

The Role of Self-Directed Learning in Mediating the Influence of Teaching Enthusiasm on Professional Identity

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Abstrak: This study aims to explore the role of Self-Directed Learning (SDL) in mediating the influence of Teaching Enthusiasm (TE) on Professional Identity (PI) among students of the Teacher Professional Education Program (PPG) in Indonesia. Using quantitative survey methods and path analysis to analyze the data, this study involved 170 respondents consisting of Professional Education Program (PPG) students at the Faculty of Teacher Training and Education, Universitas Muhammadiyah Surakarta. The results showed that SDL functions as a critical full mediator between Teaching Enthusiasm and Professional Identity formation. SDL allows students to manage their learning process independently, which in turn increases their engagement in learning and strengthens a professional identity that is relevant to current educational demands. A positive learning environment, intrinsic motivation, and support from mentors were found to contribute significantly to fostering SDL as well as the development of Professional Identity. This study highlights the importance of Teaching Enthusiasm and SDL in shaping professional and adaptive educators, who are able to meet the ever-evolving needs of education. These findings are in line with previous theories that state that SDL not only improves students' academic abilities but also strengthens their character and professional attitudes. Thus, the development of SDL should be a primary focus in teacher education curriculum, so that prospective educators can be better prepared to face challenges in the dynamic world of education. This study provides valuable insights for the development of teacher education programs in Indonesia, and emphasizes the need for SDL integration in learning practices to produce high-quality educators.

Kata kunci: Self-Directed Learning, Teaching Enthusiasm, Professional Identity.

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Abstract: Penelitian ini bertujuan untuk mengeksplorasi peran Self-Directed Learning (SDL) dalam memediasi pengaruh Antusiasme Mengajar (AM) terhadap Identitas Profesional (PI) di kalangan mahasiswa Program Pendidikan Profesi Guru (PPG) di Indonesia. Dengan menggunakan metode survei kuantitatif dan analisis jalur untuk menganalisis data, penelitian ini melibatkan 170 responden yang terdiri dari mahasiswa Program Pendidikan Profesi (PPG) di Fakultas Keguruan dan Ilmu Pendidikan, Universitas Muhammadiyah Surakarta. Hasil penelitian menunjukkan bahwa SDL berfungsi sebagai mediator penuh yang penting antara Antusiasme Mengajar dan pembentukan Identitas Profesional. SDL memungkinkan mahasiswa untuk mengelola proses pembelajaran mereka secara mandiri, yang pada gilirannya meningkatkan keterlibatan mereka dalam pembelajaran dan memperkuat identitas profesional yang relevan dengan tuntutan pendidikan saat ini. Lingkungan belajar yang positif, motivasi intrinsik, dan dukungan dari mentor ditemukan berkontribusi secara signifikan untuk membina SDL serta pengembangan Identitas Profesional. Penelitian ini menyoroti pentingnya Antusiasme Mengajar dan SDL dalam membentuk pendidik yang profesional dan adaptif, yang mampu memenuhi kebutuhan pendidikan yang terus berkembang. Temuan ini sejalan dengan teori sebelumnya yang menyatakan bahwa SDL tidak hanya meningkatkan kemampuan akademis siswa tetapi juga memperkuat karakter dan sikap profesional mereka. Dengan demikian, pengembangan SDL harus menjadi fokus utama dalam kurikulum pendidikan guru, sehingga calon pendidik dapat lebih siap menghadapi tantangan dalam dunia pendidikan yang dinamis. Studi ini memberikan wawasan berharga bagi pengembangan program pendidikan guru di Indonesia, dan menekankan perlunya integrasi SDL dalam praktik pembelajaran untuk menghasilkan pendidik berkualitas tinggi.

Keywords: Self-Directed Learning, Antusiasme Mengajar, Professional Identity.

1. Introduction

Professional identity is formed within a complex historical, social, and cultural context, where cultural discourses and narratives play a crucial role in either constraining or enabling professionals to develop their desired identities. Institutional, social, and cultural contexts not only shape how individuals construct professional identities but also create frameworks that can either reinforce or hinder this process. Therefore, understanding professional identity from a multidimensional perspective is essential for professionals to effectively adapt and contribute in ever-changing work environments (Vu et al., 2024).

