Exploring the Influence of Personality Traits on Learning Satisfaction and Motivation in Online Education

Deva Nur Fitriana,
Faculty of Teacher Training and Education, University of Muhammadiyah Gresik
Jalan Sumatra No. 101, Kebomas, Gresik, East Java, Indonesia.
* [1] devanurfitriana5@gmail.com

[2] Nirwanto Maruf,
Faculty of Teacher Training and Education, University of Muhammadiyah Gresik
Jalan Sumatra No. 101, Kebomas, Gresik, East Java, Indonesia
nirwanto.maruf@umg.ac.id

[3] Candra Hadi Asmara
Faculty of Teacher Training and Education, University of Muhammadiyah Gresik
Jalan Sumatra No. 101, Kebomas, Gresik, East Java, Indonesia
candrafkip@umg.ac.id

Abstract

This study investigates the relationships among the Big Five Personality Traits, online learning satisfaction, and learning motivation in the context of Indonesian secondary education. The objective is to examine how personality traits influence students' satisfaction and motivation in virtual learning environments, addressing the gap in understanding these dynamics in younger learners. Employing a correlational quantitative research design, the study involved 149 ninth-grade students from an Islamic junior high school in Indonesia. Data were collected using three validated instruments: The Big Five Inventory Questionnaire, Learner Satisfaction Survey, and English Motivation Questionnaire. Pearson Product-Moment correlation analysis was used to determine the relationships among the variables. The findings reveal strong positive correlations between online learning satisfaction and learning motivation ($r = 0.955$), the Big Five Personality Traits and satisfaction ($r = 0.986$), and personality traits and motivation ($r = 0.950$). Conscientiousness, agreeableness, and openness to experience emerged as significant predictors of satisfaction and motivation. These results highlight the importance of creating supportive and adaptive online learning environments tailored to individual differences. However, the study is limited by its single-school setting and reliance on self-reported data. Future research should expand to diverse educational contexts and explore additional moderating factors. This study recommends designing inclusive virtual learning environments that integrate personality-based teaching strategies to enhance engagement and learning outcomes.

Keywords: Personality traits; online learning; satisfaction; motivation; Indonesian education.

1. Introduction

The COVID-19 pandemic brought unprecedented changes to the global education system, mandating rapid shifts to online learning (Coman et al., 2020; Famularsih, 2020; Austin et al., 2010). In Indonesia, the Ministry of Education and Culture directed all educational institutions to conduct teaching and learning activities virtually (Famularsih, 2020); (Basri et al., 2020; Fitriyah & Jannah, 2021; Lestiyanawati & Widyantoro, 2020). This abrupt transition introduced numerous challenges for students, teachers, parents, and school administrators (Lie et al., 2020; Nartiningrum &

Nugroho, 2020; Sulaiman & Ermianti, 2021). The challenges ranged from limited infrastructure to the lack of preparedness for virtual teaching methods (Norzaimalina et al., 2018; Philippe et al., 2020; Maruf & Anjely, 2020). Despite these hurdles, education had to continue, emphasizing the necessity of understanding factors influencing the effectiveness of online learning (Purwantoro et al., 2021; Sulaiman & Ermianti, 2021; Masyhud et al., 2023).

Online learning, characterized by its flexibility and accessibility, also presents notable challenges. Research has identified barriers such as limited interaction, inadequate academic and technical skills, and issues with student motivation and satisfaction (Zapalska & Brozik, 2006; Mishra et al., 2020; Maruf & Halyna, 2023). During the pandemic, these issues became more prominent, particularly among secondary school students navigating the complexities of virtual education. For instance, Paul & Jefferson (2019) emphasize that while online learning provides an alternative to traditional methods, it cannot fully replicate the interactive and dynamic aspects of in-person classrooms, often leading to decreased motivation and engagement. Previous studies have highlighted the critical role of student satisfaction and motivation in determining the success of online learning experiences (Topala & Tomozii, 2014; Ranadewa, 2021; Purwantoro et al., 2021). These studies illustrate that when satisfaction and motivation are low, learning outcomes are often compromised. However, the influence of personality traits on these factors remains underexplored, particularly within the Indonesian context, where cultural and systemic factors may further shape online learning experiences.

