

Psychosocial Predictors of Islamic Education Teachers' Interest in Implementing Deep Learning: An Application of Social Cognitive Career Theory

Abdul Hakim¹, Amirudin², Abdul Kosim³, Mohd. Sobri Bin Ellias⁴

^{1,2,3}Universitas Singaperbangsa Karawang, Indonesia

⁴Universitas Sains Islam Malaysia, Malaysia

ARTICLE INFO	ABSTRACT
Article History: Received: December 31, 2025 Revised: June 25, 2026 Accepted: June 25, 2026 Keywords: deep learning; teacher interest; islamic education; social cognitive career theory; <i>madrasah aliyah</i>	Implementing deep learning in Islamic education requires teachers who are willing to adopt innovative pedagogical approaches. This study examines the relationships among self-efficacy, outcome expectations, environmental support, and Islamic Education teachers' interest in implementing deep learning, based on Social Cognitive Career Theory (SCCT). A quantitative cross-sectional study was conducted on 29 Islamic Religious Education (IRE) teachers from <i>Madrasah Aliyah</i> in Ponorogo Regency, Indonesia, using purposive sampling. Data were collected through an online questionnaire and analyzed using descriptive statistics and univariable binary logistic regression. The results showed that self-efficacy (OR = 0,100; 95% CI: 0,018-0,556; p = 0,009), outcome expectations (OR = 0,030; 95% CI: 0,003–0,308; p = 0,003), and environmental support (OR = 0,148; 95% CI: 0,029–0,759; p = 0,022) were significantly related to teachers' interest in implementing deep learning. Teachers with positive self-efficacy, positive outcome expectancy, and high environmental support were more likely to be interested in implementing deep learning. These findings highlight the importance of strengthening teachers' psychosocial resources to support educational innovation in <i>Madrasah Aliyah</i> .

Corresponding Author:

Abdul Hakim

Email: abdul.hakim@fai.unsika.ac.id

How to Cite:

Abdul Hakim, Amirudin, Abdul Kosim, Moh. Sobri Bin Ellias. "Psychosocial Predictors of Islamic Education Teachers' Interest in Implementing Deep Learning: An Application of Social Cognitive Career Theory." *Cendekia: Jurnal Kependidikan dan Kemasyarakatan* 24, No. 1 (2026): 115-130. <https://doi.org/10.21154/cendekia.v24i1.13008>

INTRODUCTION

The 21st-century learning approach demands a paradigm shift toward learning that emphasizes in-depth understanding, active engagement, and critical and reflective thinking skills. One emerging approach is deep learning, a transformative approach that encourages students to understand concepts meaningfully through their connections to real-life contexts and the integration of cognitive, affective, and social aspects.¹ In contrast to surface learning, which is oriented towards memorization, deep learning focuses on conceptual understanding, knowledge transfer, and higher-order thinking skills.² The term deep learning in this research refers to a pedagogical approach that emphasizes meaningful learning, reflection, and the application of knowledge in real-world contexts,³ rather than deep learning in the field of artificial intelligence, which is a machine learning technique based on artificial neural networks.⁴

Philosophically, the deep learning approach aligns with the epistemology of Islamic education through the concepts of *tafakkur* and *tadabbur*. In the Islamic educational tradition, learning is not only about acquiring knowledge but also about understanding meaning, contemplating wisdom, and internalizing divine values. *Tafakkur* emphasizes the process of critical, in-depth thinking, while *tadabbur* focuses on the contemplation of revelation and the realities of life to produce meaningful understanding.⁵ The Qur'an also encourages humans to think and reflect through the expressions *afalā tatafakkarūn* and *afalā yatadabbarūna* as stated in Q.S. *Al-A'raf* [7]:184 and Q.S. *Muhammad* [47]:24.⁶ This shows that the implementation of deep learning in IRE learning is not only oriented towards mastering knowledge but also towards reflection (*tafakkur*) and the internalization of values in character formation.⁷

The implementation of deep learning in Indonesia is increasingly relevant in line with curriculum transformation and demands for improved learning quality. Its success depends not only on policies and facilities but also on teachers' psychological and professional readiness as key actors in creating meaningful learning experiences.⁸ IRE teachers, especially

¹ Muh Dliyaul Haq and Nova Tri Prasetyo, "Deep Learning Sebagai Pendekatan Transformasional Dalam Pendidikan : Sebuah Tinjauan Literatur," *Jurnal Studi Guru Dan Pembelajaran* 8, no. 3 (2025): 1826–1842, <https://doi.org/10.30605/jsgp.8.3.2025.7021>.

² Desirre Mae P. Gabut et al., "Comparing Surface and Deep Learning Strategies and Their Relationship to High School Students' Academic Performance in Science," *European Journal of Educational Research* 15, no. 1 (2025): 7199–7210, <https://doi.org/10.12973/eu-jer.15.1.199>.

³ Stylianos Mystakidis, "Deep Meaningful Learning," *Encyclopedia* 1, no. 3 (2021): 988–97, <https://doi.org/10.3390/encyclopedia1030075>.

⁴ Tala Talaei Khoei, Hadjar Ould Slimane, and Naima Kaabouch, "Deep Learning: Systematic Review, Models, Challenges, and Research Directions," *Neural Computing and Applications* 35, no. 31 (2023): 23103–23124, <https://doi.org/10.1007/s00521-023-08957-4>.

⁵ Tengku Husna Tengku Jamil, Hasanah Abd Khafidz, and Khazri Osman, "Da'wah Through Thinking Skills According to The Perspective of The Quran," *'Abqari Journal* 24, no. 1 (2021): 20–28, <https://doi.org/10.33102/abqari.vol24no1.289>.

⁶ Abdullah bin Mahmud Fajjal, "The Quranic Terms Denoting Reflection: A Contextual Study," *Arts for Linguistic & Literary Studies* 7, no. 4 (2025): 384–403, <https://doi.org/10.53286/arts.v7i4.2884>.

⁷ Bambang Suryadi et al., "Deep Learning as a New Paradigm in Islamic Religious Education in Madrasahs: A Literature Review," *IQRO: Journal of Islamic Education* 9, no. 1 (2026): 244–59, <https://doi.org/10.24256/iqro.v9i1.10012>.

