



Impact of School Leadership on Students' Learning Outcomes in Vocational Agricultural Education

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Abstract

The study investigated the impact of school leadership on students' learning outcomes in vocational agricultural education. Two clearly defined objectives, research questions and hypotheses guided the study, focusing on the impact of instructional leadership and transformational leadership on students' learning outcomes. The study employed the descriptive survey research design. The population consisted of 86 Agricultural Science Education students from 200 level to 400 level in Niger Delta University, and the entire population was studied because the census approach was adopted due to the manageable size of the population. Data were collected using a structured questionnaire developed in two sections and rated on a four-point scale. The instrument was validated by two experts, and reliability was determined using the test-retest method with the Pearson product-moment correlation coefficient, with a coefficient score of 0.85. A total of 63 questionnaires representing a 73% response rate were retrieved and used for analysis. Simple percentages were used for demographic data, mean and standard deviation were used to answer the research questions, and the independent-samples t-test was used to test the hypotheses at a 0.05 level of significance. The findings indicated that instructional leadership and transformational leadership positively influenced students' learning outcomes, while gender did not significantly affect students' perceptions of these leadership impacts. Based on these findings, the study recommends that school leaders in vocational agricultural education should strengthen instructional leadership practices by prioritizing regular supervision of classroom teaching and practical agricultural sessions, ensuring systematic monitoring of students' learning progress, and supporting teachers through feedback and professional development.

Keywords: Impact. School leadership, instructional leadership, transformational leadership, learning outcomes, vocational agricultural education.

Introduction

School leadership has increasingly been recognized as a critical determinant of educational effectiveness across diverse instructional contexts. Within contemporary educational discourse, leadership is no longer perceived merely as administrative oversight but as a dynamic process that shapes teaching quality, institutional climate, and ultimately students' academic and practical achievements. Empirical scholarship consistently affirms that leadership practices influence curriculum implementation, teacher motivation, resource allocation, and student engagement, all of which are central to learning outcomes (Hallinger, 2011; Leithwood et al., 2020). In vocational

agricultural education, where instruction combines theoretical knowledge with hands-on technical practice, the influence of leadership becomes even more pronounced because effective coordination, supervision, and innovation are required to align practical training with academic standards and labour-market expectations.

Vocational agricultural education occupies a strategic position in national development agendas, particularly in economies seeking to strengthen food security, agribusiness innovation, and rural transformation. It equips learners with occupational competencies, entrepreneurial orientation, and applied scientific understanding necessary for sustainable agricultural productivity. However, the effectiveness of such programmes depends not solely on curriculum design but also on the quality of institutional leadership guiding implementation. School leaders shape the professional culture within which agricultural science teachers operate, determine instructional priorities, and foster partnerships with industry stakeholders. Where leadership is purposeful and supportive, vocational programmes are more likely to achieve improved student performance, practical proficiency, and positive career aspirations (Bush, 2020; Robinson & Gray, 2019).

Among the various leadership approaches examined in educational research, instructional leadership and transformational leadership have attracted sustained scholarly attention. Instructional leadership emphasizes the leader's direct involvement in teaching and learning processes, including supervision of instruction, monitoring of student progress, and professional support for teachers. This approach prioritizes academic standards and instructional coherence, thereby creating structured conditions that enhance student achievement (Hallinger & Wang, 2015). In the context of vocational agricultural education, instructional leadership may manifest through systematic oversight of practical farm activities, laboratory demonstrations, assessment alignment, and teacher mentoring, all of which are expected to strengthen students' mastery of agricultural concepts and practices.

Transformational leadership, by contrast, centers on inspiring and motivating staff and students toward shared institutional goals. It involves articulating a compelling vision, fostering collaboration, encouraging innovation, and promoting professional growth. Transformational leaders build trust, stimulate intellectual engagement, and cultivate an environment conducive to sustained improvement (Leithwood et al., 2020). In vocational agricultural education, where innovation, adaptability, and community engagement are essential, transformational leadership may encourage teachers to adopt modern agricultural technologies, integrate experiential learning strategies, and cultivate entrepreneurial mindsets among students. Such leadership practices may indirectly influence students' learning outcomes by enhancing teacher commitment and institutional climate.