Professional Identity (PI) refers to how individuals perceive and define themselves within the context of their profession. The theory of professional identity emphasizes that PI is the result of the internalization of values, norms, and practices recognized within a given profession. Professional Identity is shaped through experiences and social interactions, allowing individuals to internalize the characteristics and expectations of their profession. The meaning of PI encompasses the recognition of roles, responsibilities, and objectives associated with the profession, as well as how individuals interact with their professional community (Toubassi et al., 2023). Furthermore, enthusiasm for teaching plays a crucial role in the process of forming an educator's professional identity. Enthusiasm for teaching can not only increase student motivation and the quality of learning but also strengthen educators' emotional continuity and commitment to their profession. Research by Kunter et al. (2011) shows that teachers who are highly enthusiastic about learning tend to develop a stronger professional identity because they are more actively involved in self-development and professional interactions. Therefore, enthusiasm for teaching is a crucial factor that not only promotes effective learning but also supports the internalization of professional values in the formation of teachers' professional identity (Kunter et al., 2011).

The theory of professional identity explains that identity is formed through the interaction between individuals and their social and professional environments. Professional identity is defined as "an individual's self-definition as a member of a profession," involving multiple levels of interaction, including individual, organizational, and broader institutional contexts. This process involves recognition and validation from peers and society (Chreim et al., 2023).

Self-Directed Learning (SDL) has been identified as an essential factor mediating the relationship between Teaching Enthusiasm (TE) and Professional Identity (PI). SDL enables individuals to take initiative in their learning processes, thereby enhancing engagement and enthusiasm for professional tasks. Studies indicate a significant correlation between SDL abilities and PI among students (Reissner & Armitage-Chan, 2024). One important factor influencing the formation of a professional identity is enthusiasm for teaching. Enthusiasm for teaching has been shown to not only increase student motivation and engagement in learning but also shape educators' positive attitudes toward their profession. Teachers or prospective teachers who demonstrate high enthusiasm for teaching tend to more easily build supportive relationships with the professional community and more easily integrate professional values into their identities (Virus et al., 2012). Thus, enthusiasm for teaching acts as a catalyst in the process of developing a professional identity and determines the quality of the future role of professional educators.

Research highlights the pivotal role of a positive academic atmosphere in enhancing students' SDL abilities. A supportive academic environment encourages students to be more proactive, independent, and accountable in managing their learning processes, which ultimately strengthens their Professional Identity (PI). Additionally, intrinsic motivation the internal drive to learn and grow emerges as a key factor in reinforcing SDL and PI. Mentorship, through guidance, feedback, and inspiration, also plays a vital role in shaping students' PI. The combination of a conducive academic atmosphere, intrinsic motivation, and mentor support establishes a robust foundation for developing students' professional identities across various disciplines (Zhou et al., 2023).

These two variables are interconnected within the educational context. Teaching enthusiasm contributes to student motivation, while SDL provides a framework for students to manage their learning independently. Consequently, SDL serves as an effective mediator in enhancing the positive influence of teaching enthusiasm on (Reissner & Armitage-Chan, 2024).

This study is unique in its focus on the role of Self-Directed Learning (SDL) as a mediator in teacher education. In the dynamic field of education, understanding how SDL can enhance teaching enthusiasm and contribute to Professional Identity formation is crucial for

future teacher professional development. Given its significance, the study also aims to create supportive learning environments for pre-service teachers, enabling them to excel in teaching (Toubassi et al., 2023).

Understanding PI and the role of Self-Directed Learning (SDL) is increasingly important in the evolving field of education. This study demonstrates how SDL mediates the relationship between Teaching Enthusiasm and the formation of Professional Identity among students in the Teacher Professional Education Program (PPG) in Indonesia. By mastering SDL, students can increase their engagement and motivation in the learning process and build stronger professional identities that align with contemporary demands.

This research aims to provide deeper insights into the relationship between teaching enthusiasm, SDL, and PI, as well as offer recommendations for developing supportive learning environments for pre-service teachers. By employing this approach, pre-service teachers are expected to cultivate independence in learning, which, in turn, positively influences their understanding and practice of their profession.

2. Materials and Methods

The method employed in this study is the survey method, with data collected through an online survey. The sampling technique utilized is simple random sampling, wherein each respondent has an equal opportunity to participate. The study respondents comprise PPG (Teacher Professional Education) students from various study programs, including Information Technology Education, Biology Education, Mathematics Education, English Education, Indonesian Language Education, Moral Education, and Elementary Education. The description of respondent demographics includes gender and class.