The Big Five Personality Traits framework—comprising openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism—provides a comprehensive model for understanding individual differences (Rowold, 2007; Murugesan & Jayavelu, 2017; Şahin et al., 2019; Zuhri et al., 2021). These traits have been shown to affect learning behaviors, yet their specific relationship with learning satisfaction and motivation in online learning environments warrants further investigation. For example, Shih et al., (2019) found that personality traits significantly influence students' ability to adapt to online learning environments, particularly in fostering self-regulation and engagement. While these findings suggest a strong link between personality traits and learning outcomes, their applicability to Indonesian secondary school students has yet to be explored. This gap in the literature underscores the need to investigate how personality traits influence students' experiences and outcomes in virtual education settings, particularly in contexts where online learning is relatively new.

While studies have examined the roles of satisfaction and motivation in online learning, there is limited research linking these factors with personality traits, especially within the context of secondary education in Indonesia. This gap is particularly relevant as schools adapt to prolonged online learning conditions, which require a deeper understanding of individual differences to enhance educational practices. Moreover, while studies like those by Topala and Tomozii (2014) provide a foundation for understanding satisfaction, they often do not address the interplay of multiple factors such as motivation and personality traits. Thus, there is a compelling need to examine these variables collectively.

The purpose of this study is to examine the relationships among The Big Five Personality Traits, Learning Satisfaction, and Learning Motivation in the context of online learning. By analyzing these connections, the study aims to provide insights into how personality traits influence students' engagement and satisfaction in virtual classrooms, ultimately contributing to more effective online teaching strategies. The research questions guiding this study are as follows: Does online learning satisfaction correlate with learning motivation among ninth-grade students? Do The Big Five Personality Traits correlate with online learning satisfaction? Do The Big Five Personality Traits correlate with learning motivation?

2. Method

Research Design

This study employed a correlational quantitative research design. According to Creswell (2014), correlational research examines the relationships between two or more variables using statistical methods. (Arikunto, 2006) highlights that the quantitative approach involves extensive use of numerical data, from collection and interpretation to presentation of results. Sugiyono (2013) further explains that quantitative methods rely on positivistic (concrete) data, which are analyzed statistically to draw conclusions. In this study, the design was used to predict the correlation between the Big Five Personality Traits and learning motivation, as well as between learning motivation and online learning satisfaction.

Participants and Setting

The participants of this study were ninth-grade students from Islamic Qon Junior High School, who had been engaged in online learning for approximately one year. The selection process utilized a total sampling method, which involved including all students from five classes: 9A, 9B, 9C, 9D, and 9E. The total number of participants was 149 students. Specifically, 31 students were from class 9A, 28 from class 9B, 32 from class 9C, 33 from class 9D, and 25 from class 9E. This setting ensured a diverse and comprehensive representation of students' experiences with online learning within the school.

Instruments

Three questionnaires were utilized to collect data for this study, each designed to capture specific dimensions of the research variables. The first instrument was the Big Five Inventory (BFI) Questionnaire, developed by Ariska (2019) based on McCrae and Costa's theory. This instrument assessed the dominant personality traits of the students, focusing on five dimensions: Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience. The 21 items in this questionnaire were rated on a Likert scale from 1 (strongly disagree) to 5 (strongly agree).

The second instrument was the Learner Satisfaction Survey (LSS), originally developed by Strachota (2003) and refined by Chang (2013) in Torrado & Blanca (2022). This questionnaire included 25 items grouped into five dimensions: Learner-Content Interaction, Learner-Instructor Interaction, Learner-Learner Interaction, Learner-Technology Interaction, and General Satisfaction. It used a Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree) to measure students' satisfaction with online learning experiences.

The third instrument was the English Motivation Questionnaire, this tool measured students' intrinsic and extrinsic motivation for learning English, featuring 30 items rated on a Likert scale from 1 (strongly disagree) to 5 (strongly agree). Together, these instruments provided comprehensive data on the relationships among personality traits, learning satisfaction, and motivation.

Research Procedure

The study was conducted in several systematic stages. Initially, the researcher developed and validated the three questionnaires to ensure their suitability for the study's objectives. After validation, ninth-grade students were recruited using a total sampling method. The questionnaires were distributed to the students via their class teachers at the end of their lessons. Detailed instructions on how to complete the questionnaires were provided to minimize errors and ensure reliable responses. The students' completed questionnaires were then collected for analysis.

