

DOI: 10.5281/zenodo.19671622

INTEGRATING TRANSFORMATIVE LEADERSHIP AND SERVANT LEADERSHIP FOR A REFLECTIVE QUALITY CULTURE: DEVELOPMENT AND INITIAL VALIDATION OF THE TSL-SQB MODEL IN VOCATIONAL CENTRES OF EXCELLENCE

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Received: 04/03/2026

Accepted: 02/04/2026

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ABSTRACT

Strengthening a reflective quality culture in Vocational Education Centres of Excellence requires a leadership

approach that is not only oriented toward strategic transformation but also toward service and the internalisation of quality values. This study aims to develop and validate the Transformative Servant Leadership-School Quality Based (TSL-SQB) model as an integrated leadership framework for strengthening a reflective quality culture in the context of vocational education. This study employed a Research and Development (R&D) approach to develop and validate the TSL-SQB model. The content validity of the instrument was confirmed through expert evaluation using Aiken's V coefficient (0.88-1.00), accompanied by a reliability test prior to model implementation. The initial effectiveness of the model was evaluated using a one-group pretest-posttest pre-experimental design involving 21 participants from three Centres of Excellence vocational schools in Yogyakarta, consisting of principals, vice principals, teachers, and educational staff. The results indicate that the TSL-SQB model demonstrates high conceptual feasibility, with Aiken's V content validity values ranging from 0.88 to 1.00 and satisfactory instrument reliability. The initial effectiveness test using the one-group pretest-posttest design revealed a significant increase in reflective quality culture following model implementation ($\Delta = 6.19$; $p < 0.001$), with a very large effect size (Cohen's $d = 5.120$). These findings indicate that the integration of transformational orientation and ethical service strengthens the systemic internalisation of quality culture. Accordingly, the TSL-SQB model offers a more comprehensive leadership configuration than single-approach models in promoting organisational reflectivity.

KEYWORDS: Transformative Servant Leadership (TSL); Transformational Leadership; Servant Leadership; Reflective Quality Culture; Vocational Education.

1. INTRODUCTION

Vocational education plays a strategic role in competence-based economic development because it functions as a bridge between the education system and labour market demands. In a global landscape characterised by digitalisation, automation, and knowledge-based economies, vocational institutions are expected to produce graduates who are not only technically competent but also adaptive, reflective, and equipped with strong professional ethics (Wei & Nga, 2024; Kamaruzaman et al., 2025; Pan et al., 2025).

In the Indonesian context, this mandate is emphasised in Law Number 20 of 2003 on the National Education System, which positions Vocational High Schools as a key pillar in supplying skilled labour aligned with industry needs. However, macro-level indicators suggest that the effectiveness of vocational education continues to face serious challenges (Isbah et al., 2025). Data from Statistics Indonesia (Badan Pusat Statistik, 2024) indicate that the Open Unemployment Rate among vocational school graduates reached 8.62% in February 2024, the highest among all educational levels. These data indicate a persistent gap between graduates' competencies and the needs of business and industry. This condition highlights that the issue of quality in vocational schools does not solely lie in curriculum design or infrastructure, but also in the capacity of school leadership to manage quality transformation systematically and sustainably.

As a policy response, the Indonesian government launched the SMK Pusat Keunggulan (Centre of Excellence Vocational School) programme in 2021 through the Minister of Education and Culture Decree Number 165/M/2021. The programme focuses on strengthening partnerships with industry, developing *teaching factories*, and improving governance based on labour market needs (Ministry of Education, Culture, Research, and Technology, 2021). An evaluation conducted by the Centre for Education Standards and Policy (CESP) in collaboration with IDInsight (2024) indicates that structural interventions and industry partnerships have shown measurable progress (Ministry of Primary and Secondary Education, 2025). However, the report also emphasises that the sustainability of the programme largely depends on the leadership capacity of school principals to build an internal culture of reflective quality rather than merely implementing administrative programmes.

From the perspective of educational quality management, quality is understood as an organisational culture internalised in the values,

commitments, and professional practices of school members (Parveen et al., 2024; Soria-García & Martínez-Lorente, 2020; Stalmeijer et al., 2022). The philosophy of quality management introduced by Warm et al. (2018) emphasises that quality transformation must begin with leadership capable of fostering collective awareness and continuous improvement. In this regard, school principals should not be positioned merely as policy administrators, but as leaders of value-based change who cultivate a reflective culture of quality.

