

Analysis of the Effects of MCQ Enthusiasm, Attendance, Discussion Activeness, and Test Completion on Essay Success in Online Leadership Learning

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Keywords:	ABSTRACT
Leadership Training, Andragogy, Predictive Validity, Discussion Activeness, Online Learning Evaluation.	Evaluating the effectiveness of leadership learning for senior-level employees (one level below the director) presents unique challenges in measuring competencies. This research aims to analyze the predictive validity of various instruments of online learning activities on the strategic competence of participants, as measured through the success of essay preparation. The predictive variables tested included: (1) Enthusiasm for working on the <i>Multiple Choice Question (MCQ)</i> , (2) Attendance of <i>Kick-Off Meeting</i> , (3) Attendance of <i>Online Sessions</i> , (4) Activity of <i>Discussions</i> , (5) Completion of <i>Reaction Test</i> , and (6) Completion of <i>Learning Test</i> . The study involved 40 senior employees from various companies. Data were analyzed using Binary Logistic Regression. The results showed that the regression model explained 63% of the variance in essay success. Key findings revealed that administrative variables (attendance) and procedural cognitive tests (<i>MCQs</i>) did not have a significant influence on essay success. The only variable proven to have a significant effect was <i>Discussion Activity</i> (Sig < 0.05), with an Odds Ratio of 19.3. This indicates that, for executive-level learners, leadership competencies are more validly predicted through the dialectic of arguments in discussions rather than mere presence or memorization of theory.

INTRODUCTION

The transformation of human resource (HR) development methods to online platforms requires precise evaluation instruments, especially in high-stakes training such as leadership programs for executive candidates (Senior Employees/N-1 Directors). At this level, the learning goal is no longer just knowing theory (low-level cognitive), but the ability to synthesize and create strategies, which is usually measured through the final project in the form of a Strategic Essay (Andargie et al., 2025; Castells et al., 2023; Gay, 2022; Mallahi, 2024; Stahl et al., 2024).

In practice, training managers often rely on standard quantitative metrics such as attendance, multiple-choice quiz scores (MCQ/Learning Test), or satisfaction surveys (Reaction Test) as indicators of participant success. However, the relevance of these instruments in predicting the leadership competence of senior participants remains questionable (Bird & Stevens, 2025; Mashele & Alagidede, 2022; Philip et al., 2023; Rahman et al., 2025; Schmidt et al., 2023). For example, is a prospective director who is diligent and scores 100 on the multiple-choice quiz automatically capable of composing a quality business strategy essay?

The urgency of this study is further amplified by the increasing adoption of online learning platforms for leadership development programs. As organizations invest significant resources in training their executive talent, ensuring that evaluation methods accurately measure strategic competencies becomes paramount. Misdirected evaluation could lead to flawed decisions regarding talent identification and development, potentially compromising organizational effectiveness. Moreover, the unique characteristics of adult learners—particularly senior executives with extensive practical experience—demand evaluation approaches that align with their learning styles and cognitive demands. Therefore, understanding which learning activities genuinely predict strategic competence is essential for designing effective leadership development programs (Arobiolè & Chinyere, 2023; Darling-Hammond et al., 2022; Kezar & Carducci, 2023; Khotimah et al., 2024; Vongswasdi et al., 2024; Wong et al., 2022).

Several previous studies have examined evaluation methods in adult learning and leadership development contexts. Knowles (1984) established the foundational principles of andragogy, emphasizing that adult learners are self-directed and prefer problem-centered learning approaches, though his work did not specifically address online learning environments or predictive validity for executive-level competencies. Garrison (2011) developed the Community of Inquiry framework, demonstrating that discussion-based activities foster deeper cognitive engagement compared to passive learning activities, yet did not empirically test the predictive validity of discussion activity on strategic competency outcomes for senior-level learners. Anderson and Krathwohl (2001) revised Bloom's taxonomy, distinguishing between lower-order and higher-order thinking skills, providing a theoretical foundation for understanding cognitive level mismatches in evaluation instruments, but their research did not specifically examine how objective tests versus discussion activities predict higher-order thinking outcomes in executive education contexts.