Data Collection

Data collection involved distributing the three validated questionnaires to all participants. The distribution process was coordinated with the class teachers, who facilitated the administration of the questionnaires. After completing the questionnaires, students returned them to their respective teachers, who then submitted them to the researcher. This approach ensured full participation and accurate data collection from all selected participants. The collected responses were meticulously checked for completeness and clarity before proceeding to data analysis. The entire process was designed to minimize potential biases and ensure the integrity of the data.

Data Analysis

The data were analyzed using the Pearson Product-Moment correlation technique, implemented through the SPSS statistical software. Three primary analyses were conducted to explore the relationships among the variables. First, the correlation between the Big Five Personality Traits and Learning Satisfaction was examined. Second, the relationship between the Big Five Personality Traits and Learning Motivation was assessed. Finally, the correlation between Learning Satisfaction and Learning Motivation was analyzed. The significance of these correlations was interpreted based on established guidelines, where coefficients below 0.03 indicated a weak relationship, coefficients between 0.04 and 0.06 suggested a moderate relationship, and coefficients above 0.07 represented a strong relationship. This systematic approach ensured robust and meaningful interpretations of the data.

Validity and Reliability

The validity and reliability of the instruments were rigorously evaluated to ensure the accuracy and consistency of the data. Validity was established through expert reviews, where specialists in educational research examined the questionnaires to confirm their alignment with the study's objectives. Additionally, pilot testing was conducted with a small group of students to refine the instruments and address any ambiguities.
Reliability was assessed using Cronbach's alpha, a statistical measure of internal consistency. This analysis verified that the items within each questionnaire reliably measured the intended constructs. High Cronbach's alpha values across the three instruments demonstrated their suitability for the study, ensuring that the data collected were both reliable and valid for drawing meaningful conclusions.

3. Findings and Discussion

Research Question #1: Does online learning satisfaction correlate with learning motivation among ninth-grade students?

The results of the Pearson Product-Moment correlation analysis indicate a significant positive correlation between online learning satisfaction and learning motivation. The correlation coefficient was 0.955, exceeding the threshold of 0.07, which signifies a strong relationship. This finding suggests that students who reported higher levels of satisfaction with their online learning experience also demonstrated greater motivation to learn. The significance level (ρ-value) was 0.000, indicating that the correlation is statistically significant. These results highlight the importance of fostering a satisfying online learning environment to enhance student motivation.

Table 1. Correlation online learning satisfaction with students' learning motivation.

Correlations		Online_Learning_Satisfaction	Learning_Motivation
Online_Learning_Satisfaction	Pearson Correlation	1	.955**
	Sig. (2-tailed)		.000
Learning_Motivation	Pearson Correlation	.955**	1
	Sig. (2-tailed)	.000	

Research Question #2: Do The Big Five Personality Traits correlate with online learning satisfaction?

The analysis revealed a strong positive correlation between The Big Five Personality Traits and online learning satisfaction, with a correlation coefficient of 0.986. Among the five personality dimensions, conscientiousness and agreeableness were particularly associated with higher levels of satisfaction, indicating that students with these traits tend to perceive their online learning experiences more positively. The statistical significance of this relationship was confirmed by a ρ-value of 0.000. These findings underscore the influence of individual personality differences on students' perceptions of satisfaction in online education.

Table 2. Correlation The Big Five Personality with online learning satisfaction

Correlations		The_Big_Five_Personality_Traits	Online_Learning Satisfaction
The_Big_Five_Personality_Traits	Pearson Correlation	1	.986**
	Sig. (2-tailed)		.000
Online_Learning_Satisfaction	Pearson Correlation	.986**	1
	Sig. (2-tailed)	.000	

Research Question #3: Do The Big Five Personality Traits Correlate with Learning Motivation?

The relationship between The Big Five Personality Traits and learning motivation was also found to be strong, with a correlation coefficient of 0.950. The traits of openness to experience and conscientiousness emerged as the most influential in predicting students' motivation levels. Students who exhibited these traits demonstrated higher intrinsic motivation to engage with learning tasks. The ρ-value for this correlation was 0.000, confirming its statistical significance. This result indicates that personality traits play a critical role in shaping students' motivation to learn in online settings.