Within the educational leadership literature, two dominant paradigms are frequently used to explain school leadership effectiveness: transformational leadership and servant leadership (Swart et al., 2022; Ramdan et al., 2024; Hoch et al., 2016; Hossain et al., 2026). Transformational leadership originates from the concept of leadership proposed by Burns and was further developed by Bass in *Leadership and Performance Beyond Expectations*. This approach emphasises strategic vision, inspirational motivation, intellectual stimulation, and idealised influence as drivers of organisational change (Erdurmazli, 2024; Khan et al., 2022; Atoki et al., 2024). Numerous studies have demonstrated a positive relationship between transformational leadership, school effectiveness, and teacher commitment (Alzoraiki et al., 2023; Metaferia et al., 2023; Kareem et al., 2023; Freeman & Fields, 2020). Conversely, the servant leadership approach, introduced through the concept of *Servant Leadership*, positions service, empathy, and empowerment as the core of leadership (Sfetcu, 2021; Silver & Martin, 2021; Mahon, 2021). This model is believed to foster a participatory and humanistic organisational climate while strengthening trust and team cohesion.

Although both approaches have demonstrated positive contributions, their partial implementation presents conceptual dilemmas. Transformational leadership is often criticised for being overly oriented towards achieving vision and performance targets, thereby paying insufficient attention to ethical-relational dimensions. In contrast, servant leadership is sometimes considered to lack a structured framework for systemic change when responding to policy demands and industry-based quality standards, particularly in the context of the SMK Pusat Keunggulan (Wardani & Raihani, 2024; Mubarak, 2025; Pratomo & Arifin, 2020). In such circumstances, the need for a leadership model capable of integrating strategic transformation with service-oriented values becomes increasingly relevant.

Previous studies indicate that transformational

leadership significantly influences organisational commitment and school innovation (Jun & Lee, 2023; Hermanto et al., 2024), while servant leadership enhances teacher trust and participation (Shula, 2026; Saleha, 2024; Tasker-Mitchell & Attoh, 2019). However, most of these studies are correlational in nature and have not produced an integrated operational model developed through a research and development (R&D) approach. Within the context of the SMK Pusat Keunggulan programme, existing research has largely focused on policy implementation, curriculum reform, and industry partnerships, while the leadership dimension as a driver of school quality culture remains relatively underexplored empirically.

Therefore, several gaps remain evident: the absence of an integrative leadership model that systematically combines transformational and servant leadership within a school quality framework; the limited number of development-based studies that produce operational prototypes of educational leadership models; and the scarcity of contextual studies focusing on the SMK Pusat Keunggulan programme as a policy laboratory for vocational education reform. Addressing these gaps, this study proposes the conceptual proposition that integrating transformational and servant leadership principles within a school quality framework will produce a more comprehensive leadership model for fostering a reflective culture of quality. The Transformative Servant Leadership–School Quality Based (TSL-SQB) model is developed as a macro-theoretical synthesis integrating transformational vision, ethical service orientation, and collective quality awareness within a unified leadership structure.

Conceptually, this study develops the Grand Theory of Transformative Servant Leadership–School Quality Based (TSL-SQB) as a macro-theoretical synthesis integrating the transformational paradigm rooted in Leadership and Leadership and Performance Beyond Expectations, the service-oriented paradigm articulated in *Servant Leadership*, and the principles of continuous quality culture derived from quality management philosophy (Longshore & Bass, 1987; Greenleaf, 2007). Within this framework, leadership is positioned as an integrative mechanism that aligns strategic transformation, ethical service orientation, and reflective quality awareness within a systemic structure. The TSL-SQB perspective assumes that sustainable school quality cannot be achieved through the dominance of a single leadership paradigm; rather, it requires a dialectical integration

of structural transformation, relational empowerment, and the internalisation of quality values as an organisational culture. Accordingly, leadership is conceptualised as the primary driver in cultivating a reflective quality culture capable of bridging policy demands, industry needs, and the sustainable development of schools' internal capacities.