Based on the review of previous studies, several research gaps are identified: empirical research specifically examining the predictive validity of various learning activities on strategic competency outcomes for executive-level learners remains limited; previous studies have not systematically compared the predictive power of administrative variables (attendance, test completion) with interactive variables (discussion activity) in determining success in Strategic Essay assignments; and there is a lack of research employing binary logistic regression to test the predictive validity of multiple learning activity variables simultaneously in online leadership training for senior employees. This study addresses these gaps by focusing specifically on senior-level employees (one level below director), a population underexplored in online learning evaluation research; empirically testing six distinct learning activity variables—MCQ Enthusiasm, Kick-Off Attendance, Online Session Attendance, Discussion Activeness, Reaction Test Completion, and Learning Test Completion—within a single predictive model using binary logistic regression; and employing a backward stepwise method to identify the most efficient and valid prediction model, thereby providing rigorous empirical evidence on which evaluation instruments are truly relevant for assessing executive-level competencies.

This study aims to empirically test the influence of six variables of learning activities (MCQ Enthusiasm, Kick-Off Attendance, Online Session Attendance, Discussion Activeness, Reaction Test Completion, and Learning Test) on essay success. This analysis is important to

validate which instruments are relevant for evaluating top-level managerial competencies. The contributions of this research are twofold: theoretically, it advances understanding of andragogical principles in online learning contexts by empirically validating which learning activities predict higher-order thinking outcomes; practically, it provides evidence-based guidance for training managers and instructional designers in selecting evaluation instruments that accurately measure executive-level competencies, enabling more effective talent identification and development decisions.

RESEARCH METHOD

This study employed a quantitative approach with a predictive correlational design using ex-post facto data to examine the relationship between six independent variables (MCQ Enthusiasm, Kick-Off Attendance, Online Session Attendance, Discussion Activity, Reaction Test Completion, and Learning Test Completion) and the dependent variable of Essay Success, which was measured dichotomously as fail or success. The research subjects were 40 senior employees who occupied managerial positions one level below the director (General Manager/VP level) in various companies participating in the Online Leadership Development program. The participants were adult learners with extensive practical experience, making them particularly suitable for examining the predictive validity of different learning activities in executive-level online training.

The study employed a predictive correlational quantitative approach with ex-post facto data. The dependent variable, Essay Success, was coded as 0 for fail or not meeting the standard and 1 for success or passing well. The six independent variables were defined as follows: MCQ Enthusiasm referred to the intensity of formative quiz engagement; Kick-Off Attendance measured attendance at the opening session; Online Session Attendance captured participation in synchronous sessions; Discussion Activity evaluated the quality and frequency of contributions to discussion forums and case studies; Reaction Test Completion indicated the completeness of perception surveys; and Learning Test Completion assessed the completeness of daily material comprehension tests.

Given that the dependent variable was dichotomous, the data analysis was conducted using Binary Logistic Regression with the Backward Stepwise method to identify the most efficient and valid prediction model. This approach allowed the study to examine the relative predictive power of multiple learning activity variables simultaneously, providing rigorous empirical evidence on which instruments were most relevant for assessing executive-level competencies in online leadership development.

RESULT AND DISCUSSION

Goodness of Fit The results of the Omnibus Tests of Model Coefficients test show a significance value of 0.000 (< 0.05), which means that the model is worth using. The Nagelkerke R Square value of 0.630 shows that 63% of the success of the participants' essays can be explained by the variables in this study.