⁸ Muh Fitrah et al., "Are Teachers Ready to Adopt Deep Learning Pedagogy? The Role of Technology and 21st-Century Competencies Amid Educational Policy Reform," *Education Sciences* 15, no. 10 (2025): 1–19,

in madrasas, play a strategic role in developing students' cognitive, affective, and character strengths. However, IRE learning is still dominated by a normative-textual approach, thus not fully encouraging contextual and reflective learning.^{9,10} However, Islamic values align with the principles of deep learning, which emphasize *tafakkur*, *tadabbur*, and contextual meaning in the learning process.¹¹ The implementation of deep learning by IRE teachers is influenced by professional interest, a factor that encourages continued engagement in learning innovation.¹² Teachers with a strong interest tend to be more open to change, consistently explore new approaches, and continuously reflect on their learning practices as part of their professional development.¹³

Social Cognitive Career Theory (SCCT), developed by Lent, Brown, and Hackett (1994), provides a theoretical framework for understanding how individual interests are shaped by the interaction of personal and contextual factors. Learning experiences shape self-efficacy and outcome expectations: self-efficacy reflects an individual's belief in their abilities, while outcome expectations relate to the perceived benefits of an activity. Both constructs shape interests, which subsequently influence goals, action choices, and behavioral persistence. This process is also influenced by environmental supports and barriers, which can strengthen or weaken the relationships among variables.^{14,15}

<https://doi.org/10.3390/educsci15101344>.

⁹ Faridatul Jannah, Umar Manshur, and Ach Rizquha, "Deconstructing Dogmatic Narratives : An Effort to Recontextualize Islamic Education Material for the Critical Generation," *Jurnal Islam Nusantara* 09, no. 1 (2025): 43–56, <https://doi.org/10.33852/jurnalnu.v9i1.601>.

¹⁰ Amak Fadholi and Nur Wahidah, "Efektivitas Pendekatan Kontekstual Dalam Pembelajaran Pai: Analisis Literatur Terhadap Tantangan Era Digital," *An-Nadwah: Journal Research on Islamic Education* 1, no. 01 (2025): 39–49, <https://doi.org/10.62097/annadwah.v1i01.2130>.

¹¹ Mo'tasim Mo'tasim et al., "Integrating Islamic Epistemology, Cultural Context, and Deep Learning for Multicultural Islamic Education: A Thematic Literature Review," *FIKROTUNA: Jurnal Pendidikan Dan Manajemen Islam* 14, no. 2 (2025): 316–335, <https://doi.org/10.32806/jf.v14i2.1232>.

¹² Laura Kehle and Detlef Urhahne, "Interest and Effort in Learning and Performance," *British Journal of Educational Psychology*, 2025, 1–19, <https://doi.org/10.1111/bjep.70040>.

¹³ Andrea Kottmann, Kim Schildkamp, and Barend van der Meulen, "Determinants of the Innovation Behaviour of Teachers in Higher Education," *Innovative Higher Education* 49, no. 2 (2024): 397–418, <https://doi.org/10.1007/s10755-023-09689-y>.

¹⁴ Robert W. Lent, Steven D. Brown, and Gail Hackett, "Toward a Unifying Social Cognitive Theory of Career and Academic Interest, Choice, and Performance," *Journal of Vocational Behavior* 45, no. 1 (1994): 79–122, <https://doi.org/10.1006/jvbe.1994.1027>.

¹⁵ Nilma Zola, A. Muri Yusuf, and Firman Firman, "Konsep Social Cognitive Career Theory," *JRTI (Jurnal Riset Tindakan Indonesia)* 7, no. 1 (2022): 24–28, <https://doi.org/10.29210/30031454000>.

SCCT in education explains that self-efficacy, outcome expectations, and environmental support influence teachers' interest in implementing deep learning.

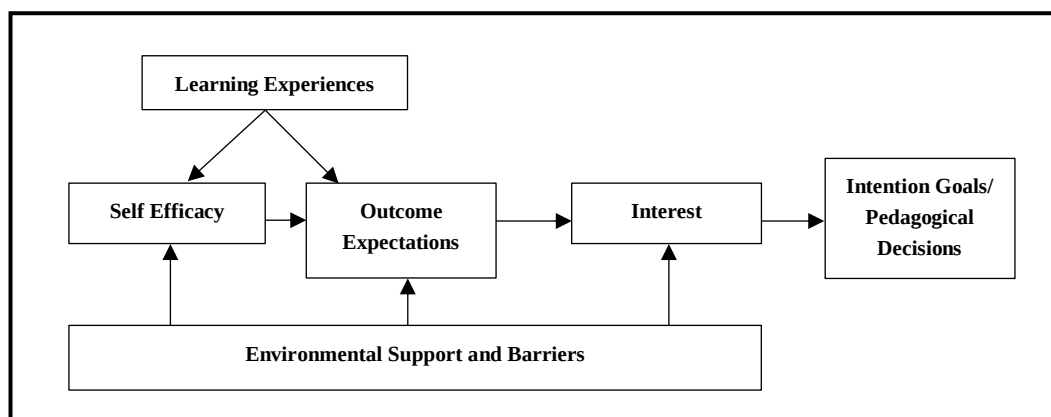


Figure 1. Adaptation of SCCT in Lent, Brown and Hackett (1994) in the Analysis of IRE Teachers' Interests in Deep Learning at *Madrasah Aliyah*

This chart shows that IRE MA teachers' interest in implementing deep learning is shaped through learning experiences that influence self-efficacy and outcome expectations, and are influenced by environmental support and barriers. This interest then drives teachers' decisions to implement deep learning. In Ponorogo Regency, the implementation of this approach still faces challenges, including a gap between teachers' technological competencies and the demands of learning innovation. Furthermore, the IRE Section (PAIS) has focused on promoting deep learning at the IRE level across high school and vocational schools.¹⁶

Previous research has identified various factors influencing the adoption of learning innovations, such as attitudes toward change, perceived ease of use, institutional support, and professional competence.^{17,18} However, most of these studies have focused on technological aspects or educational policy, while studies specifically examining teacher interest within the psychological-career framework of IRE teachers are still relatively limited. Various studies have also shown that the adoption of learning innovations is influenced by psychological and contextual factors such as perceived benefits, self-efficacy, and environmental support.^{19,20} Other studies have also shown that self-efficacy influences the

¹⁶ Kemenag Kabupaten Ponorogo, "Workshop Pembelajaran Mendalam (Deep Learning) Bagi Guru PAI SMA/SMK Se-Kabupaten Ponorogo Berlangsung Inspiratif Di SMAN 1 Ponorogo!," Kementerian Agama Kabupaten Ponorogo, 2025, <https://kemenagponorogo.id/workshop-pembelajaran-mendalam-deep-learning-bagi-guru-pai-sma-smk-se-kabupaten-ponorogo-berlangsung-inspiratif-di-sman-1-ponorogo/>.