Table 1. Responden

Frequency		Percent Valid Percent	Cumulative Percent
Male	31	18.2	18.2
Female	139	81.8	100.0
Total	170	100.0	

Table 1, titled "Respondents," presents demographic data based on respondent gender. Each column in this table represents a different variable related to the distribution of

respondents. The "Frequency" column indicates the number of respondents in each gender category. In this study, the number of respondents involved was 170 students of the Teacher Professional Education Program, with a composition of 31 male respondents and 139 female respondents. The sample selection used a purposive sampling technique, namely selecting respondents deemed most relevant and representative of the population studied (Ishtiaq, 2019). This approach is in accordance with the characteristics of the PPG population, which is predominantly female, so that the gender proportion in the sample reflects the actual conditions in the field. According to Sugiyono (2017), in quantitative research, sample determination must consider the ability to represent the population and data accessibility. Therefore, the number of 170 respondents is considered sufficient to provide valid and reliable analysis results in the context of this study, in accordance with sample size standards for social research phenomena using survey methods (de Jonge, 2006). The "Percentage Valid" column provides the percentage of valid for each category in relation to the total number of respondents. This percentage indicates that male respondents accounted for 18.2% of the total, while female respondents accounted for 81.8%. Furthermore, the Cumulative Percentage column shows the cumulative percentage of the data presented. For the male category, the cumulative value is 18.2%, and when combined with the female category, the cumulative percentage reaches 100.0%. This column is useful for observing the cumulative proportion of each category presented in the table.

This study employs a quantitative research approach. The research process begins with designing a model based on relevant theories, developing or adapting measurement instruments, collecting data through, analyzing the model, and revising the model if necessary. Subsequently, the study involves assessing the model fit using path analysis and conducting mediation testing. The study concludes with the interpretation of findings within the context of practical application.

Data were collected through an online surveys survey using various instruments previously developed by researchers. All instruments employed a Likert scale. To assess Emotional Intelligence (EI), the study integrates an instrument developed by (Rosalina et al., 2023). Examples of questions include, "I easily acknowledge my mistakes and apologize" and "I am skilled at managing my mood and refraining

from bringing negative emotions into the workplace.”

This instrument comprises five elements, though only four were applied in this study as one element was specifically tailored for accounting teachers. The four elements used are Cultural Knowledge, Collaboration, Interpersonal Skills, and Engagement in Professional Communities. Examples of questions include: “I can quickly adapt” and “I always consider local cultural wisdom and school culture in the teaching process.”

The Teaching Creativity (C) construct was assessed using thirteen items adapted from an instrument developed by (Awaliah et al., 2023). These items cover aspects of respect for student ideas, support for students experiencing difficulties, innovation in teaching methods, and adaptability to student needs. To clarify the instrument's content, Table 2 presents a grid of items along with the dimensions measured in the questionnaire.

Table 2. Instruments and Grids for Teaching Creativity

Dimension of Teaching Creativity	Question Item
Respect for Student Ideas	I don't immediately express my opinion on students' ideas, whether I agree or disagree.
Support for Students	I support students who experience failure to overcome it so they can regain their confidence.
Innovation in Teaching	I always look for new ways to make learning more interesting and challenging for students.
Adaptation of Learning Strategies.	I am able to change teaching methods according to the diverse needs and characteristics of students.

The instruments underwent evaluation through factor loading assessment, with a threshold set at 0.40. The recommended benchmark for factor loadings typically ranges between 0.40 and 0.70. While statisticians generally agree on these standards, variations may arise across different sources due to their subjective nature (Astawan et al., 2022). The Cronbach's alpha coefficients for the instruments were as follows: Emotional Intelligence, 0.802; Professional Identity, 0.846; and Teaching

Creativity, 0.918. Consequently, all instruments were deemed satisfactory, meeting the baseline threshold of 0.70.

This study is an associative study adopting a path analysis approach. The research process involves five steps in structural equation modeling (SEM): developing a model based on theory, constructing a path diagram, selecting the type of input matrix and estimating the proposed model using the maximum likelihood method, identifying the structural model with a minimum factor loading of 0.40, and evaluating model fit based on goodness-of-fit criteria.