Significance Test Results (Partial) Based on regression analysis, the following relationship patterns were found:

**Table 1. Summary of the Influence of Variables on Essay Success Dependent Variables:
Essay Success (0 = Fail, 1 = Success)**

Independent Variables	Coefficient (B)	Standard Error (S.E.)	Significance (p-value)	Odds Ratio (Exp(B))	Status in Model
Discussion Activity	2.965	1.012	\$0.003^{^*}\$	19.398	Significant
Constanta	-4.120	1.250	0.001	0.016	-
<i>MCQ Enthusiasm</i>	-	-	0.452	-	<i>Removed</i>
<i>Kick-Off Attendance</i>	-	-	0.812	-	<i>Removed</i>
<i>Online Presence</i>	-	-	0.655	-	<i>Removed</i>
<i>RT Solutions</i>	-	-	0.320	-	<i>Removed</i>
<i>LT Solutions</i>	-	-	0.298	-	<i>Removed</i>

Source: Primary data processed (2026)

Model Statistical Description:

- a. N Sample: 40 Participants
- b. Nagelkerke R2: 0.630 (Model explains 63% data variance)
- c. Omnibus Tests of Model Coefficients: p = 0.000 (Model Layak/Fit)
- d. Significant at alpha level = 0.05

Based on the results of the binary logistic regression analysis presented in Table 1, it was found that of the six independent variables tested, only the Discussion Activity variable survived in the final model as a significant predictor of essay success ($p = 0.003 < 0.05$). The regression coefficient for the Discussion Activity variable was positive at 2.965, indicating a strong direct correlation with the subject. The most prominent finding is indicated by the Odds Ratio value of 19,398. Statistically, this figure can be interpreted as meaning that participants who have active involvement in discussion forums have a 19.4 times greater tendency or probability to write a successful essay compared to passive participants, assuming other variables are constant.

On the other hand, other activity variables, namely MCQ Enthusiasm, Attendance (both Kick-Off and Online sessions), and Test Completion level (Reaction and Learning Test), were eliminated from the model in the stepwise stage. This is because the significance value of these variables is above the real level ($p > 0.05$), which means that the administrative variables and objective tests do not have real predictive power on the competence of preparing strategic essays in this group of participants. Thus, the results show that variables such as attendance and objective test scores (MCQ/Learning Test) are excluded from the model because they are not significant. Only Discussion Activity has been shown to be a strong predictor. Senior participants who were actively discussing were 19.4 times more likely to successfully compose essays than those who were passive.

The results of this study provide in-depth insights into the characteristics of learning evaluation for the executive level: Relevance of Discussion for Adult Learners (Andragogy) The finding that Discussion Activity is the only predictor of success is very much in line with Andragogy theory (Knowles). For senior employees, learning is no longer about one-way knowledge transfer, but rather knowledge construction through sharing experiences. Leadership essays demand the ability to analyze problems, make decisions, and strategic

arguments. This competence is honed through the dialectical process in the discussion forum, not through memorizing the material. Therefore, the discussion rubric instrument has the highest predictive validity of the essay.

The ineligibility of the Objective Test (MCQ/Learning Test) as a Predictor of MCQ Enthusiasm Variables and Learning Test Completion has been proven to have no effect. This indicates a cognitive level gap. The MCQ instrument generally measures the levels of Remembering (C1) and Understanding (C2), while the demands of a prospective director's duties (as reflected in the Essay) are at the level of Evaluating (C5) and Creating (C6). An executive may not be enthusiastic or not score perfectly on technical/theoretical tests, but has a qualified strategic understanding. This suggests objective test instruments have low predictive validity for top-level training contexts.

Presence vs Engagement The fact that Kick-Off and Online Session Attendance does not affect the success of the essay is critical for the presence-based evaluation system. At the senior employee level, physical attendance (zoom login/LMS) is often only a formality (meeting training KPIs) and does not necessarily reflect cognitive engagement. The quality of strategic thinking in an essay is not determined by how diligently they are "absent", but how deeply they engage in problem-solving (discussion).

CONCLUSION

In online leadership learning for senior employees, Discussion Activeness emerged as the most valid predictor of strategic competency, as measured by Essay performance, whereas conventional evaluation instruments such as attendance and multiple-choice tests (MCQs) were ineffective for predicting executive-level success. These findings suggest that leadership training programs should reduce reliance on objective tests and place greater emphasis on collaborative and discussion-based assessments. Future research could explore how integrating peer feedback, case-based simulations, or reflective assignments alongside discussion activities further enhances the prediction of strategic competencies in executive online learning contexts.