¹⁷ Muhammad Sofwan et al., "Factors Affecting Teachers' Behavior of Innovative Teaching with Technology: Structural Equation Modelling," *Sustainability (Switzerland)* 16, no. 19 (2024): 1–12, <https://doi.org/10.3390/su16198496>.

¹⁸ Areen Hazzan-Bishara, Ofrit Kol, and Shalom Levy, "The Factors Affecting Teachers' Adoption of AI Technologies: A Unified Model of External and Internal Determinants," *Education and Information Technologies* 30 (2025): 15043–15069, <https://doi.org/10.1007/s10639-025-13393-z>.

¹⁹ Ronny Scherer, Fazilat Siddiq, and Jo Tondeur, "The Technology Acceptance Model (TAM): A Meta-Analytic Structural Equation Modeling Approach to Explaining Teachers' Adoption of Digital Technology in Education," *Computers and Education* 128 (2019): 13–35, <https://doi.org/10.1016/j.compedu.2018.09.009>.

²⁰ Selcuk Dogan, Nihan Agacli Dogan, and Ismail Celik, "Teachers' Skills to Integrate Technology in

adoption of innovative learning practices and readiness for pedagogical change.^{21,22} However, most studies still focus on the general education context and examine individual and environmental factors separately, thereby failing to provide a comprehensive understanding of the factors influencing IRE teachers' interest in implementing a deep learning approach. Studies that explicitly apply SCCT to examine teachers' interest in Islamic education and madrasas remain limited. Santoso's (2025) research on the integration of deep learning in the Independent Curriculum in IRE learning in madrasas²³ has not examined the psychological and contextual factors that shape teacher interest. This research gap underscores the need for empirical studies that link deep learning to the SCCT framework to identify factors predicting IRE teachers' interest.

Based on the above description, this study aims to analyze the relationships among self-efficacy, outcome expectations, environmental support, and IRE teachers' interest in implementing deep learning, using SCCT as a conceptual foundation. This study is expected to enrich understanding of the psychosocial predictors of teachers' professional interest while providing practical implications for developing policies and programs to improve teachers' capacity to support the implementation of deep learning in MA.

RESEARCH METHOD

This study used a quantitative, survey-based approach to analyze factors related to IRE teachers' interest in implementing deep learning based on the SCCT framework. The subjects were MA teachers who taught *Aqidah Akhlak*, *Al-Qur'an Hadith*, *Fiqh*, and Islamic Cultural History. The sample was selected using a purposive sampling technique, with inclusion criteria of IRE teachers who actively teach at the MA in Ponorogo Regency and are willing to participate in the study.²⁴ The diversity of geographical contexts was achieved by distributing the study across 13 sub-districts for the MA. By the end of the data collection period, 29 IRE teachers from nine sub-districts had completed the questionnaire completely and became research respondents. Data collection was carried out from August to November 2025 using an online questionnaire via Google Forms.

The research instrument was a closed-ended questionnaire consisting of 16 items to measure the four main constructs of SCCT, namely self-efficacy, outcome expectations, environmental support, and teacher interest in implementing deep learning, as well as four questions regarding respondent characteristics. Before being used, the instrument had undergone validity testing by examining the correlation of items to the total score and the

Education: Two Path Models Explaining Instructional and Application Software Use," *Education and Information Technologies* 26, no. 1 (2021): 1311–1332, <https://doi.org/10.1007/s10639-020-10310-4>.

²¹ Xinyan Li, Xiaoge Pei, and Jing Zhao, "Intrinsic Motivation and Self-Efficacy as Pathways to Innovative Teaching: A Mixed-Methods Study of Faculty in Chinese Higher Education," *BMC Psychology* 13, no. 859 (2025): 1–21, <https://doi.org/10.1186/s40359-025-03177-y>.

²² Hava E. Vidergor, "The Effect of Teachers' Self- Innovativeness on Accountability, Distance Learning Self-Efficacy, and Teaching Practices," *Computers and Education* 199, no. 104777 (2023): 1–14, <https://doi.org/10.1016/j.compedu.2023.104777>.

²³ Hidayat Edi Santoso, "Integrasi Teknologi Deep Learning Dalam Pembelajaran Pendidikan Agama Islam (PAI) Di Era Digital," *Jurnal Manajemen Pendidikan Dan Ilmu Sosial* 6, no. 2 (2025): 1476–1483, <https://doi.org/10.38035/jmpis.v6i2.4041>.

²⁴ Omid Tajik, Jawad Golzar, and Shagofah Noor, "Purposive Sampling," *International Journal of Education & Language Studies* 2, no. 2 (2024): 1–9, <https://doi.org/10.4135/9781412963909.n349>.

reliability of the instrument using the Cronbach's Alpha coefficient on 10 IRE teachers from two MA with similar characteristics. Data analysis was carried out in stages: univariate analyses to describe the characteristics of respondents and the distribution of research variables, followed by simple binary logistic regression to analyze the relationship between each predictor and IRE teachers' interest in implementing deep learning. The results of the analysis are presented as odds ratios (OR), 95% confidence intervals (95% CI), and significance values.

RESULT AND DISCUSSION

Quality of Research Instruments and Data Characteristics

The results of the instrument quality test indicate that the questionnaire used in this study has adequate validity and reliability. All items in the variables of self-efficacy, outcome expectations, and environmental support have significant item-total correlations ($p < 0,05$), thus indicating validity. In addition, all variables have a Cronbach's alpha value $> 0,60$ indicating that the instrument has acceptable internal consistency and is suitable for use in exploratory research.²⁵ For the variable of interest, one statement did not meet the validity and reliability criteria, so the construct was revised before the main data collection. This finding confirms that the instrument must meet validity and reliability criteria before being used to analyze relationships between variables.²⁶

Before categorization and analysis, each variable was tested for normality to determine the appropriate data grouping method.

