# Scopus

#### **Documents**

Ghazali, N.a, Nasir, F.D.M.b, Nordin, M.S.c

Moderating Effect of Gender between MOOC-efficacy and Meaningful Learning (2022) Asian Journal of University Education, 18 (4), pp. 1076-1092.

DOI: 10.24191/AJUE.V18I4.20007

### **Abstract**

This study looks at three key concepts in 21st century e-education: MOOC-efficacy, meaningful learning, and gender among undergraduate students at Malaysian public universities. Its primary goal is to investigate the role of gender as a moderator in the relationship between MOOC-efficacy and meaningful learning. This study uses four criteria to define MOOC-efficacy (information searching, making queries, MOOC learning, and MOOC usability). Meanwhile, five dimensions are used to conceptualise meaningful learning (i.e., cooperative learning, active learning, authentic learning, constructive learning, and intentional learning). A cross-sectional survey design was used in this study. The data were collected using a 52-item questionnaire with reliability indices ranging from 0.822 to 0.890 for the dimensions. University students who volunteered to take part in the study and have prior experience using MOOCs make up the study's population. 603 students were chosen at random to represent the sample. Data analysis included the Structural Equation Modeling (SEM) test for moderation. The result indicates a change in the chi-square ( $\Delta X2$ ) value (0.779), which is lower than the chi-square (X2) critical value (3.841) at p < 0.05. This shows that gender did not emerge as a moderating factor of the relationship between MOOC-efficacy and meaningful learning among these students. An interesting finding includes the fact that males and females are provided an equal exposure and opportunity of education in Malaysia. There were no stereotyping and gaps in the educational treatment, opportunities and learning experience between gender. © 2022, Asian Journal of University Education. All Rights Reserved.

### **Author Keywords**

Gender; Massive open online course (mooc); Meaningful learning; Moderating effect; Mooc-efficacy

#### References

- Abdullah, Z., Ramlan, M. F. H., Sabran, M. S., Alsagoff, S. A. S. Towards a university branding: The effect of self-efficacy on student development in a major higher education institution (2015) Jurnal Personalia Pelajar, 17, pp. 49-61.
- Achterkamp, R., Hermens, H., Vollenbroek-Hutten, M. The influence of success experience on self-efficacy when providing feedback through technology (2015) Computers in Human Behavior, 52, pp. 419-423.
- Adzhar, H., Khalid, F., Karim, A. A. Penggunaan massive open online course (MOOC) sebagai kaedah pembelajaran

(2017) Pembelajaran abad ke-21: Trend integrasi teknologi, pp. 179-188. R. Mohamed Rosly, N. A. Razali, & N. A. Jamilluddin (Eds), Fakulti Pendidikan UKM

· Almahdi, M. E., Sulfeeza, M. D.

The challenges of massive open online courses (MOOCs)-a preliminary review (2017) Proceedings of the 6th International Conference on Computing & Informatics, pp. 473-479.

- J. Zulikha & N. H. Zakaria (Eds). Sintok: School of Computing
- Al-Mahroogi, R., Denman, C. Alternative forms of assessment

<sup>&</sup>lt;sup>a</sup> Faculty of Educational Studies, Universiti Putra Malaysia, Selangor, Serdang, 43400, Malaysia

<sup>&</sup>lt;sup>b</sup> Faculty of Education and Humanities, UNITAR International University, Selangor, Petaling Jaya, 47301, Malaysia

<sup>&</sup>lt;sup>c</sup> Kulliyyah of Education, International Islamic University Malaysia, P.O. Box 10, Kuala Lumpur, 50728, Malaysia

(2018) The TESOL encyclopedia of English language language teaching, pp. 4851-4856. J. I. Liontas, M. DelliCarpini, & C. Coombe (Eds), Hoboken, NJ: Wiley

- (2014) The standards for educational and psychological testing, American Educational Research Association
- Awang, Z. (2015) SEM made simple: A gentle approach to learning structural equation modelling, Bandar Baru Bangi, MPWS Rich Resources
- · Ausubel, D. G.

Cognitive structure and the facilitation of meaningful verbal learning (1963) Journal of Teacher Education, 14 (2), pp. 217-222.

 Baleghi-Zadeh, S., Ayub, A. F. M., Mahmud, R., Daud, S. M. Learning management system utilization among Malaysian higher education students: A confirmatory factor analysis (2014) Journal of Education & Human Development, 3 (1), pp. 369-386.

Bandura, A.

### **Self-efficacy**

(2000) Encyclopedia of Psychology, pp. 212-213.