Table 3. Correlation The Big Five Personality with Learning Motivation

Correlations		The_Big_Five_Personality_Traits	Learning_Motivation
The_Big_Five_Personality_Traits	Pearson Correlation	1	.950**
	Sig. (2-tailed)		.000
Learning_Motivation	Pearson Correlation	.950**	1
	Sig. (2-tailed)	.000	

The findings of this study reveal significant insights into the relationships among the Big Five Personality Traits, online learning satisfaction, and learning motivation among ninth-grade students. The strong positive correlation between online learning satisfaction and learning motivation ($r = 0.955$) indicates that satisfaction is a critical factor in fostering motivation in virtual educational settings. Students who experience higher satisfaction with their online learning environment tend to exhibit greater enthusiasm and commitment to their studies. This aligns with prior research by Topala and Tomozii (2014) and Ranadewa et al (2023), which emphasized the importance of satisfaction in enhancing learning outcomes. However, unlike these studies, this research explores the direct interplay between satisfaction and motivation in an online learning context specific to secondary education in Indonesia, addressing a previously underexplored area.

The correlation between the Big Five Personality Traits and online learning satisfaction ($r = 0.986$) underscores the influence of individual differences on students' perceptions of online learning. Notably, conscientiousness and agreeableness emerged as key contributors to higher satisfaction levels, reflecting traits that promote persistence, time management, and adaptability in collaborative environments. These findings corroborate Bhagat et al (2019) assertion that personality traits significantly affect students' ability to adapt to online learning. However, this study expands on their work by focusing on a younger demographic within the Indonesian context, highlighting cultural and systemic factors that shape online education experiences.

Similarly, the significant positive correlation between the Big Five Personality Traits and learning motivation ($r = 0.950$) highlights the role of openness to experience and conscientiousness in driving intrinsic motivation. This finding suggests that students with high levels of curiosity and discipline are better equipped to engage with learning tasks, consistent with the theoretical framework of McCrae & Costa's Big Five model. Unlike previous studies that primarily examined these traits in higher education contexts, this study provides a novel perspective by exploring their impact in secondary education during a prolonged online learning period.

While the study offers valuable insights, several limitations should be acknowledged. First, the research is confined to a single school, which may limit the generalizability of the findings to broader populations. Future studies could address this limitation by including diverse educational settings and larger sample sizes. Second, the reliance on self-reported data through questionnaires may introduce response bias. Incorporating mixed-methods approaches, such as interviews or classroom observations, could provide a more comprehensive understanding of the variables examined. Lastly, this study does not account for potential moderating factors, such as socioeconomic status or parental involvement, which may influence the relationships between personality traits, satisfaction, and motivation.

In light of these limitations, future research should explore the longitudinal effects of personality traits on online learning outcomes to assess their stability over time. Additionally, comparative studies across different cultural and educational contexts could provide deeper insights into the universal and context-specific dynamics of online learning. Educators and policymakers are encouraged to design targeted interventions that foster both environmental and individual factors, ensuring that online learning environments cater to diverse student needs and enhance their educational experiences.

4. Conclusion

This study sheds light on the critical relationships among personality traits, online learning satisfaction, and learning motivation in the context of Indonesian secondary education. The findings establish that online learning satisfaction significantly enhances students' motivation, emphasizing that a positive and supportive virtual learning environment can act as a catalyst for academic engagement and commitment. Similarly, the Big Five Personality Traits—particularly conscientiousness, agreeableness, and openness to experience—emerged as key predictors of satisfaction and motivation. These traits influence how students perceive and interact with their learning environment, underscoring the interplay between individual characteristics and educational outcomes.

The results suggest that conscientiousness, characterized by discipline and persistence, contributes to higher satisfaction and motivation by enabling students to manage their time effectively and stay organized in virtual settings. Agreeableness supports satisfaction by fostering harmonious interpersonal relationships, which are essential in collaborative online learning. Meanwhile, openness to experience drives motivation by encouraging curiosity and creativity, helping students engage with and explore new learning materials.

These insights offer valuable implications for educators, school administrators, and policymakers striving to optimize online learning environments. A key takeaway is the need to design online education systems that not only provide technical functionality but also cater to individual differences in personality. For instance, educators could integrate adaptive teaching strategies, interactive tools, and collaborative activities to address diverse learner needs.