Table 1. Data Normality Test Results

Variables	Significance Value	Distribution
Self-Efficacy	0,002	Abnormal
Outcome Expectations	0,000	Abnormal
Environmental Support	0,000	Abnormal
Interest	0,017	Abnormal

The results of the data normality test indicate that the variables self-efficacy, outcome expectations, environmental support, and teacher interest in implementing deep learning are not normally distributed ($p < 0,05$). Based on these results, the category of each variable was determined using the median value as the dividing point between the low and high categories. Using the median to categorize non-normal data is considered more representative because it is not affected by extreme values and reflects the central tendency of the data distribution.²⁷

²⁵ Joseph F. Hair Jr et al., *Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R* (Switzerland: Springer, 2021), <https://doi.org/10.1007/978-3-030-80519-7>.

²⁶ Adeola Samuel Adebisuyi, Olubusayo Foluso Adebisuyi, and Oluwaseun Kolade, "Development and Validation of Sources of Entrepreneurial Self-Efficacy and Outcome Expectations: A Social Cognitive Career Theory Perspective," *International Journal of Management Education* 20, no. 2 (2022): 1–11, <https://doi.org/10.1016/j.ijme.2021.100572>.

²⁷ Huda M. Alshanbari, "A Novel Robust Transformation Approach to Finite Population Median Estimation Using Monte Carlo Simulation and Empirical Data," *Axioms* 14, no. 737 (2025): 1–19, <https://doi.org/10.3390/axioms14100737>.

Characteristics of IRE Teachers in *Madrasah Aliyah* of Ponorogo Regency

The characteristics of IRE teachers at MA are presented to provide a general overview of the respondents' backgrounds as context for interpreting the research results.

Table 2. Demographic and Professional Profile of IRE Teachers at *Madrasah Aliyah* in Ponorogo Regency

Variables	Frequency	Percentage
Subdistrict		
1. Ponorogo	3	10,3
2. Siman	3	10,3
3. Jetis	1	3,4
4. Sawoo	7	24,1
5. Bungkal	5	17,2
6. Slahung	1	3,4
7. Balong	2	6,9
8. Sumoroto	3	10,3
9. Sampung	4	13,8
Subjects		
- <i>Fiqh</i>	8	27,6
- <i>Aqidah Akhlaq</i>	8	27,6
- <i>Qur'an Hadith</i>	6	20,7
- Islamic Cultural History	7	24,1
Last education		
- Bachelor	22	75,9
- Master	7	24,1
Employment Status		
- Civil Servant	2	6,9
- Private	27	93,1

Table 2 presents the demographic and professional profile of the 29 Islamic Religious Education (IRE) teachers who participated in this study. The respondents were distributed across nine sub-districts in Ponorogo Regency, with the largest proportion coming from Sawoo (24.1%), followed by Bungkal (17.2%) and Sampung (13.8%), while the remaining participants were relatively evenly distributed across the other sub-districts. Regarding teaching assignments, the respondents represented all four IRE subject areas, namely *Fiqh* (27.6%), *Aqidah-Akhlak* (27.6%), *Islamic Cultural History* (24.1%), and *Qur'an and Hadith* (20.7%), indicating that the sample adequately reflects the diversity of Islamic Religious Education disciplines taught at the madrasah level.

Regarding educational background, most respondents held a bachelor's degree (75.9%), while 24.1% had completed a master's degree. Regarding employment status, the vast majority of teachers worked in private madrasas (93.1%), whereas only 6.9% were civil servants. These findings indicate that the respondents predominantly represent privately managed Islamic senior secondary schools, which continue to play a central role in providing Islamic education in Ponorogo Regency. This profile also suggests that many teachers may

experience relatively limited access to professional development opportunities, institutional resources, and government-supported training compared with their counterparts in public madrasas. Such conditions may influence teachers' confidence and motivation to adopt innovative instructional approaches, including deep learning. This finding aligns with previous research that suggests that policy support, facilities, and professional development play a significant role in shaping teachers' interest and readiness for learning innovation.²⁸

The Interest of IRE Teachers at *Madrasah Aliyah* in Deep Learning from a Psychosocial Perspective

The frequency distributions of each variable are presented to provide a general overview and serve as a basis for analyzing the relationships between variables in the next stage.

Table 3. Distribution of Psychosocial Factors in the Application of Deep Learning

Variables	Frequency	Percentage
Self-Efficacy		
Negative	15	51,7
Positive	14	48,3
Outcome Expectations		
Negative	19	65,5
Positive	10	34,5
Environmental Support		
Low	16	55,2
High	13	44,8
Interest		
Not Interested	16	55,2
Interested	13	44,8

Based on Table 3, the majority of IRE teachers showed negative self-efficacy (51.7%), negative outcome expectations (65.5%), and low environmental support (55.2%) towards implementing deep learning. In addition, 55.2% of respondents were in the not interested in implementing deep learning category. These findings indicate that the majority of IRE teachers do not have strong confidence in their abilities, do not fully believe in the benefits of implementing deep learning, and still face limited environmental support, which ultimately contributes to low interest in adopting this learning approach.

The low self-efficacy of IRE teachers can be understood as a reflection of limited experience in implementing innovative learning, minimal relevant pedagogical training, and a lack of professional support. Bandura (1997), as cited in Li, Pei, and Zhao (2025), emphasized that self-efficacy develops through successful experiences, social learning, and environmental support.²⁹ Therefore, limited opportunities to practice deep learning

²⁸ Maram Meccawy, "Teachers' Prospective Attitudes towards the Adoption of Extended Reality Technologies in the Classroom: Interests and Concerns," *Smart Learning Environments* 10, no. 36 (2023): 1–20, <https://doi.org/10.1186/s40561-023-00256-8>.