Despite extensive literature linking school leadership to general academic achievement, there remains limited empirical focus on its specific impact within vocational agricultural education, particularly regarding distinct leadership styles and gender-based perceptions among students. Many studies aggregate leadership practices without disaggregating their differential contributions to specialized vocational settings. Furthermore, the extent to which male and female agricultural science students perceive leadership influences similarly or differently remains under-explored. This gap underscores the need for targeted investigation into how instructional and transformational leadership styles shape students' learning outcomes within vocational agricultural education programmes.

Against this backdrop, the present study examined the impact of school leadership on students' learning outcomes in vocational agricultural education, with specific emphasis on instructional leadership and transformational leadership.

Statement of the Problem

Although school leadership is widely acknowledged as a crucial driver of educational quality, vocational agricultural education continues to face persistent concerns regarding students' learning outcomes, particularly in contexts where effective instruction depends on the coordination of both classroom learning and structured practical experiences. In many vocational agricultural programmes, students' performance may be undermined by weak instructional supervision, inconsistent practical training schedules, limited pedagogical support for teachers, and inadequate alignment between assessment practices and competency-based learning targets. Where leadership does not prioritize teaching and learning as an institutional core, teachers may receive limited guidance on lesson delivery, practical demonstrations, learner assessment, and remediation strategies, thereby weakening students' academic understanding and hands-on proficiency. Research suggests that leadership practices shape the conditions for effective teaching, including instructional quality, teacher professional learning, and school climate, which collectively influence student achievement outcomes (Hallinger, 2011; Robinson & Gray, 2019).

More specifically, there remains an empirical gap in establishing how distinct leadership approaches particularly instructional leadership and transformational leadership differentially influence students' learning outcomes within vocational agricultural education. While instructional leadership is theorized to strengthen learning through direct focus on curriculum delivery, supervision, and monitoring of progress, transformational leadership is expected to improve outcomes indirectly by motivating staff, strengthening shared vision, and enhancing commitment to innovation and improvement (Hallinger & Wang, 2015; Leithwood et al., 2020). However, the relative impact of these leadership styles within vocational agricultural settings is insufficiently clarified, and the potential variation in perceptions between male and female agricultural science students is not consistently addressed in existing scholarship. Consequently, school leaders, curriculum planners, and policy stakeholders may lack evidence-based guidance on which leadership practices most strongly support improved learning outcomes in vocational agricultural education, thereby justifying the need for the present study to generate context-relevant findings that can inform leadership development and programme improvement efforts.

Objectives

The main objective of this study is to examine the Impact of school leadership on students' learning outcomes in vocational agricultural education. The study will specifically determine the impact of the following specific objectives:

1. Instructional leadership on students' learning outcomes in vocational agricultural education
2. Transformational leadership on students' learning outcomes in vocational agricultural education

Research Questions

The following research questions guided the study

1. What is the impact of Instructional leadership on students' learning outcomes in vocational agricultural education?
2. What is the impact of Transformational leadership on students' learning outcomes in vocational agricultural education?

Hypotheses

The following research hypotheses were tested at 0.05 level of significance

1. There is no significant difference in the mean response of male and female agricultural science student respondents of Instructional leadership on students' learning outcomes in vocational agricultural education
2. Transformational leadership on students' learning outcomes in vocational agricultural education