Mediation testing was conducted in two stages (J. Hair & Alamer, 2022). The first stage involved establishing individual relationships, which included testing direct relationships between TE and SDL, SDL and PI, and TE and PI. In the second stage, the initial model was estimated with direct relationships only, followed by estimating a second model that incorporated the mediating variable. The mediation test followed three-step rules: (a) if the relationship between TE and SDL remains significant and largely unchanged after PI is introduced, mediation is not supported; (b) if the relationship between AM and SDL decreases but remains significant when PI is added as an additional predictor, partial mediation is supported; (c) if the relationship between SDL and PI diminishes to statistical insignificance after PI functions as a mediating construct, full mediation is supported.

Considering the model estimation and fit analysis, the results were determined by examining regression coefficients, factor loadings, and the values across three model fit criteria: absolute fit indices, incremental fit indices, and parsimonious fit indices.

3. Result and Discussion

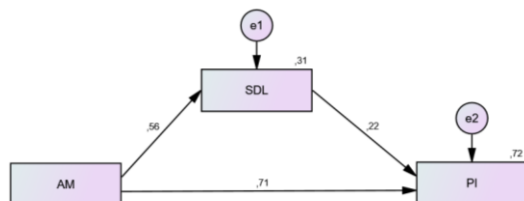
The data collected through the online form reveals many percentages of respondents from various study programs below.

Tabel 3. Academic Background

No.	Academic Background	Persentase
1.	Information Technology Education	2.2%
2.	Biology Education	2.2%
3.	Mathematics Education	8.1%
4.	English Education	8.6%
5.	Indonesian Language Education	12.4%
6.	Moral Education	17.7%
7.	Primary Education	48.9%

Table 2 shows that almost 50% of the participants came from the Elementary School Education Study Program, followed by Moral

Education and English Education student participants who were more than 10%, and 4 Study Programs who were less than 10%, namely Information Technology Education, Biology Education, Mathematics Education, and English Education. The results of the univariate normality examination showed that the skewness and kurtosis values for each manifest variable were within the normal range, which was below 2 (J. F. Hair et al., 2021). However, the multivariate normality value was recorded at 24.049, so it was necessary to remove several participants with significant outliers. Structural equation modeling requires multivariate normality to ensure that data analysis will produce a valid model. Therefore, if multivariate normality has been achieved, the Mahalanobis distance test is needed to remove several participants who are considered outliers. Outliers can affect the inaccuracy of the final results so their removal is very important. The results of the Mahalanobis distance test showed that 11 participants had to be excluded from the analysis, because they had a p-value of 0.005 or lower.



This model shows that there is a significant influence on the relationship between the three variables: Teaching Enthusiasm (TE), Self-Directed Learning (SDL), and Professional Identity (PI). Teaching Enthusiasm (TE) has a direct positive effect on both Self-Directed Learning (SDL) and Professional Identity (PI). The path coefficient from AM to SDL is **0.56**, indicating that increased enthusiasm in teaching significantly enhances students' ability to learn independently. This reflects the motivational role of enthusiastic teaching in encouraging active learning behavior among students.

Furthermore, TE also has a direct impact on Professional Identity (PI), with a stronger path coefficient of **0.71**. This suggests that when teachers exhibit high enthusiasm in their teaching, it not only fosters learning but also directly contributes to the development of

students' professional identity, possibly through role modeling and increased engagement. Self-Directed Learning (SDL), in turn, positively influences Professional Identity (PI), although the effect size is more modest, with a path coefficient of **0.22**. This implies that students who are more self-directed in their learning are also more likely to develop a stronger sense of professional identity.

The model also includes error terms (e1 and e2) which account for the unexplained variance in SDL and PI, respectively. The error variance for SDL is **0.31**, and for PI is **0.72**, indicating that while the model explains part of the variance in these variables, other factors not included in the model also play a role. Overall, this model emphasizes the central role of Teaching Enthusiasm in shaping both independent learning habits and the professional identity of learners, both directly and indirectly through self-directed learning.

Table 4. Standardized Regression Weights

	Estimate
SDL <--- TE	,560
PI <--- SDL	,216
PI <--- AM	,706

Table 3 shows the standard relationship (beta coefficient) between the existing variables, Self-Directed Learning (SDL) is influenced by Teaching Enthusiasm (AM) with an estimated value of 0.560, which means a positive and fairly strong relationship. Professional Identity (PI) is influenced by Self-Directed Learning (SDL) with an estimated value of 0.216, which shows a positive but weaker relationship than the previous relationship. Professional Identity (PI) is also directly influenced by Teaching Enthusiasm (AM) with an estimated value of 0.706, showing a very strong positive relationship.