Despite its contributions, this study is not without limitations. First, the research was conducted in a single school, which restricts the generalizability of the findings. Expanding the study to include diverse educational settings across regions would offer a more comprehensive understanding of the relationships among the variables. Second, the reliance on self-reported questionnaires may introduce response biases. Future studies could incorporate triangulation methods, such as interviews and observations, to validate and enrich the data. Additionally, external factors such as socioeconomic status, parental involvement, and technological access were not examined in this study but are likely to influence online learning outcomes.

Future research should explore these external factors and investigate the long-term effects of personality traits on satisfaction and motivation in online learning. Comparative studies across different age groups, cultural contexts, and educational systems would also enhance our understanding of how personality and learning dynamics vary globally. Furthermore, longitudinal studies could provide insights into how these relationships evolve over time, particularly as students and educators become more accustomed to virtual learning modalities.

In conclusion, this study underscores the importance of integrating individual and environmental factors to improve online learning outcomes. By addressing the interplay between personality traits, satisfaction, and motivation, educators can create more inclusive, adaptive, and effective virtual classrooms that not only enhance academic performance but also foster students' personal and social growth.

5. References

Arikunto. (2006). Arikunto, Suharsimi. (2006). Prosedur Penelitian: Suatu Pendekatan Praktik. Jakarta: Rineka Cipta. *Rineka Cipta.*, *13*(2).

Austin, R., Smyth, J., Rickard, A., Quirk-Bolt, N., & Metcalfe, N. (2010). Collaborative digital learning in schools: Teacher perceptions of purpose and effectiveness. *Technology, Pedagogy and Education*, *19*(3). https://doi.org/10.1080/1475939X.2010.513765

Basri, M., Patak, A. A., Musdariah, A., & Abduh, A. (2020). Innovative Learning Technology (ILT) in Indonesian Vocational Higher Education. *International Journal on Advanced Science, Engineering and Information Technology*. https://doi.org/10.18517/ijaseit.10.6.11348

Bhagat, K. K., Wu, L. Y., & Chang, C. Y. (2019). The impact of personality on students' perceptions towards online learning. *Australasian Journal of Educational Technology*, *35*(4). https://doi.org/10.14742/ajet.4162

Coman, C., Țîru, L. G., Meseșan-Schmitz, L., Stanciu, C., & Bularca, M. C. (2020). Online Teaching and Learning in Higher Education during the Coronavirus Pandemic: Students' Perspective. *Sustainability*, *12*(24), 10367. https://doi.org/10.3390/su122410367

Creswell, J. W. (2014). Research Design: Qualitative, quantitative, and mixed methods Approaches (4th ed.). *Pearson*.

Fitriyah, I., & Jannah, M. (2021). Online Assessment Effect in EFL Classroom: An Investigation on Students and Teachers' Perceptions. *IJELTAL (Indonesian Journal of English Language Teaching and Applied Linguistics)*, *5*(2). https://doi.org/10.21093/ijeltal.v5i2.709

Lestiyanawati, R., & Widyantoro, A. (2020). Strategies and Problems Faced by Indonesian Teachers in Conducting E- Learning System During COVID-19 Outbreak. *CLLiENT Journal*, *2*(1).

Lie, A., Tamah, S. M., Gozali, I., Triwidayati, K. R., Utami, T. S. D., & Jemadi, F. (2020). SECONDARY SCHOOL LANGUAGE TEACHERS' ONLINE LEARNING ENGAGEMENT DURING THE COVID-19 PANDEMIC IN INDONESIA. *Journal of Information Technology Education: Research*, *19*. https://doi.org/10.28945/4626

Maruf, N., & Anjely, A. M. R. (2020). Utilizing Cooperative Integrated Reading and Composition (CIRC) with mobile Learning to Enhance Students' Reading Comprehension. *British (Jurnal Bahasa Dan Sastra Inggris)*, *9*(2), 10–19.

Maruf, N., & Halyna, K. (2023). Investigating EFL Teachers' Perceptions and Meanings on Digital Storytelling in Language Learning: A Narrative Approach. *JEELS (Journal of English Education and Linguistics Studies)*, *10*(2). https://doi.org/10.30762/jeels.v10i2.912

Masyhud, A., Maruf, N., & Asari, S. (2023). The Effectiveness of Mobile Collaborative Learning on Students' Writing Performance by Implementing Magnet Summary Strategy. *JET ADI BUANA*, *8*(01). https://doi.org/10.36456/jet.v8.n01.2023.7036

McCrae, R. R., & Costa, P. T. (2008). The Five Factor Theory of personality. In *Handbook of Personality*.

