti Putra Malaysia

Prescod, D. J., & Zeligman, M. (2018). Career Adaptability of Trauma Survivors: The Moderating Role of Posttraumatic Growth. *Career Development Quarterly*, *66*(2), 107–120. https://doi.org/10.1002/cdq.12126

Van Teijlingen, E., & Hundley, V. (2002). The importance of pilot studies. *Nursing Standard, 16*(40), 33.


i-SPiKE2025