²⁹ Li, Pei, and Zhao, "Intrinsic Motivation and Self-Efficacy as Pathways to Innovative Teaching: A

approaches continuously can weaken teachers' confidence in their abilities.³⁰ Outcome expectations are a key factor influencing the formation of interest in a professional activity.³¹ Expectations of positive outcomes and perceived professional value play a significant role in shaping teachers' motivation and interest as educators.³² When perceived benefits are not commensurate with the effort required, interest in adopting new approaches tends to decline. This may be influenced by the perception that deep learning requires additional time, energy, and competency, yet lacks the necessary institutional support or recognition. These findings align with Sapkota, Gamlem, and Vattoy (2023), who stated that perceived benefits and practical barriers encountered influence teacher participation in professional development.³³ Low environmental support indicates that IRE teachers still face structural barriers in implementing deep learning. An unsupportive work environment can reduce teachers' motivation and interest in innovation. Cai and Tang (2023) emphasized that the successful adoption of learning innovations is influenced by school culture and institutional support, which can increase teacher motivation, commitment, and readiness.³⁴ Furthermore, limited resources and internal policies continue to be obstacles to the implementation of innovative learning.

IRE teachers' low interest in deep learning is a consequence of low self-efficacy, low outcome expectations, and low environmental support. Without positive experiences and adequate environmental support, teachers' interest in innovation tends to wane.³⁵ This situation suggests that these three factors, together, can hinder IRE teachers' professional interest in implementing deep learning.

Based on the distribution of each variable, the analysis continued with simple logistic regression to identify the relationship between psychosocial factors and IRE teachers' interest in implementing deep learning at MA.

Table 4. The Relationship between Psychosocial Factors and Interest

Variabel	OR	95% CI	p-value
Mixed-Methods Study of Faculty in Chinese Higher Education.”			
³⁰ Said Ashlan and Rahmat Fajri, “The Impact of Self-Efficacy and Teaching Innovation on Teacher Performance,” <i>Journal of Pedagogy and Education Science (JPES)</i> 4, no. 2 (2025): 274–287, https://doi.org/10.56741/IISTR.jpes.00954 .			
³¹ Nursyawalina Sulong and Mastura Mahfar, “The Influence of Career Outcome Expectations and Career Interests on Career Readiness among Secondary School Students in Johor, Malaysia,” <i>International Journal of Research And Innovation in Applied Science (IJRIAS)</i> 10, no. 10 (2025): 1587–1599, https://doi.org/10.51584/IJRIAS .			
³² Clara Kuhn, Gerda Hagenauer, and Alexander Gröschner, “‘Because You Always Learn Something New Yourself’ An Expectancy-Value-Theory Perspective on Mentor Teachers’ Initial Motivations,” <i>Teaching and Teacher Education</i> 113, no. 103659 (2022): 1–12, https://doi.org/10.1016/j.tate.2022.103659 .			
³³ Tara Sapkota, Siv Gamlem, and Kim Daniel Vattoy, “Lower-Secondary School Teachers’ Perceptions of Professional Development in University-School Collaboration,” <i>Teaching and Teacher Education</i> 135, no. 104312 (2023): 1–12, https://doi.org/10.1016/j.tate.2023.104312 .			
³⁴ Yonghong Cai and Runjia Tang, “School Support for Teacher Innovation: The Role of Basic Psychological Need Satisfaction,” <i>Thinking Skills and Creativity</i> 45, no. 101096 (2022): 1–17, https://doi.org/10.1016/j.tsc.2022.101096 .			
³⁵ Chao Lu, Zeqing Xu, and Qinrui Tian, “Teachers’ Well-Being and Innovative Work Behavior: A Moderated Mediation Model of Perceived Insider Status and Principal Authentic Leadership,” <i>Behavioral Sciences</i> 15, no. 10 (2025): 1–18, https://doi.org/10.3390/bs15101419 .			

Self-Efficacy	0,100	0,018-0,556	0,009
Outcome Expectations	0,030	0,003-0,308	0,003
Environmental Support	0,148	0,029-0,759	0,022

Bivariate analysis using simple logistic regression with the enter method showed that self-efficacy, outcome expectations, and environmental support were significantly associated with IRE teachers' interest in implementing deep learning. This finding supports the main assumption of SCCT that an individual's beliefs influence professional interest in their abilities, outcome expectations, and environmental support for the implementation of learning innovations.³⁶

Teachers with negative self-efficacy were 0,10 times more likely to be interested in implementing deep learning compared to teachers with positive self-efficacy (OR = 0,100; 95% CI: 0,018–0,556; $p = 0,009$). The study's findings indicate that teachers with positive self-efficacy are more interested in implementing deep learning than those with negative self-efficacy. This finding aligns with the SCCT framework, which states that self-efficacy is a key determinant of an individual's interest in an activity. Teachers with high confidence in their abilities tend to be more willing to adopt new learning strategies, are more prepared for change, and are more committed to implementing learning innovations.^{37,38} Teachers' confidence in their professional capacity is an important form of psychological capital that encourages readiness and interest in implementing deep learning. The results of this study are supported by various studies showing that teacher self-efficacy is positively related to the acceptance of learning innovations and the use of educational technology. Teachers with high self-efficacy tend to be more motivated, adaptable to change, and ready to implement innovative pedagogical strategies.³⁹ Self-efficacy is also an important predictor of teacher readiness to integrate technology and improve learning effectiveness.⁴⁰

Teachers with negative outcome expectations are 0,03 times more likely to be interested in implementing deep learning than teachers with positive outcome expectations (OR = 0,030; 95% CI: 0,003–0,308; $p = 0,003$). This indicates that teachers who expect positive results are more interested in implementing deep learning than those who expect negative results. Outcome expectations are an individual's belief in the benefits to be gained from an action. Teachers who believe that deep learning can improve the quality of learning, student engagement, and the achievement of educational goals tend to be more interested in implementing it. Conversely, low perceptions of benefits can decrease teacher interest. This

³⁶ Fedi Kurniawan and Erni Harlina Isdiati, "Model Hubungan Self-Esteem Dan Outcome Expectation Dalam Memprediksi Minat Mengajar: Pendekatan Social Cognitive Career Theory," *Nusantara: Jurnal Pendidikan Indonesia* 5, no. 4 (2025): 1091–1106, <https://doi.org/10.62491/njpi.2025.v5i4-19>.

³⁷ Albert Bandura, *Social Foundations of Thought and Action: A Social Cognitive Theory* (Amerika: Prentice Hall, 1986).