This study aims to develop and conduct an initial validation of the TSL-SQB model within the context of SMK Pusat Keunggulan in Yogyakarta City. Specifically, the study analyses existing leadership practices, identifies the limitations of current approaches, develops an integrative model based on theoretical synthesis, and examines the initial validity, feasibility, and effectiveness of the model through a Research and Development (R&D) approach. This study offers a dual contribution: theoretically, it proposes a conceptual integration of two leadership paradigms within a school quality framework; practically, it provides an operational prototype that can be replicated in vocational education contexts to foster a sustainable reflective culture of quality.

2. METHODOLOGY

2.1. Research Design

This research employed a Research and Development (R&D) approach to develop and conduct the initial validation of the Transformative Servant Leadership–School Quality Based (TSL-SQB) model in the context of SMK Pusat Keunggulan (Centre of Excellence Vocational School). The model development process was carried out systematically through the stages of needs analysis, conceptual model design, expert validation, limited trials, main field testing, revision, and model dissemination. In the main field testing stage, a one-group pretest–posttest pre-experimental design was used to evaluate changes in quality-oriented leadership before and after model implementation. This design was used to assess the initial operational effectiveness of the model as a leadership prototype in building a reflective quality culture. To ensure measurement accuracy, this study also applied psychometric testing of the instruments, including content validity, construct validity, internal reliability, and effect size estimation during the pretest–posttest stage. This approach ensures that the TSL-SQB model has a strong conceptual foundation as well as measurable initial empirical support.

2.2. Research Subjects

The research subjects were determined using purposive sampling, taking into account the compatibility of school characteristics with the context of developing a quality-based leadership model in SMK Pusat Keunggulan (Centre of Excellence Vocational School). The expert validation stage involved four validators, consisting of three academics in the field of educational leadership and one supervisor from a Centre of Excellence Vocational School, to assess theoretical consistency, model structure, and indicator relevance. The limited pilot test was conducted at one SMK Pusat Keunggulan in Yogyakarta City, involving the school principal with support from vice principals, teachers, and educational staff. Furthermore, the main field test was conducted in three SMK Pusat Keunggulan in Yogyakarta City, involving a total of 21 participants consisting of principals, vice principals, teachers, and educational staff to evaluate the acceptance and initial operational effectiveness of the TSL-SQB model.

2.3. Data Collection

Data collection was conducted using a multi-method approach aligned with the stages of model development. The techniques used included semi-structured interviews for needs analysis and expert validation, guided observations to identify transformation-oriented and service-oriented leadership practices, and documentation analysis of quality assurance documents, school work plans, and managerial policies. In addition, pretest–posttest questionnaires were used during the main field testing stage to measure changes in perceptions of quality-oriented leadership following the implementation of the TSL-SQB model. This approach enabled data triangulation to enhance the credibility and consistency of the research findings.

2.4. Research Instruments

The research instruments were developed through the operationalisation of variables derived from the conceptual structure of the TSL-SQB model. Leadership variables were measured through six main dimensions, namely vision and change, inspiration and motivation, innovation and creativity, service and empathy, individual empowerment, and trust and moral development. Meanwhile, the quality performance of Centres of Excellence Vocational Schools was measured through six dimensions, namely graduate competence, employment absorption, stakeholder satisfaction, positive school culture, learning innovation, and leadership and quality management.

All indicators were measured using a four-point Likert scale (1 = strongly disagree to 4 = strongly agree) without a neutral option in order to minimise central tendency bias and encourage decisive responses from respondents.

2.5. Instrument Validation Procedure

Instrument validation was conducted through expert judgment as part of the Research and Development (R&D) process to ensure the alignment of indicators with the dimensions of the Transformative Servant Leadership–School Quality Based (TSL-SQB) model and the quality indicators of SMK Pusat Keunggulan prior to field testing.

2.5.1. Content Validity

Content validity was analysed using Aiken's V coefficient to measure the level of agreement among experts regarding the relevance, clarity, and representativeness of each instrument item. The assessment was conducted by four validators using a four-point Likert scale. A V value ≥ 0.75 was categorised as valid, while a V value < 0.75 indicated that the item required revision.