While Table 4 This table provides unstandardized regression values and additional information such as standard error (SE), critical ratio (CR), and p-value (significance). All relationships between variables show high significance, with a p-value less than 0.001 (marked with ***), so that the relationship between variables is considered statistically valid.

Table 5. Regression Weights

Nama	Estimate	S.E.	C.R.	Rerata	P	Label
SDL <--- TE	,298	,034	8,786	67	***	par_1
PI <--- SDL	,294	,067	4,365	64	***	par_2
PI <--- AM	,510	,036	14,277	68	***	par_3

Table 4, titled *Regression Weights*, presents the results of regression analysis between several variables within a model. Each row represents the relationship between two variables, while each column in the table provides important statistical information related to that relationship. The **Estimate** column shows the estimated value or regression coefficient, which indicates the magnitude of the effect of one variable on another. For example, an estimate value of 0.298 for the relationship between Teaching Enthusiasm (TE) and Self-Directed Learning (SDL) indicates that every one-unit increase in TE will increase SDL by 0.298. The **S.E. (Standard Error)** column reflects the standard error of the estimate. This value indicates how accurate the estimate is—the smaller the standard error, the more precise the estimate.

Furthermore, the **C.R. (Critical Ratio)** column is the result of dividing the estimate by its standard error (Estimate/S.E.). The C.R. value is used to test the significance of the relationship between variables, where a value greater than 1.96 (at a 0.05 significance level) is considered significant. The **P** column displays the probability value (p-value) of the significance test. The symbol *** indicates that the p-value is less than 0.001, which means the relationship between the variables is statistically highly significant. Lastly, the **Label** column is used to assign codes or identifiers to each parameter in the model, which is useful for reporting or further interpretation of the analysis results.

TE and PI are two concepts that individually have a significant influence. However, when explained in a comprehensive structural model, the results show a change. In this model, TE no longer has a significant direct influence on PI. On the contrary, Professional Identity still shows a very important role. Thus, SDL is proven to be a full mediator in this relationship. The analysis model shows that Emotional Intelligence has a significant influence on Professional Identity, while Professional Identity also significantly affects TE. In this context, Professional Identity acts as a full mediator between Emotional Intelligence and TE. This means that individuals with high PI do not necessarily have good PI, unless they also have a strong Professional Identity. Therefore, ignoring the development of Professional Identity in teachers is a big mistake if the main goal is to create creative teachers.

Teaching Enthusiasm (AM) has a significant relationship with Self-Directed Learning (SDL) and Professional Identity (PI). Teachers who demonstrate high enthusiasm in teaching are able to create a learning environment that motivates

students to take initiative in their learning. The data in this study indicate that AM has a significant direct effect on SDL with an estimated value of 0.298 (CR = 8.786, $p < 0.001$), and SDL has an estimated effect on PI with an estimated value of 0.294 (CR = 4.365, $p < 0.001$). Furthermore, AM also directly influences PI with an estimated value of 0.510 (CR = 14.277, $p < 0.001$), indicating that this relationship is statistically valid and very strong.

Tabel 6. Comparison between the rules and the result

N o	Rules	Result	Interpretation
	If the relationship between TE on PI remains significant and largely unchanged once PI is included, the mediation is not supported	The relationship between TE and PI changed and became insignificant after PI was added as a mediator.	Mediation not supported
	If the relationship TE on PI is reduced but remains significant when PI is included as an additional predictor, then partial mediation is supported	The relationship between TE and PI changed and became insignificant after PI was added as a mediator	Mediation not supported
	If the relationship TE on PI is reduced to a point where is not statistically significantly after SDL is included as mediating construct, then the full mediation is supported.	After the correlation between TE and PI was removed, SDL remained significant with respect to TE, and PI remained significant with respect to TE.	Full Mediation

This finding aligns with literature reviews that suggest that teaching enthusiasm not only increases student motivation and engagement but also creates an energetic classroom atmosphere that supports active learning (Cao & Zhang, 2023). Enthusiastic teachers serve as concrete role models for students, fostering curiosity and interest in the material being studied. In this context, teacher competence also serves as an external supporting factor that encourages students to learn independently (Noor & Susanti, 2023), while a positive learning environment has been shown to enhance students' self-directed learning capacity (Pokhrel, 2024).