Methodology

The study employed the descriptive survey design. A descriptive survey design was appropriate because it enabled the study to collect data from a defined population and describe respondents' views as they existed at the time of the study without manipulating any variables (Nwankwo, 2016). In this study, the descriptive survey design was considered appropriate because data were gathered from Agricultural Science students and described their perceptions of school leadership practices and how such practices influenced their learning outcomes in vocational agricultural education. The design was therefore consistent with the study's purpose, which focused on examining the influence of instructional leadership and transformational leadership on students' learning outcomes as perceived by the respondents (Creswell & Creswell, 2018). The population of the study consisted of all 86 Agricultural Science Education students from 200 level to 400 level in the Department of Agricultural Science Education, Niger Delta University. The selection of this population was based on the premise that students within these levels had sufficient exposure to school leadership practices, instructional processes, and vocational agricultural learning experiences needed to provide informed responses relating to the variables investigated in this study. The population figure was derived from departmental records for the relevant academic session, which served as the official basis for defining the study population frame. No sample was drawn for the study because the population size was relatively small. Consequently, the study adopted the census sampling technique by involving the entire population of 86 Agricultural Science Education students. This approach minimized sampling error and ensured that all eligible respondents within the defined population had the opportunity to participate, thereby enhancing the representativeness of the study outcomes for the target group (Creswell & Creswell, 2018). The instrument used for data collection was a structured questionnaire developed for the study and titled "School Leadership and Students' Learning Outcomes in Vocational Agricultural Education Questionnaire." The questionnaire was structured in two sections. Section A collected respondents' demographic information, while Section B contained items structured to measure respondents' perceptions of instructional leadership, transformational leadership, and students' learning outcomes in vocational agricultural education, in line with the study objectives. The instrument was based on a four-point rating scale of Strongly Agreed (SA), Agreed (A), Disagreed (D), and Strongly Disagreed (SD), to ensure consistency in responses and ease of quantitative analysis. The four-point rating scale was considered suitable because it encouraged definite choices and supported the computation of mean scores for decision-making based on the established criterion mean value (Allen & Seaman, 2007). The content and construct validity of

the instrument was established through expert validation. Two experts reviewed the instrument: one expert in the relevant field within the university setting and one expert in the Test and Measurement unit of the Department of Counselling and Educational Psychology, Niger Delta University. The experts evaluated the instrument to ensure that the items adequately covered the study variables, were clearly stated, and aligned with the objectives, research questions, and hypotheses. Their comments and corrections guided the revision relating to item clarity, relevance, and adequacy of coverage, after which the final instrument was finalized for administration, consistent with standard educational measurement expectations (Taherdoost, 2016).

The reliability of the instrument was determined using the test–retest method. The instrument was administered to 20 Agricultural Education students in Delta State University, Abraka who were not part of the study population, in order to avoid contaminating the main respondents. The questionnaire was administered twice within an interval of two weeks, and the two sets of scores obtained were correlated using the Pearson Product–Moment Correlation Coefficient (PPMCC) to establish the stability of the instrument over time and a reliability coefficient of 0.85 was obtained. This procedure was considered appropriate because test–retest reliability specifically assesses consistency of responses across time when the measured construct is assumed to be stable within the interval (Field, 2018). The researcher administered the instrument personally with the support of two research assistants to ensure effective coverage and proper clarification where necessary. The researcher and assistants visited the respondents, introduced the purpose of the study, assured participants of confidentiality, and administered the questionnaire. Respondents were guided on how to complete the instrument, after which a collection point and time were agreed for retrieval. A return rate of 73% was used, implying that 63 completed copies of the questionnaire were retrieved and found usable for data analysis (that is, 73% of the population of 86 respondents), which formed the basis for computing descriptive and inferential statistics in the study (Fowler, 2014). Data collected were analyzed using appropriate descriptive and inferential statistical techniques. Simple percentages were used to summarize respondents’ demographic information. For the research questions, mean and standard deviation were used to determine the pattern of responses to each item, and the decision rule was based on a criterion mean of 2.50. The criterion mean was derived arithmetically from the four-point scale as $4 + 3 + 2 + 1 = 10$, and $10/4 = 2.50$, indicating that any item with a mean score of 2.50 and above was accepted, while any item with a mean score below 2.50 was rejected. This decision framework ensured consistency in interpreting respondents’ perceptions across the variables measured. To test the hypotheses at the 0.05 level of significance, the independent samples t-test was used to determine whether there was a significant difference in the mean responses of male and female Agricultural Science Education students regarding the perceived impact of school leadership dimensions on students’ learning outcomes in vocational agricultural education (Field, 2018).