Mishra, L., Gupta, T., & Shree, A. (2020). International Journal of Educational Research Open Online teaching-learning in higher education during lockdown period of COVID-19 pandemic. *International Journal of Educational Research Open*, *1*(August), 100012. https://doi.org/10.1016/j.ijedro.2020.100012

Murugesan, R., & Jayavelu, R. (2017). The Influence of Big Five Personality Traits and Self-efficacy on Entrepreneurial Intention: The Role of Gender. *Journal of Entrepreneurship and Innovation in Emerging Economies*, *3*(1). https://doi.org/10.1177/2393957516684569

Nartiningrum, N., & Nugroho, A. (2020). Online Learning amidst Global Pandemic: EFL Students' Challenges, Suggestions, and Needed Materials. *ENGLISH FRANCA : Academic Journal of English Language and Education*, *4*(2), 115. https://doi.org/10.29240/ef.v4i2.1494

Norzaimalina, S., Majid, A., & Ismail, R. (2018). Students ' perception in using Virtual Reality device in english students ' perception in using Virtual Reality device. *The 12th Malaysia International Conference On English Language Teaching (MICELT) 2018 – Shaping New Understandings In ELT*.

Paul, J., & Jefferson, F. (2019). A Comparative Analysis of Student Performance in an Online vs. Face-to-Face Environmental Science Course From 2009 to 2016. *Frontiers in Computer Science*, *1*. https://doi.org/10.3389/fcomp.2019.00007

Philippe, S., Souchet, A. D., Lameras, P., Petridis, P., Caporal, J., Coldeboeuf, G., & Duzan, H. (2020). Multimodal teaching, learning and training in virtual reality: a review and case study. In *Virtual Reality and Intelligent Hardware* (Vol. 2, Issue 5). https://doi.org/10.1016/j.vrih.2020.07.008

Purwantoro, A., Asari, S., & Maruf, N. (2021). The Effectiveness of E-Learning Madrasah in English Teaching and Learning. *BIRCI-Journal*, *4*(3).

Ranadewa, D. U. N., Gregory, T. Y., Boralugoda, D. N., Silva, J. A. H. T., & Jayasuriya, N. A. (2023). Learners' Satisfaction and Commitment Towards Online Learning During COVID-19: A Concept Paper. In *Vision* (Vol. 27, Issue 5). https://doi.org/10.1177/09722629211056705

Rowold, J. (2007). The impact of personality on training-related aspects of motivation: Test of a longitudinal model. *Human Resource Development Quarterly*, *18*(1). https://doi.org/10.1002/hrdq.1190

Şahin, F., Karadağ, H., & Tuncer, B. (2019). Big five personality traits, entrepreneurial self-efficacy and entrepreneurial intention: A configurational approach. *International Journal of Entrepreneurial Behaviour and Research*, *25*(6). https://doi.org/10.1108/IJEBR-07-2018-0466

Sari Famularsih. (2020). Students' Experiences in Using Online Learning Applications Due to COVID-19 in English Classroom. *Studies in Learning and Teaching*, *1*(2). https://doi.org/10.46627/silet.v1i2.40

Shih, M., Liang, J. C., & Tsai, C. C. (2019). (SHIH ET AL., 2018). *Interactive Learning Environments*, *27*(8).

Sugiyono. (2013). Definisi Operasional (Sugiyono, 2013). *Jurnal Metode Penelitian Kualitatif*, *17*.

Sulaiman, R., & Ermianti, E. (2021). The Effectiveness of Online Learning at English Education Students. *Didaktika: Jurnal Kependidikan*, *10*(4). https://doi.org/10.58230/27454312.119

Torrado, M., & Blanca, M. J. (2022). Assessing Satisfaction With Online Courses: Spanish Version of the Learner Satisfaction Survey. *Frontiers in Psychology*, *13*. https://doi.org/10.3389/fpsyg.2022.875929

Zapalska, A., & Brozik, D. (2006). Learning styles and online education. *Campus-Wide Information Systems*, *23*(5). https://doi.org/10.1108/10650740610714080

Zuhri, S., Anwar, K., & Maruf, N. (2021). The correlation between extensive reading , critical reading , and self- esteem in students ' reading abilities. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)*, *4*(3).