³⁸ Lent, Brown, and Hackett, "Toward a Unifying Social Cognitive Theory of Career and Academic Interest, Choice, and Performance."

³⁹ Li, Pei, and Zhao, "Intrinsic Motivation and Self-Efficacy as Pathways to Innovative Teaching: A Mixed-Methods Study of Faculty in Chinese Higher Education."

⁴⁰ Jennifer Paetsch, Sebastian Franz, and Ilka Wolter, "Changes in Early Career Teachers' Technology Use for Teaching: The Roles of Teacher Self-Efficacy, ICT Literacy, and Experience during COVID-19 School Closure," *Teaching and Teacher Education* 135, no. 104318 (2023): 1–11, <https://doi.org/10.1016/j.tate.2023.104318>.

aligns with Lent, Brown, and Hackett (1994), who stated that outcome expectations, along with self-efficacy, are the main determinants of individual interests and behavior.⁴¹ The Theory of Planned Behavior explains that beliefs about the benefits of a behavior shape an individual's attitude and intention to engage in it.⁴² Teachers with positive perceptions of the benefits of deep learning are an important factor in encouraging the acceptance and implementation of learning innovations.⁴³

Teachers with low environmental support have 0,14 times the odds of being interested in implementing deep learning compared to teachers with high environmental support (OR = 0,148; 95% CI: 0,029–0,759; $p = 0,022$). These findings indicate that teachers who receive high environmental support are more interested in implementing deep learning than those who receive low environmental support. From the SCCT perspective, environmental support acts as a contextual affordance that can facilitate or hinder the development of individual interest. Support in the form of school policies, madrasah leadership, teacher collaboration, availability of facilities, and access to training can increase teachers' interest in adopting learning innovations. Conversely, limited institutional support and a less conducive work environment have the potential to reduce this interest. According to Lent, Brown, and Hackett (1994), environmental factors also interact with self-efficacy and outcome expectations in shaping individual interest and behavior.⁴⁴ The results of this study align with various studies that confirm that environmental support is a crucial factor in encouraging the acceptance of educational innovation. Research by Li, Cai, and Tang (2023) indicates that the successful implementation of educational change is influenced by organizational capacity, leadership, and the systemic support provided to teachers.⁴⁵ Other research also shows that organizational support and a positive school climate contribute to increasing teacher readiness to adopt innovative learning practices.⁴⁶ To implement deep learning, teachers require not only individual competencies but also a work environment that supports collaboration, professional development, and learning innovation.

CONCLUSION

This study shows that psychosocial factors constructed in SCCT, namely self-efficacy, outcome expectations, and environmental support, have a significant relationship with IRE teachers' interest in implementing deep learning. This finding supports the SCCT framework,

⁴¹ Lent, Brown, and Hackett, "Toward a Unifying Social Cognitive Theory of Career and Academic Interest, Choice, and Performance."

⁴² Martin S. Hagger and Kyra Hamilton, "Longitudinal Tests of the Theory of Planned Behaviour: A Meta-Analysis," *European Review of Social Psychology* 35, no. 1 (2024): 198–254, <https://doi.org/10.1080/10463283.2023.2225897>.

⁴³ Jana Patricia M. Valdez et al., "Successful Integration of Technology into Preschool Education: Do Teachers' Self-Efficacy and Outcome Expectations Matter?," *Journal of Research on Technology in Education*, 2025, 1–20, <https://doi.org/10.1080/15391523.2025.2547183>.

⁴⁴ Lent, Brown, and Hackett, "Toward a Unifying Social Cognitive Theory of Career and Academic Interest, Choice, and Performance."

⁴⁵ Yanli Li, Yonghong Cai, and Runjia Tang, "Linking Instructional Leadership and School Support to Teacher Expertise: The Mediating Effect of Teachers' Professional Development Agency," *Sustainability (Switzerland)* 15, no. 4 (2023): 1–17, <https://doi.org/10.3390/su15043440>.

⁴⁶ Yonghong Cai and Runjia Tang, "School Support for Teacher Innovation: Mediating Effects of Teacher Self-Efficacy and Moderating Effects of Trust," *Thinking Skills and Creativity* 41, no. 100854 (2021): 1–15, <https://doi.org/10.1016/j.tsc.2021.100854>.

which posits that personal and contextual factors shape individual interest in a behavior. The implementation of deep learning in MA requires not only teacher competency development, but also strengthening psychological factors and institutional support that encourage continuous learning innovation. Improving the implementation of deep learning requires support through practice-oriented training, professional mentoring, strengthening learning communities, and a conducive work environment. In addition, disseminating good practices and empirical evidence on the benefits of deep learning is needed to strengthen teachers' positive perceptions of the approach. Future research is recommended to involve a larger, more representative sample and to use a longitudinal or mixed-methods design to obtain a more comprehensive understanding of the factors influencing teachers' interest in implementing deep learning.