Results

Demographic Data of Respondents

Table 1: Simple Percentage Analysis on the Retrieved and Not-retrieved Questionnaires

Questionnaire Status	Frequency (N)	Percentage (%)
Retrieved	63	73
Not-retrieved	23	27

Total Distributed	86	100
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Source: fieldwork, 2026

Table 1 shows that 86 questionnaires were distributed to Agricultural Science Education students (200–400 level) in Niger Delta University, out of which 63 questionnaires were retrieved, representing 73% of the total distributed instruments. However, 23 questionnaires were not retrieved, accounting for 27%. The retrieved questionnaires (N = 63) were therefore regarded as adequate and were used for the analysis of research questions and hypotheses.

Table 2: Simple Percentage Analysis Based on Gender

Gender	Frequency (N)	Percentage (%)
Male	23	37
Female	40	63
Total	63	100

Source: fieldwork, 2026

Table 2 indicates that the respondents were predominantly female. Specifically, 40 respondents were female, representing 63% of the retrieved questionnaires, while 23 respondents were male, representing 37%. This distribution implies that the results of the study reflect perceptions more strongly from female Agricultural Science students, which is important to note when interpreting the overall pattern of responses across instructional leadership, transformational leadership, and students' learning outcomes in vocational agricultural education.

Results for Research Questions

Research Question One: What is the impact of Instructional leadership on students' learning outcomes in vocational agricultural education?

Table 3: Mean and standard deviation analysis of male and female Agricultural Science students on the impact of Instructional leadership on students' learning outcomes in vocational agricultural education

S/N	Item statement	Male		Female		Total		Remark
		\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	
1	Instructional supervision by school leaders improved my understanding of vocational agricultural topics and increased my academic performance.	3.18	0.90	3.28	0.86	3.24	0.88	Agreed
2	Regular monitoring of classroom teaching and practical sessions by school leaders enhanced my practical competence in agricultural activities.	3.22	0.88	3.31	0.84	3.27	0.86	Agreed

3	Provision of timely feedback on learning progress by school leaders strengthened my confidence and motivation to learn agricultural science.	3.09	0.96	3.24	0.89	3.19	0.92	Agreed
4	School leaders' emphasis on clear learning targets improved my ability to meet assessment requirements in vocational agriculture.	3.14	0.92	3.26	0.87	3.22	0.89	Agreed
5	Support for teachers' professional improvement by school leaders positively affected my learning outcomes in vocational agricultural education.	3.20	0.89	3.29	0.85	3.26	0.87	Agreed
Grand Mean		3.17	0.91	3.28	0.86	3.24	0.88	Agreed

Source: Fieldwork, 2026. Total Respondents =73, Male =23, Female = 40

The results in Table 3 indicate that respondents agreed that instructional leadership had a positive impact on students' learning outcomes in vocational agricultural education, as all item means for male, female, and total responses exceeded the criterion mean of 2.50. The total mean scores ranged from 3.19 to 3.27, showing consistent agreement that instructional supervision, monitoring of teaching and practical sessions, and leaders' support for structured learning targets improved both cognitive understanding and practical competence. Importantly, the female mean scores were higher across all items than the male mean scores, suggesting that female Agricultural Science Education students more strongly perceived instructional leadership practices as improving their learning outcomes. Overall, the grand mean of 3.24 confirmed that instructional leadership was perceived to meaningfully strengthen students' academic achievement, skill development, motivation, and assessment readiness in vocational agricultural education, which is consistent with scholarship that frames instructional leadership as a direct driver of teaching quality and student achievement outcomes (Hallinger, 2011; Robinson & Gray, 2019).