REFERENCES

- Andargie, A., Amogne, D., & Tefera, E. (2025). Effects of project-based learning on EFL learners' writing performance. *PloS One*, *20*(1), e0317518.
- Arabiolo, O. O., & Chinyere, O. J. (2023). Leadership development programs and the management of competence for educational administrator's effectiveness. *Policy and Management*, *5*(3), 262–276.
- Anderson, L. W., & Krathwohl, D. R. (2001). A taxonomy for learning, teaching, and assessing.
- Bird, A., & Stevens, M. J. (2025). Assessing global leadership competencies. In *Global Leadership* (pp. 152–184). Routledge.
- Castells, N., Minguela, M., & Nadal, E. (2023). Writing a synthesis versus reading: strategies involved and impact on comprehension. *Reading and Writing*, *36*(4), 849–880.
- Darling-Hammond, L., Wechsler, M. E., Levin, S., & Tozer, S. (2022). Developing Effective Principals: What Kind of Learning Matters?. *Learning Policy Institute*.
- Garrison, D. R. (2011). E-learning in the 21st century: A framework for research and practice.
- Gay, F. (2022). Investigating the effects of technology-enhanced vocabulary learning strategy

- instruction on supporting mixed-ability EMI learners studying a journalism and communication major: An action research project at a university in China. *Journal of English for Academic Purposes*, 55, 101068.
- Kezar, A., & Carducci, R. (2023). Revolutionizing leadership development: Lessons from research and theory. In *Rethinking leadership in a complex, multicultural, and global environment* (pp. 1–38). Routledge.
- Khotimah, H., Manshur, U., Zaini, A. W., Sanjani, M. A. F., & Suhermanto, S. (2024). Increasing the competence of Islamic religious education teachers from a madrasah-based management perspective. *Managere: Indonesian Journal of Educational Management*, 6(1), 13–26.
- Knowles, M. S. (1984). *Andragogy in Action*. San Francisco: Jossey-Bass.
- Mallahi, O. (2024). Exploring the status of argumentative essay writing strategies and problems of Iranian EFL learners. *Asian-Pacific Journal of Second and Foreign Language Education*, 9(1), 19.
- Mashele, W., & Alagidede, I. P. (2022). The appropriate leadership styles in times of crisis: a study of women in senior leadership positions in corporate South Africa. *Gender in Management: An International Journal*, 37(4), 494–508.
- Philip, J., Gilli, K., & Knappstein, M. (2023). Identifying key leadership competencies for digital transformation: evidence from a cross-sectoral Delphi study of global managers. *Leadership & Organization Development Journal*, 44(3), 392–406.
- Rahman, M. M., Salamzadeh, A., Dana, L. P., & Braga, V. (2025). Work-family balance, digital leadership skills, and family social support as the predictors of subjective well-being of Y-generation managers. *Strategic Change*, 34(3), 453–465.
- Schmidt, D. H., Van Dierendonck, D., & Weber, U. (2023). The data-driven leader: developing a big data analytics leadership competency framework. *Journal of Management Development*, 42(4), 297–326.
- Stahl, M., Biermann, L., Nehring, A., & Wachsmuth, H. (2024). Exploring LLM prompting strategies for joint essay scoring and feedback generation. *Proceedings of the 19th Workshop on Innovative Use of NLP for Building Educational Applications (BEA 2024)*, 283–298.
- Vongswasdi, P., Leroy, H., Claeys, J., Anisman-Razin, M., & Van Dierendonck, D. (2024). Beyond developing leaders: Toward a multinarrative understanding of the value of leadership development programs. *Academy of Management Learning & Education*, 23(1), 8–40.
- Wong, L., Gerras, S., Kidd, W., Pricone, R., & Swengros, R. (2022). *Strategic leadership competencies*. JSTOR.