REFERENCES

- Adebusuyi, Adeola Samuel, Olubusayo Foluso Adebusuyi, and Oluwaseun Kolade. "Development and Validation of Sources of Entrepreneurial Self-Efficacy and Outcome Expectations: A Social Cognitive Career Theory Perspective." *International Journal of Management Education* 20, no. 2 (2022): 1–11. <https://doi.org/10.1016/j.ijme.2021.100572>.
- Alshanbari, Huda M. "A Novel Robust Transformation Approach to Finite Population Median Estimation Using Monte Carlo Simulation and Empirical Data." *Axioms* 14, no. 737 (2025): 1–19. <https://doi.org/10.3390/axioms14100737>.
- Ashlan, Said, and Rahmat Fajri. "The Impact of Self-Efficacy and Teaching Innovation on Teacher Performance." *Journal of Pedagogy and Education Science (JPES)* 4, no. 2 (2025): 274–87. <https://doi.org/10.56741/IISTR.jpes.00954>.
- Bandura, Albert. *Social Foundations of Thought and Action: A Social Cognitive Theory*. Amerika: Prentice Hall, 1986.
- Cai, Yonghong, and Runjia Tang. "School Support for Teacher Innovation: Mediating Effects of Teacher Self-Efficacy and Moderating Effects of Trust." *Thinking Skills and Creativity* 41, no. 100854 (2021): 1–15. <https://doi.org/10.1016/j.tsc.2021.100854>.
- . "School Support for Teacher Innovation: The Role of Basic Psychological Need Satisfaction." *Thinking Skills and Creativity* 45, no. 101096 (2022): 1–17. <https://doi.org/10.1016/j.tsc.2022.101096>.
- Dogan, Selcuk, Nihan Agacli Dogan, and Ismail Celik. "Teachers' Skills to Integrate Technology in Education: Two Path Models Explaining Instructional and Application Software Use." *Education and Information Technologies* 26, no. 1 (2021): 1311–32. <https://doi.org/10.1007/s10639-020-10310-4>.
- Fadholi, Amak, and Nur Wahidah. "Efektivitas Pendekatan Kontekstual Dalam Pembelajaran Pai: Analisis Literatur Terhadap Tantangan Era Digital." *An-Nadwah: Journal Research on Islamic Education* 1, no. 01 (2025): 39–49. <https://doi.org/10.62097/annadwah.v1i01.2130>.
- Fajjal, Abdullah bin Mahmoud. "The Quranic Terms Denoting Reflection: A Contextual Study." *Arts for Linguistic & Literary Studies* 7, no. 4 (2025): 384–403. <https://doi.org/10.53286/arts.v7i4.2884>.

- Fitrah, Muh, Anastasia Sofroniou, Novi Yarmanetti, Indriani H. Ismail, Hetty Anggraini, Ita Chairun Nissa, Bakti Widyaningrum, Irul Khotijah, Prabowo Dwi Kurniawan, and Dedi Setiawan. "Are Teachers Ready to Adopt Deep Learning Pedagogy? The Role of Technology and 21st-Century Competencies Amid Educational Policy Reform." *Education Sciences* 15, no. 10 (2025): 1–19. <https://doi.org/10.3390/educsci15101344>.
- Gabut, Desirre Mae P., Mary Erian M. Rojo, Wendy C. Casas, Reynaldo C. Jr. Tondo, Ryan M. Mahilum, and Romel C. Mutya. "Comparing Surface and Deep Learning Strategies and Their Relationship to High School Students' Academic Performance in Science." *European Journal of Educational Research* 15, no. 1 (2025): 7199–7210. <https://doi.org/10.12973/eu-jer.15.1.199>.
- Hagger, Martin S., and Kyra Hamilton. "Longitudinal Tests of the Theory of Planned Behaviour: A Meta-Analysis." *European Review of Social Psychology* 35, no. 1 (2024): 198–254. <https://doi.org/10.1080/10463283.2023.2225897>.
- Haq, Muh Dliyaul, and Nova Tri Prasetyo. "Deep Learning Sebagai Pendekatan Transformatif dalam Pendidikan : Sebuah Tinjauan Literatur." *Jurnal Studi Guru Dan Pembelajaran* 8, no. 3 (2025): 1826–42. <https://doi.org/10.30605/jsgp.8.3.2025.7021>.
- Hazzan-Bishara, Areen, Ofrit Kol, and Shalom Levy. "The Factors Affecting Teachers' Adoption of AI Technologies: A Unified Model of External and Internal Determinants." *Education and Information Technologies* 30 (2025): 15043–69. <https://doi.org/10.1007/s10639-025-13393-z>.
- Jannah, Faridatul, Umar Manshur, and Ach Rizquha. "Deconstructing Dogmatic Narratives : An Effort to Recontextualize Islamic Education Material for the Critical Generation." *Jurnal Islam Nusantara* 09, no. 1 (2025): 43–56. <https://doi.org/10.33852/jurnalnu.v9i1.601>.
- Jr, Joseph F. Hair, G. Tomas M. Hult, Christian M. Ringle, Marko Sarstedt, Nicholas P. Danks, and Soumya Ray. *Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R*. Switzerland: Springer, 2021. <https://doi.org/10.1007/978-3-030-80519-7>.
- Kehle, Laura, and Detlef Urhahne. "Interest and Effort in Learning and Performance." *British Journal of Educational Psychology*, 2025, 1–19. <https://doi.org/10.1111/bjep.70040>.
- Kemenag Kabupaten Ponorogo. "Workshop Pembelajaran Mendalam (Deep Learning) Bagi Guru PAI SMA/SMK Se-Kabupaten Ponorogo Berlangsung Inspiratif Di SMAN 1 Ponorogo!" Kementerian Agama Kabupaten Ponorogo, 2025. <https://kemenagponorogo.id/workshop-pembelajaran-mendalam-deep-learning-bagi-guru-pai-sma-smk-se-kabupaten-ponorogo-berlangsung-inspiratif-di-sman-1-ponorogo/>.
- Kottmann, Andrea, Kim Schildkamp, and Barend van der Meulen. "Determinants of the Innovation Behaviour of Teachers in Higher Education." *Innovative Higher Education* 49, no. 2 (2024): 397–418. <https://doi.org/10.1007/s10755-023-09689-y>.
- Kuhn, Clara, Gerda Hagenauer, and Alexander Gröschner. "Because You Always Learn Something New Yourself! An Expectancy-Value-Theory Perspective on Mentor Teachers' Initial Motivations." *Teaching and Teacher Education* 113, no. 103659 (2022): 1–12. <https://doi.org/10.1016/j.tate.2022.103659>.
- Kurniawan, Fedi, and Erni Harlina Isdiati. "Model Hubungan Self-Esteem Dan Outcome Expectation Dalam Memprediksi Minat Mengajar: Pendekatan Social Cognitive Career