Research Question Two: What is the impact of Transformational leadership on students' learning outcomes in vocational agricultural education?

Table 4: Mean and standard deviation analysis of male and female Agricultural Science students on the impact of Transformational leadership on students' learning outcomes in vocational agricultural education

S/N	Item statement	Male		Female		Total		Remark
		\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	
1	School leaders' encouragement and inspiration increased my interest and active participation in vocational agricultural learning.	3.11	0.94	3.27	0.86	3.21	0.90	Agreed

2	School leaders' clear vision for vocational agriculture improved my commitment to achieving better learning outcomes.	3.07	0.98	3.23	0.88	3.17	0.92	Agreed
3	School leaders' recognition of students' efforts improved my motivation to perform well in agricultural science and practical tasks.	3.15	0.91	3.30	0.84	3.24	0.87	Agreed
4	Leaders' support for innovation (such as modern farming methods and practical projects) improved my problem-solving abilities in agriculture.	3.12	0.93	3.29	0.85	3.23	0.89	Agreed
5	School leaders' promotion of a positive learning climate improved my confidence and learning outcomes in vocational agricultural education.	3.18	0.90	3.33	0.83	3.27	0.86	Agreed
Grand Mean		3.13	0.93	3.28	0.85	3.22	0.89	Agreed

Source: Fieldwork, 2026. Total Respondents =73, Male =23, Female = 40

Table 4 shows that respondents agreed that transformational leadership positively impacted students' learning outcomes in vocational agricultural education, given that all total mean scores were above 2.50. The total means (3.17–3.27) suggest that students perceived leaders' inspirational behaviours, vision-sharing, recognition of effort, support for innovation, and promotion of a positive learning climate as contributing to better participation, motivation, confidence, and improved vocational learning outcomes. As with the previous table, female respondents reported higher mean scores than male respondents across all items, reinforcing that the study's findings reflect stronger perceived leadership impacts among female Agricultural Science Education students. The grand mean of 3.22 implies that transformational leadership was perceived as a meaningful contributor to learning outcomes, largely through motivational and climate-based pathways, aligning with the view that transformational leadership improves learning indirectly by shaping commitment, engagement, and supportive learning environments.

Test of Hypotheses

Hypothesis One: There is no significant difference in the mean response of male and female agricultural science student respondents of Instructional leadership on students' learning outcomes in vocational agricultural education.

Table 5: Independent samples t-test analysis of male and female Agricultural Science students' mean responses on the impact of instructional leadership on students' learning outcomes in vocational agricultural education

Gender	N	Mean	SD	df	t-cal	Sig. level	Decision
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Male	23	3.17	0.91				
Female	40	3.28	0.86	61	0.48	0.63	Not Significant
Total	63	3.24	0.88				

Source: Fieldwork, 2026. Not Significant at 0.05 Alpha level with 61 degrees of freedom

The result in Table 5 showed that there was no statistically significant difference in the mean responses of male and female Agricultural Science Education students regarding the impact of instructional leadership on students' learning outcomes in vocational agricultural education. This was because the computed significance value of 0.63 was greater than the 0.05 level of significance, implying that the observed mean difference between male (M = 3.17, SD = 0.91) and female (M = 3.28, SD = 0.86) respondents was not large enough to be attributed to a meaningful gender-based variation in perception. In practical terms, both male and female students generally agreed that instructional leadership practices positively influenced their learning outcomes, and the slight advantage in female mean perception did not translate into a significant difference, consistent with recommended inferential reporting practices for group comparisons in educational research.

Hypothesis Two: Transformational leadership on students' learning outcomes in vocational agricultural education.