2.5.2. Construct Feasibility

Validators also assessed the suitability of the indicators with the conceptual dimensions of the TSL-SQB model to ensure theoretical consistency between items and the representation of the constructs of transformational leadership, servant leadership, and school quality orientation. Validators also assessed the alignment of indicators with the conceptual dimensions of the TSL-SQB model to ensure theoretical consistency between instrument items and the constructs of transformational leadership, servant leadership, and school quality orientation.

2.5.3. Operational Clarity

The validated instrument was reviewed to ensure clarity of language, readability, and consistency of meaning in each statement. Interview and observation guidelines were structured based on the indicators of each model dimension to maintain consistency between empirical data and the theoretical constructs of the study.

2.6. Data Analysis Techniques

Data analysis techniques were adapted to the stages of development of the Transformative Servant Leadership–School Quality Based (TSL-SQB) model. The analysis was conducted in stages, including qualitative analysis for model exploration

and refinement, expert validation analysis for construct validity, quantitative analysis during the main field test, and documentation analysis as part of data triangulation.

2.7. Qualitative Data Analysis

Qualitative analysis followed the interactive model proposed by Miles, Huberman, and Saldaña (2014), which includes data condensation, data display, and conclusion drawing and verification. Data from interviews, observations, and documentation were analysed thematically to identify their alignment with the dimensions of the TSL-SQB model and the quality indicators of Centres of Excellence Vocational Schools. The results of this analysis were used as the basis for refining the model structure.

2.8. Expert Validation Analysis

Instrument and model validation were analysed using the Aiken's V Index to measure the level of expert agreement regarding item relevance and construct alignment. A V value ≥ 0.75 was considered valid, while values below this threshold required revision. This analysis ensured content and construct validity prior to the field testing stage.

2.9. Quantitative Data Analysis

In the field testing stage, a one-group pretest-posttest design was used. The analysis was conducted using descriptive comparative methods, including comparisons of mean pretest and posttest scores, the percentage of scores relative to the maximum score, and score differences (Δ) as indicators of the model's initial operational effectiveness.

2.10. Documentation Analysis And Triangulation

Documents were analysed through classification and content analysis aligned with the dimensions of the TSL-SQB model. The data were then triangulated with interview, observation, and questionnaire findings to enhance the credibility and consistency of the research results.

3. RESULTS

3.1. Initial Product Development

3.1.1. Quality Conditions Of The Centre Of Excellence Vocational School

The results of observations, interviews, and document reviews indicate that the quality of the SMK Pusat Keunggulan (Centre of Excellence

Vocational School) has developed at a structural level but has not yet been fully internalised as a culture of reflective quality. The school has established formal instruments such as a School Work Plan, a quality roadmap, graduate achievement indicators, a supervision system, and industry partnerships formalised through Memoranda of Understanding (MoUs). These findings indicate that the administrative quality management system is functioning.

However, quality tends to be perceived as a programme obligation rather than a collective professional value. As stated by one of the school principals:

"We have implemented the PK programme according to the guidelines, but teachers still see it as a project, not as a way of thinking about quality."

This finding indicates that quality is manifested more as administrative compliance than as genuine quality awareness, meaning that a reflective quality culture has not yet developed optimally within schools.

3.1.2. Principal Leadership Practices In Building Quality

An analysis of leadership practices shows that school principals still play a dominant role as controllers of quality programmes through a managerial-administrative approach. Leadership practices primarily focus on programme development, instructional supervision, report-based evaluation, and the strengthening of industry partnerships.

The pattern of leadership interaction tends to be top-down, resulting in teachers functioning primarily as programme implementers rather than reflective contributors to school quality development. One teacher stated:

"Quality is important, but we are often only asked to complete reports. There is not much room to discuss the meaning of quality itself..."

This indicates that although systemic transformation has been implemented, the dimensions of empathy, empowerment, and value reflection have not yet developed optimally, meaning that a reflective quality culture has not yet been established as an organisational identity.

3.1.3. Analysis Of The Weaknesses Of The Current Leadership Model

Data triangulation identified three main weaknesses in current leadership practices: (1) quality is understood as administrative compliance rather than professional value awareness; (2)

leadership practices remain programmatic and structurally oriented with a dominance of managerial functions; and (3) a shared culture of quality has not developed as an organisational identity due to limited opportunities for collective reflection.