- Theory.” *Nusantara: Jurnal Pendidikan Indonesia* 5, no. 4 (2025): 1091–1106. <https://doi.org/10.62491/njpi.2025.v5i4-19>.
- Lent, Robert W., Steven D. Brown, and Gail Hackett. “Toward a Unifying Social Cognitive Theory of Career and Academic Interest, Choice, and Performance.” *Journal of Vocational Behavior* 45, no. 1 (1994): 79–122. <https://doi.org/10.1006/jvbe.1994.1027>.
- Li, Xinyan, Xiaoge Pei, and Jing Zhao. “Intrinsic Motivation and Self-Efficacy as Pathways to Innovative Teaching: A Mixed-Methods Study of Faculty in Chinese Higher Education.” *BMC Psychology* 13, no. 859 (2025): 1–21. <https://doi.org/10.1186/s40359-025-03177-y>.
- Li, Yanli, Yonghong Cai, and Runjia Tang. “Linking Instructional Leadership and School Support to Teacher Expertise: The Mediating Effect of Teachers’ Professional Development Agency.” *Sustainability (Switzerland)* 15, no. 4 (2023): 1–17. <https://doi.org/10.3390/su15043440>.
- Lu, Chao, Zeqing Xu, and Qinrui Tian. “Teachers’ Well-Being and Innovative Work Behavior: A Moderated Mediation Model of Perceived Insider Status and Principal Authentic Leadership.” *Behavioral Sciences* 15, no. 10 (2025): 1–18. <https://doi.org/10.3390/bs15101419>.
- Meccawy, Maram. “Teachers’ Prospective Attitudes towards the Adoption of Extended Reality Technologies in the Classroom: Interests and Concerns.” *Smart Learning Environments* 10, no. 36 (2023): 1–20. <https://doi.org/10.1186/s40561-023-00256-8>.
- Mo’tasim, Mo’tasim, Sahidi Mustafa, Maksum Maksum, Amar Ma’ruf, and Ellya Verawati. “Integrating Islamic Epistemology, Cultural Context, and Deep Learning for Multicultural Islamic Education: A Thematic Literature Review.” *FIKROTUNA: Jurnal Pendidikan Dan Manajemen Islam* 14, no. 2 (2025): 316–35. <https://doi.org/10.32806/jf.v14i2.1232>.
- Mystakidis, Stylianos. “Deep Meaningful Learning.” *Encyclopedia* 1, no. 3 (2021): 988–97. <https://doi.org/10.3390/encyclopedia1030075>.
- Paetsch, Jennifer, Sebastian Franz, and Ilka Wolter. “Changes in Early Career Teachers’ Technology Use for Teaching: The Roles of Teacher Self-Efficacy, ICT Literacy, and Experience during COVID-19 School Closure.” *Teaching and Teacher Education* 135, no. 104318 (2023): 1–11. <https://doi.org/10.1016/j.tate.2023.104318>.
- Santoso, Hidayat Edi. “Integrasi Teknologi Deep Learning Dalam Pembelajaran Pendidikan Agama Islam (PAI) Di Era Digital.” *Jurnal Manajemen Pendidikan Dan Ilmu Sosial* 6, no. 2 (2025): 1476–83. <https://doi.org/10.38035/jmpis.v6i2.4041>.
- Sapkota, Tara, Siv Gamlem, and Kim Daniel Vattøy. “Lower-Secondary School Teachers’ Perceptions of Professional Development in University-School Collaboration.” *Teaching and Teacher Education* 135, no. 104312 (2023): 1–12. <https://doi.org/10.1016/j.tate.2023.104312>.
- Scherer, Ronny, Fazilat Siddiq, and Jo Tondeur. “The Technology Acceptance Model (TAM): A Meta-Analytic Structural Equation Modeling Approach to Explaining Teachers’ Adoption of Digital Technology in Education.” *Computers and Education* 128 (2019): 13–35. <https://doi.org/10.1016/j.compedu.2018.09.009>.
- Sofwan, Muhammad, Akhmad Habibi, Razaz Waheeb Attar, Turki Mesfer Alqahtani, Sarah A. Alahmari, and Amal Hassan Alhazmi. “Factors Affecting Teachers’ Behavior of

- Innovative Teaching with Technology: Structural Equation Modelling.” *Sustainability (Switzerland)* 16, no. 19 (2024): 1–12. <https://doi.org/10.3390/su16198496>.
- Sulong, Nursyawalina, and Mastura Mahfar. “The Influence of Career Outcome Expectations and Career Interests on Career Readiness among Secondary School Students in Johor, Malaysia.” *International Journal of Research And Innovation in Applied Science (IJRIAS)* 10, no. 10 (2025): 1587–99. <https://doi.org/10.51584/IJRIAS>.
- Suryadi, Bambang, Jenny Lewis, Suprananto, and Eviana Hikamudin. “Deep Learning as a New Paradigm in Islamic Religious Education in Madrasahs : A Literature Review.” *IQRO: Journal of Islamic Education* 9, no. 1 (2026): 244–59. <https://doi.org/10.24256/iqro.v9i1.10012>.
- Tajik, Omid, Jawad Golzar, and Shagofah Noor. “Purposive Sampling.” *International Journal of Education & Language Studies* 2, no. 2 (2024): 1–9. <https://doi.org/10.4135/9781412963909.n349>.
- Talaei Khoei, Tala, Hadjar Ould Slimane, and Naima Kaabouch. “Deep Learning: Systematic Review, Models, Challenges, and Research Directions.” *Neural Computing and Applications* 35, no. 31 (2023): 23103–24. <https://doi.org/10.1007/s00521-023-08957-4>.
- Tengku Jamil, Tengku Husna, Hasanah Abd Khafidz, and Khazri Osman. “Da’wah Through Thinking Skills According to The Perspective of The Quran.” *‘Abqari Journal* 24, no. 1 (2021): 20–28. <https://doi.org/10.33102/abqari.vol24no1.289>.
- Valdez, Jana Patricia M., Jet U. Buenconsejo, Weipeng Yang, Xunyi Lin, and Anika Saxena. “Successful Integration of Technology into Preschool Education: Do Teachers’ Self-Efficacy and Outcome Expectations Matter?” *Journal of Research on Technology in Education*, 2025, 1–20. <https://doi.org/10.1080/15391523.2025.2547183>.
- Vidergor, Hava E. “The Effect of Teachers’ Self- Innovativeness on Accountability, Distance Learning Self-Efficacy, and Teaching Practices.” *Computers and Education* 199, no. 104777 (2023): 1–14. <https://doi.org/10.1016/j.compedu.2023.104777>.
- Zola, Nilma, A. Muri Yusuf, and Firman Firman. “Konsep Social Cognitive Career Theory.” *JRTI (Jurnal Riset Tindakan Indonesia)* 7, no. 1 (2022): 24–28. <https://doi.org/10.29210/30031454000>.