Table 6: Independent samples t-test analysis of male and female Agricultural Science students' mean responses on the impact of transformational leadership on students' learning outcomes in vocational agricultural education

Gender	N	Mean	SD	df	t-cal	Sig. level	Decision
Male	23	3.13	0.93				
Female	40	3.28	0.85	61	0.65	0.52	Not Significant
Total	63	3.22	0.89				

Source: Fieldwork, 2026. Not Significant at 0.05 Alpha level with 61 degrees of freedom

Table 6 indicated that there was no statistically significant difference in the mean responses of male and female Agricultural Science Education students on the perceived impact of transformational leadership on students' learning outcomes in vocational agricultural education. The computed significance value of 0.52 exceeded the 0.05 threshold, indicating that gender did not significantly differentiate students' perceptions of how transformational leadership influenced learning outcomes. Although female respondents recorded a higher mean score (M = 3.28, SD = 0.85) compared with male respondents (M = 3.13, SD = 0.93), the difference remained statistically insignificant. Substantively, this suggests that students regardless of gender held a broadly similar view that transformational leadership behaviors, such as encouragement, vision-sharing, recognition of effort, and supportive learning climate, contributed positively to learning outcomes in vocational agricultural education, in line with standard interpretations of non-significant t-test outcomes.

Discussion of Findings

The findings of this study indicated that school leadership exerted a positive influence on students' learning outcomes in vocational agricultural education, as reflected in the consistently high mean ratings across instructional leadership and transformational leadership items. In relation to instructional leadership, respondents generally agreed that leadership practices centered on supervision of instruction, monitoring of learning progress, emphasis on clear learning targets, and support for teacher improvement improved their academic understanding and practical competence in vocational agriculture. This pattern suggests that when school leaders prioritized teaching and learning through structured oversight, students perceived stronger instructional clarity, better-organized practical experiences, and improved preparedness for assessment tasks. Such an outcome aligns with the broader leadership literature, which argues that instructional leadership has a more direct relationship with student achievement because it targets the core technical processes of teaching, curriculum implementation, and feedback mechanisms that shape learners' outcomes (Hallinger, 2011). In vocational agricultural education specifically, where learning outcomes require both conceptual mastery and performance-based competence, leadership attention to lesson delivery and practical supervision plausibly strengthened students' confidence and achievement by ensuring that teachers' instructional efforts remained coherent and outcomes-driven.

The study also showed that transformational leadership was perceived to positively impact students' learning outcomes, particularly through motivation, engagement, and the creation of a supportive learning climate. Respondents agreed that leaders' encouragement, vision-sharing, recognition of effort, and support for innovation promoted learners' interest, participation, and problem-solving capacity in vocational agricultural learning experiences. This suggests that students experienced leadership influence not only through direct instructional management but also through the psychological and social conditions that sustain learning. The implication is that transformational leadership may have operated by shaping the school environment to be more aspirational and learner-centered, thereby improving students' willingness to participate actively in both classroom learning and practical agricultural tasks. This interpretation is consistent with research perspectives that transformational leadership contributes to improved educational outcomes by strengthening commitment, collective purpose, and professional motivation, which subsequently enhance the quality of instruction and learner engagement (Leithwood et al., 2020). In vocational settings, where innovation and adaptation are essential, leadership that encourages experimentation with improved methods and practical projects can reasonably support deeper learning and transferable agricultural competencies.

Furthermore, the hypothesis testing results indicated that gender did not significantly differentiate students' perceptions of the impact of instructional leadership and transformational leadership on learning outcomes. Although female students consistently recorded higher mean scores than male students across both leadership dimensions, the independent samples t-test results showed that these differences were not statistically significant at the 0.05 level. This outcome implies that both male and female Agricultural Science students broadly shared similar views regarding how leadership practices influenced their learning outcomes, and that the observed differences in mean scores likely reflected minor variations rather than meaningful gender-based divergence. The study's demographic pattern, which reflected more female respondents, suggests that female perceptions were more prominent in the dataset; however, the non-significant results indicate that leadership impacts, as perceived by students, were not dependent on gender. This finding is important for practice because it implies that leadership improvements targeted at enhancing vocational agricultural learning outcomes may be expected to benefit students broadly, without

the need to design fundamentally separate leadership strategies for male and female learners, provided equitable learning conditions are maintained (Bush, 2020).