A. Kazdin (Ed), Oxford University Press

Bandura, Albert

(1986) Social foundations of thought and action,

Englewood Cliffs, NJ: Prentice Hall. Branson, K. J. (2017). Academic Self-Efficacy and Massive Open Online Course (MOOC) Completion Rates: Do Academic Self-Efficacy and Adult Learner Characteristics Influence MOOC Outcomes [PhD Thesis]. San Diego State University

Bressington, D. T., Wong, W., Lam, K. K. C., Chien, W. T.

Concept mapping to promote meaningful learning, help relate theory to practice and improve learning self-efficacy in Asian mental health nursing students: A mixedmethods pilot study

(2018) Nurse Education Today, 60, p. 4755.

• Byrne, B. M.

(2013) Structural equation modeling with Mplus: Basic concepts, applications, and programming,

New York: Routledge

(2018),

Retrieved from

• Chou, H. L., Sun, J. C. Y.

The moderating roles of gender and social norms on the relationship between protection motivation and risky online behavior among in-service teachers (2017) Journal of Computer and Education, 112, pp. 83-96.

Chen, Y.-L.

A study on student self-efficacy and technology acceptance model within an online task-based learning environment

(2014) Journal of Computers, 9 (1), pp. 34-43.

• Cheng, K.-H., Tsai, C.-C.

An investigation of Taiwan University students' perceptions of online academic help seeking, and their web-based learning self-efficacy

(2011) The Internet and Higher Education, 14 (3), pp. 150-157.

- Ching, G. S., Lin, M.-C., Wang, W.-L., Tchong, W.-L. Self-efficacy and online help seeking tendencies of EFL learners (2014) International Journal of Learning Technology, 9 (4), pp. 374-391.
- . Cohen, R. J., Swerdlik, M. E. (2010) Psychological testing and assessment: An introduction to test and measurement, (8th ed). Boston: McGraw-Hill
- . Cohen, L., Manion, L., Morrison, K. (2013) Research methods in education, (7th ed). London: Routledge
- · Creswell, J. W. (2012) Educational research: planning, conducting, and evaluating quantitative and qualitative research, (4th ed). Boston: Pearson Education
- Diaz, E. Leadership Self-Efficacy: A study of male and female MBA students in Mexico (2018) Advancing Women in Leadership Journal, 38, pp. 27-34.
- Din, R. (2010) Development and validation of an integrated meaningful hybrid e-training (I-Met) for computer science: Theoretical empirical based design and development approach. (Doctoral Dissertation, Universiti Kebangsaan Malaysia). Retrieved from
- Dunn, T. J., Kennedy, M. Technology Enhanced Learning in higher education, motivations, engagement and academic achievement (2019) Computers & Education, 137, pp. 104-113.
- Fadzil, M., Latif, L. A., Kassim, Z. A., Subramaniam, T. T. **MOOCs Readiness among Malaysian Adult Learners** (2016) E-ASEM Lifelong Learning Forum, pp. 1-13. Copenhagen
- Fadzil, M., Latif, L. A., Munira, T. A. **MOOCs** in Malaysia: A preliminary case study (2015) MOOCs and Educational Challenges around Asia and Europe, 65.
- Fallan, L., Opstad, L. Student self-efficacy and gender-personality interactions (2016) International Journal of Higher Education, 5 (3), pp. 32-44.
- Fasihuddin, H. A., Skinner, G. D., Athauda, R. I. Boosting the opportunities of open learning (MOOCs) through learning theories (2013) GSTF Journal on Computing (JoC), 3 (3), pp. 1-6.
- · Fornell, C., Larker, D. F. Evaluating structural equation models with unobservable variables and measurement error (1981) Journal of Marketing Research, 18, pp. 39-50.
- . Ghazali, N, Nordin, M. S. Measuring Meaningful Learning Experience: Confirmatory Factor Analysis (2019) International Journal of Innovation, Creativity and Change, 9 (12), pp. 283-296.
- Ghazali, N., Nordin, M. S., Abdullah, A., Mohd Ayub, A. F. The relationship between students' MOOC-efficacy and meaningful learning (2020) Asian Journal of University Education, 16 (3), pp. 89-101.

 Ghazali, N, Nordin, M. S., Tunku Ahmad, T. B Development and Validation of Student's MOOC-efficacy Scale: Exploratory Factor **Analysis** 

(2021) Asian Journal of University Education, 17 (4), pp. 327-339.

Ghazali, N., Mustakim, S.S., Nordin, M. S.

Assessing the psychometric properties of students' MOOC-efficacy measurement model

(2021) Pertanika Journal Social Science & Humanities, 29, pp. 215-235. (S1)

• Goh, H. L.

The effectiveness and challenges MOOC for learning

(2017) Asia Pacific Journal of Contemporary Education and Communication Technology, 3 (1), pp. 41-54.

• Gomez-Galan, J., Lazaro-Perez, C., Martinez-Lopez, J. A., Lopez-Meneses, E. Measurement of the MOOC Phenomenon by Pre-Service Teachers: A Descriptive Case Study

(2020) Education Sciences, 10 (9), p. 215.

- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., Tatham, R. L. (2010) Multivariate data analysis. (7th ed). Pearson Education International
- Hamdan, A., Din, R., Manaf, S. Z. A., Salleh, N. S. M., Kamsin, I. F., Ismail, N. M. Exploring the relationship between frequency use of Web 2.0 and meaningful learning attributes (2015) Journal of Technical Education and Training, 7 (1), pp. 50-66.
- . Honicke, T., Broadbent, J.

The influence of academic self-efficacy on academic performance: A systematic

(2016) Educational Research Review, 17, pp. 63-84.

• Hood, N., Littlejohn, A., Milligan, C. Context counts: How learners' contexts influence learning in a MOOC (2015) Computers & Education, 91, pp. 83-91.

Hoque, A. S. M. M., Awang, Z.

The Exploratory Factor Analysis (EFA) of Entrepreneurial Marketing Scale -**Development and Validation** 

(2016) The Tourism Conference,

Paper presented at 20-22 APRIL 2016

Hoque, A. S. M. M, Awang, Z., Jusoff, K., Salleh, F., Muda, H. Social business efficiency: Instrument development and validation procedure using structural equation modelling

(2017) International Business Management, 11 (1), pp. 222-231.

- Howland, J. L., Jonassen, D. H., Marra, R. M. (2013) Meaningful Learning with Technology: Pearson New International Edition, (4th ed). Boston, MA: Pearson Higher Ed
- Huang, C.

Gender differences in academic self-efficacy: A meta-analysis (2013) European Journal of Psychology of Education, 28.

• Islam, K. M. M., Asadullah, M. N. Gender stereotypes and education: A comparative content analysis of Malaysian, Indonesian, Pakistani and Bangladeshi school textbooks (2018) PLoS ONE, 13 (1), p. e0190807.

Jane, W.-W.

# Gender differences in school childrens self-efficacy beliefs: Students and teachers perspectives

(2014) Educational Research and Reviews, 9 (3), pp. 75-82.

- Jonassen, D. H., Howland, J., Moore, J., Marra, R. M. (2003) Learning to solve problems with technology: A constructivist perspective, New Jersey: Merrill Prentice Hall
- . Kline, R. B. (2015) Principles and practice of structural equation modeling, (3rd ed). New York: The Guilford Press
- Koh, J. H. L.

# A rubric for assessing teachers' lesson activities with respect to TPACK for meaningful learning with ICT

(2013) Australasian Journal of Educational Technology, 29 (6), p. 887900.

• Koh, J. H. L.

## Designing and integrating reusable learning objects for meaningful learning: Cases from a graduate programme

(2017) Australasian Journal of Educational Technology, 33 (5), pp. 136-151.

- Lance, C. E., Vandenberg, R. J. (2009) Statistical and methodological myths and urban legends: Doctrine, verity and fable in the organizational and social sciences, New York: Taylor & Francis
- · Lomax, R. G., Schumacker, R. E. (2012) A beginner's guide to structural equation modelling, New York, NY: Routledge Academic
- (1957), Retrieved
- Manzano-Sanchez, H., Outley, C., Gonzalez, J. E., Matarrita-Cascante, D. The influence of self-efficacy beliefs in the academic performance of Latina/o Students in the United States: A systematic literature review (2018) Hispanic Journal of Behavioral Sciences, 40.
- Mathieu, J. E., Taylor, S. R. Clarifying conditions and decision points for mediational type inferences in organizational behavior (2006) Journal of Organizational Behavior, 27 (8), pp. 1031-1056.
- McKay, M. T., Dempster, M., Byrne, D. G. An examination of the relationship between selfefficacy and stress in adolescents: the role of gender and self-esteem (2014) Journal of Youth Studies, 17 (9), pp. 1131-1151.
- (2015) MOOC: Massive Open Online Course, Putrajaya: MOE
- (2017) Statistics for Higher Education 2017-Chapter 2: Public University. Retrieved from
- Nordin, N., Norman, H., Embi, M. A. **Technology Acceptance of Massive Open Online Courses in Malaysia** (2015) Malaysian Journal of Distance Education, 17 (2), pp. 1-16.

 Nordin, N., Norman, H., Embi, M. A., Mansor, A. Z., Idris, F. Factors for development of learning content and task for MOOCs in an Asian context

(2016) International Education Studies, 9 (5).

Ong, C. S., Lai, J. Y.

Gender differences in perceptions and relationships among dominants of e-learning acceptance

(2006) Computers in Human Behavior, 22 (5), pp. 816-829.

• Plake, B. S., Wise, L. L.

What is the role and importance of the revised AERA, APA, NCME standards for educational and psychological testing?