As expressed by one teacher:

"Every year there are always quality meetings, but there is rarely any space for reflection on what quality means to us as teachers..."

These findings indicate that the transformation that has occurred remains largely at the level of systems and procedures, and has not yet extended to the transformation of values and collective awareness among school members. The results of the study reveal a gap between transformational leadership oriented toward systemic change and the need for leadership that fosters relationships, empathy, and empowerment among school members. Although the quality system operates

structurally, the internalisation of quality values as a reflective organisational culture remains weak. This condition highlights the need for an integrative leadership model that combines transformational and service-oriented dimensions in building school quality culture. Therefore, the Transformative Servant Leadership-School Quality Based (TSL-SQB) model was developed as a conceptual framework to strengthen reflective quality culture in Centres of Excellence Vocational Schools.

3.2. Instrument Validation

The content validity of the instrument was evaluated using the Aiken’s V index based on expert assessments of 30 instrument items. This analysis aimed to ensure the alignment of each item with the measured construct as well as the operational clarity of the research indicators. The results of the Aiken’s V calculations for each instrument item are presented in Table 1.

Table 1: Instrument Item Validation Results Using Aiken’s V.

Item	Aiken’s V	Criteria
1	1.0	Valid
2	0.67	Needs Revision
3	1.00	Valid
4	0.75	Valid
5	0.75	Valid
6	1.00	Valid
7	1.00	Valid
8	0.75	Valid
9	0.83	Valid
10	0.92	Valid
11	0.67	Needs Revision
12	1.00	Valid
13	1.00	Valid
14	0.75	Valid
15	1.00	Valid
16	1.00	Valid
17	0.75	Valid
18	0.75	Valid
19	1.00	Valid
20	0.75	Valid
21	1.00	Valid
22	0.67	Needs Revision
23	1.00	Valid
24	0.75	Valid
25	1.00	Valid
26	0.75	Valid
27	1.00	Valid
28	0.92	Valid
29	1.00	Valid
30	0.75	Valid

To clarify the distribution of instrument validity levels, a summary of validity categories based on

Aiken's V values is presented in Table 2.

Table 2: Distribution Of Instrument Validity Based On Aiken's V Values.

Category	Number of Items	Percentage
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V \geq 0.75 (Valid)	27	90
V < 0.75 (Needs Revision)	3	10
Total	30	100

The analysis results show that 27 items (90%) fall into the valid category, while three items (10%) require minor revisions, particularly in terms of editorial refinement and operational clarity. Overall, these findings indicate that the instrument demonstrates an adequate level of content validity and is suitable for use in the model validation stage and the initial testing of the TSL-SQB model.

3.3. Validation Of The TSL-SQB Model

Validation of the Transformative Servant Leadership-School Quality Based (TSL-SQB)

model was conducted through expert evaluation of 20 indicator items representing seven aspects of model feasibility, including physical presentation, model substance, systematics, language clarity, and implementability in the context of Centres of Excellence Vocational Schools. Validity analysis employed the Aiken's V index to ensure conceptual alignment, structural consistency of the model, and feasibility of implementation in school leadership practices. The results of Aiken's V calculations for each aspect of the model are presented in Table 3.

Table 3: Tsl-Sqb Model Validation Results.

Model Validation Aspect	Assessment Items	Aiken's V Value	Category
Physical Presentation Aspect	1-4	0.88	Valid
Substantive Aspects - Effectiveness	5-7	1.00	Valid
Substantive Aspect - Efficiency	8-9	0.92	Valid
Substantive Aspect - Practicality	10	1.00	Valid
Systematic Aspects	11-14	0.98	Valid
Language and Readability Aspects	15-17	0.89	Valid
Implementation Aspects of Vocational Schools	18-20	0.89	Valid

To provide a clearer overview of model feasibility, the distribution of validity categories based

on Aiken's V values is summarised in Table 4.

Table 4: Model Validity Distribution.