Conclusion

The study concluded that school leadership had a positive impact on students' learning outcomes in vocational agricultural education, as Agricultural Science Education students reported agreement that both instructional leadership and transformational leadership practices enhanced their learning experiences and outcomes. Specifically, the findings indicated that instructional leadership practices such as supervision of instruction, monitoring of teaching and practical sessions, emphasis on clear learning targets, and support for teachers' professional improvement were perceived as strengthening students' academic understanding, practical competence, motivation, and assessment readiness. In the same way, transformational leadership practices such as encouragement, vision-sharing, recognition of students' efforts, support for innovation, and promotion of a positive learning climate were perceived as improving students' interest, participation, confidence, and problem-solving abilities in vocational agricultural education. The study further concluded that there was no significant difference in the mean responses of male and female students on the perceived impact of instructional leadership and transformational leadership on students' learning outcomes, implying that leadership influence was broadly similar across gender groups, even though female respondents recorded slightly higher mean ratings.

Recommendation

Based on these conclusions, it was recommended that school leaders in vocational agricultural education should strengthen instructional leadership practices by prioritizing regular supervision of classroom teaching and practical agricultural sessions, ensuring systematic monitoring of students' learning progress, and supporting teachers through feedback and professional development that directly targets improved instructional delivery and practical demonstration quality. It was also recommended that school leaders should intensify transformational leadership practices by creating a clear and motivating vision for vocational agricultural education, recognizing students' efforts to reinforce sustained engagement, and fostering a supportive learning climate that encourages confidence and active participation in both theory and practice. In addition, it was recommended that institutional leadership development programmes should integrate training that combines strong instructional leadership with transformational competencies, so that leaders are equipped to support learning outcomes both directly through instructional management and indirectly through motivation and school climate. Finally, it was recommended that stakeholders responsible for vocational agricultural education should support leadership effectiveness through adequate provision of instructional resources, practical learning facilities, and innovation-support mechanisms, such as school-based agricultural projects and partnerships that enhance experiential learning opportunities, so that leadership efforts translate into measurable improvements in students' learning outcomes.

References

- Allen, I. E., & Seaman, J. (2007). *Making the grade: Online education in the United States, 2006—Southern edition*. Sloan Consortium.
- Bush, T. (2020). *Theories of educational leadership and management* (5th ed.). SAGE Publications.

- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.
- Field, A. (2018). *Discovering statistics using IBM SPSS statistics* (5th ed.). SAGE Publications.
- Fowler, F. J. (2014). *Survey research methods* (5th ed.). SAGE Publications.
- Hallinger, P. (2011). Leadership for learning: Lessons from 40 years of empirical research. *Journal of Educational Administration*, 49, 125–142. <https://doi.org/10.1108/09578231111116699>
- Hallinger, P., & Wang, W.-C. (2015). *Assessing instructional leadership with the Principal Instructional Management Rating Scale*. Springer. <https://doi.org/10.1007/978-3-319-15533-3>
- Leithwood, K., Harris, A., & Hopkins, D. (2020). Seven strong claims about successful school leadership revisited. *School Leadership & Management*, 40(1), 5–22. <https://doi.org/10.1080/13632434.2019.1596077>
- Nwankwo, O. C. (2016). *A practical guide to research writing for students of research enterprise* (5th ed.). University of Port Harcourt Press.
- Robinson, V. M. J., & Gray, E.-S. (2019). What difference does school leadership make to student outcomes? *Journal of the Royal Society of New Zealand*, 49(2), 171–187. <https://doi.org/10.1080/03036758.2019.1582075>
- Taherdoost, H. (2016). Validity and reliability of the research instrument: How to test the validation of a questionnaire/survey in a research. *International Journal of Academic Research in Management*, 5, 28–36.