Self-Directed Learning (SDL) is an important mediator in the relationship between AM and PI. SDL refers to an individual's ability to take initiative in their learning process, from setting goals to disseminating learning outcomes. In this study, SDL was shown to play a full mediation role, meaning that the influence of AM on PI is effective when teachers also possess self-directed learning capabilities. Without SDL, enthusiasm for teaching is not strong enough to shape a comprehensive professional identity.

The literature supports these findings: SDL enables individuals to develop engagement and commitment to their professional duties more independently and effectively (Sarahono et al., 2024). Furthermore, SDL also increases intrinsic motivation, which is essential for the development of professional identity (Zhou et al., 2023). Research by (Reissner & Armitage-Chan, 2024) also emphasized that SDL positively accumulated among education students, particularly in the context of blended learning and reflective learning.

Professional Identity (PI) in the context of teachers refers to the understanding and internalization of their role as educators. This identity is formed through direct experience, social interactions, and recognition from professional environments such as colleagues and mentors (Toubassi et al., 2023). This research also confirmed that PI is influenced not only by internal factors such as personal character and motivation, but also by support from a conducive institutional environment (Puspasari Kiay Demak & Sulistiana, 2022).

Interestingly, the results showed that the majority of respondents were from Elementary School Education study programs (48.9%), indicating that strengthening SDL and PI is crucial in shaping teacher professionalism at the elementary education level. Given the characteristics of elementary school students who

require role models and reflective mentors, teachers at this level need a strong professional identity and strong independent learning skills.

Overall, the relationship between Teaching Enthusiasm, Self-Directed Learning, and Professional Identity forms a dynamic and mutually supportive framework. Enthusiastic teachers foster students' emotional and cognitive engagement, while the ability to learn independently is key to developing a sustainable professional identity. Therefore, teacher professional development needs to focus on fostering enthusiasm and systematically developing Self-Directed Learning, whether through training, field practice, or ongoing reflective learning.

4. Conclusion and Suggestions

Education is always faced with challenges that continue to develop, one of which is how to improve teacher creativity in teaching. This study highlights the relationship between Teaching Enthusiasm (TE), Self-Directed Learning (SDL), and Professional Identity (PI) as factors that are interrelated and influence teacher creativity. The results of the analysis show that Self-Directed Learning (SDL) acts as a full mediator in the relationship between Teaching Enthusiasm (TE) and Professional Identity (PI).

This study involved 170 students in the Teacher Professional Education Program, with 31 male respondents (18.2%) and 139 female respondents (81.8%), reflecting the significant gender balance within the PPG population. Path analysis revealed that Teaching Enthusiasm (TE) significantly influenced Independent Learning (SDL), and SDL, in turn, significantly impacted the formation of Professional Identity (PI). Statistically, SDL acted as a full mediator, meaning that the influence of TE on PI occurred entirely through increased student self-management skills. This finding suggests that increased teaching enthusiasm fosters the development of SDL, which in turn significantly strengthens the professional identity of PPG students.

In other words, without increased SDL, teaching enthusiasm does not directly enhance professional identity. These results align with the theoretical framework emphasizing the importance of independent learning as a bridge to internalizing professional values and building strong professional character. These data confirm that effective teacher development strategies must focus on enhancing both enthusiasm and independent learning skills to achieve optimal professional identity.

This means that teacher enthusiasm in teaching does not directly improve their professional identity, unless accompanied by the ability to learn independently (SDL). SDL is key in this process, because teachers who have high enthusiasm tend to develop independent learning skills, which ultimately strengthen their professional identity. This combination can contribute significantly to teacher professionalism and creativity in teaching.

Therefore, to create professional and creative teachers, it is important to strengthen teaching enthusiasm and encourage the development of independent learning skills. This not only enhances professional identity but also positively impacts the overall learning environment. As a suggestion for further research, it is recommended to explore the use of technology-based learning media, such as interactive learning platforms and self-directed learning management applications, which can increase the effectiveness and motivation of Independent Learning (SDL). The development and integration of these media are expected to provide optimal support for students and teachers in managing the learning process independently and creatively.