(2014) Educational Measurement: Issues and Practice, 33 (4), pp. 4-12.

• Pilli, O., Admiraal, W.

Students' Learning Outcomes in Massive Open Online Courses (MOOCs): Some **Suggestions for Course Design** 

(2017) Journal of Higher Education/Yuksekogretim Dergisi, 7 (1), pp. 46-71.

Rodriguez, B. P., Armellini, A.

Developing self-efficacy through a massive open online course on study skills (2017) Open Praxis, 9 (3), pp. 335-343.

- Rose Alinda, A., Syed Norris, H., Marlia, P., Siti Hamisah, T. (2017) Redesign Higher Education Towards Industry 4.0, Kuala Lumpur, Malaysia. 23 24 August 2017. Retrieved from
- · Sailin, S. N., Mahmor, N. A. Improving student teachers' digital pedagogy through meaningful learning activities (2018) Malaysian Journal of Learning and Instruction, 15 (2), pp. 143-173.
- Salkind, N. J. (2018) Exploring research, (9th ed). Pearson Education Limited
- Sekaran, U., Bougie, R. (2016) Research methods for business: A skill building approach, New Delhi: John Wiley & Sons
- Selamat, A., Alias, R. A., Hikmi, S. N., Puteh, M., Tapsi, S. M. Higher education 4.0: Current status and readiness in meeting the fourth industrial revolution challenges (2017) Redesigning Higher Education towards Industry, 4, pp. 23-24.
- Siti Salwa, M. S., Norwati, M.

A study of student's general self-efficacy related to gender differences (2013) International Journal of Informative and Futuristic Research (IJIFR), 1 (4), pp. 62-67.

- Spence, J. C., Blanchard, C. M., Clark, M., Plotnikoff, R. C., Storey, K. E., McCargar, L. The role of self-efficacy in explaining gender differences in physical activity among adolescents: A multilevel analysis (2010) Journal of Physical Activity and Health, 7 (2), pp. 176-183.
- Sun, J. C.-Y., Yu, S.-J., Lin, S. S. J., Tseng, S.-S. The mediating effect of anti-phishing selfefficacy between college students' internet self-efficacy and anti-phishing behavior and gender difference (2016) Computers in Human Behavior, 59, pp. 249-257.

Tarhini, A., Hone, K., Liu, X.

The effects of individual differences on e-learning users' behaviour in developing countries: A structural equation model

(2014) Computers in Human Behavior, 41, pp. 153-163.

• Tsai, M. J., Tsai, C. C.

Information searching strategies in Web-based science learning: The role of Internet self-efficacy

(2003) Innovations in Education and Teaching International, 40 (1), p. 4350.

- Valencia-Vallejo, N., Lopez-Vargas, O., Sanabria-Rodriguez, L. Self-Efficacy in computerbased learning environments: A bibliometric analysis (2016) Psychology, 7, pp. 1839-1857.
- Velu, J., Nordin, M. S.

Psychometric analysis of lecturers' self-efficacy instrument. Research and **Development in Higher Education** 

(2011) 34th HERDSA International Conference 4-7 July 2011, Paper presented at Radisson Resort, Gold Coast, Australia

Velu, J., Nordin, M. S.

**Evaluating measurement model of lecturers' self-efficacy** 

(2011) the International Conference on Management and Service Science. Paper presented at 28-29 May 2011, Bangkok, Thailand

· Wang, Y., Baker, R.

Content or platform: Why do students complete MOOCs

(2015) MERLOT Journal of Online Learning and Teaching, 11 (1), pp. 17-30.

 Wang, J., Wang, X. (2012) Structural equation modeling: Applications using MPLUS, John Wiley & Sons

Wu, J. Y.

Gender differences in online reading engagement, metacognitive strategies, navigation skills and reading literacy

(2014) Journal of Computer Assisted Learning, 30 (3), pp. 252-271.

Young, S.

(2015) Gender differences in academic outcomes: The role of self-efficacy and racial identity,

(Doctoral Dissertation, Washington State University). Retrieved from

Yunianta, A., Yusof, N., Othman, M. S., Octaviani, D.

Analysis and categorization of elearning activities based on meaningful learning characteristics

(2012) International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering, 6 (9), pp. 2430-2435.

**Correspondence Address** 

Ghazali N.; Faculty of Educational Studies, Selangor, Malaysia; email: alezg@upm.edu.my

Publisher: UiTM Press

ISSN: 18237797

Language of Original Document: English Abbreviated Source Title: Asian J. Univ. Educ.

2-s2.0-85145911375 **Document Type:** Article Publication Stage: Final Source: Scopus



Copyright © 2023 Elsevier B.V. All rights reserved. Scopus® is a registered trademark of Elsevier B.V.

**RELX** Group™