References

- Astawan, I. G., Studi, P., Dasar, P., & Ganesha, U. P. (2022). *Pengembangan Instrumen Self Regulated Learning Dan*. 6(2), 133–140.
- Awaliah, N. P., Angraini, L. M., & Muhammad, I. (2023). Tren Penelitian Kreativitas Guru dalam Pembelajaran Matematika: A Bibliometric Review. *FIBONACCI: Jurnal Pendidikan Matematika Dan Matematika*, 9(1), 43. <https://doi.org/10.24853/fbc.9.1.43-62>
- Cao, J., & Zhang, W. (2023). Investigating the impact of value congruence on work engagement in EFL teachers: the role of teacher enthusiasm. *Frontiers in Psychology*, 14(October), 1–12. <https://doi.org/10.3389/fpsyg.2023.1264126>
- de Jonge, J. (2006). Multivariate Data Analysis (Sixth Edition). In *Gedrag & Organisatie* (Vol. 19, Issue 3). <https://doi.org/10.5117/2006.019.003.007>
- Hair, J., & Alamer, A. (2022). Partial Least Squares Structural Equation Modeling (PLS-SEM) in second language and education research: Guidelines using an applied example. *Research Methods in Applied Linguistics*, 1(3). <https://doi.org/10.1016/j.rmal.2022.100027>
- Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Evaluation of Formative Measurement Models*. https://doi.org/10.1007/978-3-030-80519-7_5
- Ishtiaq, M. (2019). Book Review Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches* (4th ed.). Thousand Oaks, CA: Sage. *English Language Teaching*, 12(5), 40. <https://doi.org/10.5539/elt.v12n5p40>
- Noor, T. R., & Susanti, W. (2023). Blended Learning and Improving Quality of Learning (Post Pandemic Implementation in Man 1 Sragen, Central Java). *JURNAL ILMIAH DIDAKTIKA: Media Ilmiah Pendidikan Dan Pengajaran*, 23(2), 165. <https://doi.org/10.22373/jid.v23i2.16036>
- Pokhrel, S. (2024). No TitleEAENH. *Ayan*, 15(1), 37–48.
- Puspasari Kiay Demak, I., & Sulistiana, R. (2022). Case Study Factors Influencing Professional Identity Development on Medical Students in Indonesia. *Jurnal Pendidikan Kedokteran Indonesia-The Indonesian Journal of Medical Education*, 11(4), 436–443. <https://doi.org/10.22146/jpki.71620>
- Reissner, S., & Armitage-Chan, E. (2024). Manifestations of professional identity work: an integrative review of research in professional identity formation. *Studies in Higher Education*, 1–16. <https://doi.org/10.1080/03075079.2024.2322093>
- Rosalina, J., Jurusan, A., Niaga, A., & Ambon, P. N. (2023). Pengaruh Kecerdasan Emosional Dan Komitmen Organisasional Terhadap Kinerja Karyawan PT. NMM. *Jurnal Administrasi Terapan*, 2(2), 269–274.
- Sarahono, F. R., Lase, A., Laoli, B., & Laoli, E. S. (2024). Penerapan Model Pembelajaran Self Directed Learning (SDL) Untuk Meningkatkan Hasil Belajar Siswa. *Jurnal Penelitian, Pendidikan Dan Pengajaran: JPPP*, 5(2), 218–224. <https://doi.org/10.30596/jppp.v5i2.20962>
- Toubassi, D., Schenker, C., Roberts, M., & Forte, M. (2023). Professional identity formation: linking meaning to well-being. *Advances in Health Sciences Education*, 28(1), 305–318. <https://doi.org/10.1007/s10459-022-10146-2>
- Virus, H. N. I., Human, T., & Endothelial, P. (2012). Articles of Significant Interest Selected from This Issue by the Editors. *Journal of Virology*, 86(2), 641–641.

- <https://doi.org/10.1128/jvi.06877-11>
Vu, M. C., Shin, H., & Burton, N. (2024). "We are Neither Commies nor Volunteers": How National Culture Influences Professional Identity Construction of CSR Professionals in South Korea. *Journal of Business Ethics*, 191(1), 195–213. <https://doi.org/10.1007/s10551-023-05483-0>
- Zhou, T., Yin, Y., Zhang, H., Zhang, J., Xu, X., & Zhang, J. (2023). Subgroups of self-directed learning ability and their differences in professional identity among nursing undergraduates during the COVID-19 pandemic: a latent profile analysis. *BMC Nursing*, 22(1), 1–11. <https://doi.org/10.1186/s12912-023-01295-9>