Category	Number of Aspects	Percentage
V \geq 0.75 (Valid)	7	100
V < 0.75 (Needs Revision)	0	0
Total	7 Aspects	100

The analysis results show that all aspects of the model are categorised as valid, with Aiken's V values ranging from 0.88 to 1.00, indicating a high level of conceptual suitability and implementation feasibility. The highest values were observed in the effectiveness and practicality aspects, indicating that the model demonstrates both theoretical consistency and operational applicability in school leadership practices.

These findings confirm that the TSL-SQB model possesses strong conceptual legitimacy and is feasible for progression to the initial field trial stage in order to evaluate its implementation

effectiveness in strengthening reflective quality culture in Centres of Excellence Vocational Schools.

3.4. Results Of The Limited Field Trial Of The TSL-SQB Model

A limited field trial was conducted to evaluate the initial acceptance, comprehensibility, and operational feasibility of the Transformative Servant Leadership-School Quality Based (TSL-SQB) model before proceeding to the main field trial stage. The evaluation involved seven respondents using a four-point Likert scale instrument.

Table 5: Overall Descriptive Statistics Of Limited Trials.

Indicator	Value
Overall Mean	3.62
Standard Deviation	0.41
Percentage of Suitability	90.54%
Category	Very High

The results in Table 5 show that the model obtained a mean score of 3.62 out of a maximum scale of 4, with a feasibility percentage of 90.54%, which falls into the very high category. The standard deviation of 0.41 indicates low variability in

responses, suggesting that respondents' perceptions of the model were relatively consistent.

To examine assessment trends in more detail, descriptive statistical analysis was also conducted on each aspect of the model evaluation.

Table 6: Descriptive Statistics Based On Assessment Aspects.

Aspect	Mean	SD	Percentage	Category
Physical Presentation	3.71	0.46	92.86	Very High
Substance - Effectiveness	3.71	0.44	92.86	Very High
Substance - Efficiency	3.00	0.58	75.00	High
Substance - Practicality	3.29	0.49	82.14	Very High
Writing Systematics	3.82	0.39	95.54	Very High
Language & Readability	3.90	0.31	97.62%	Very High
Implementative SMK PK	3.38	0.52	84.52	Very High

Based on Table 6, most aspects received very high ratings, indicating that the model is perceived as visually clear, systematically structured, easy to understand, and relevant for implementation in SMK PK. The language and readability aspect received the highest score (Mean = 3.90), whereas the efficiency aspect received a relatively lower score (Mean = 3.00) but remained within the high category.

Overall, the results of this limited trial indicate that the TSL-SQB model demonstrates a high level of acceptance and operational feasibility, making it appropriate for progression to the main field

testing stage in the research and development cycle.

3.5. Results Of The TSL-SQB Model Field Trial

A larger-scale field trial was conducted to evaluate the feasibility, acceptance, and implementability of the TSL-SQB model on a broader implementation scale. The analysis employed descriptive statistics, including mean values, standard deviations, and feasibility percentages based on a four-point Likert scale.

Table 7: Overall Descriptive Statistics Of The Large-Scale Field Trial.

Indicator	Value
Overall Mean	3.69
Standard Deviation	0.46
Percentage of Suitability	91.98%
Category	Very High

The results show that the model achieved a mean score of 3.69 out of 4, with a feasibility percentage of 91.98%, which is classified as very high. The standard deviation value of 0.46 indicates relatively low variability in responses,

suggesting consistent evaluations among respondents.

To obtain a more detailed picture, an analysis was also conducted on each aspect of the model assessment.

Table 8: Descriptive Statistics Per Aspect Of The Field Test.

Aspect	Total Score	Ideal Maximum Score	Percentage	Mean	SD	Category
Physical Presentation	74	84	88.10	3.52	0.51	Very High
Substance - Effectiveness	77	84	91.67	3.67	0.48	Very High
Substance - Efficiency	77	84	91.67	3.67	0.48	Very High
Substance - Practicality	81	84	96.43	3.86	0.36	Very High
Writing Systematics	75	84	89.29	3.57	0.51	Very High
Language & Writing Style	78	84	92.86	3.71	0.46	Very High
Implementative SMK PK	77	84	91.67	3.67	0.48	Very High

Based on Table 8, all aspects achieved a very high category, with percentages ranging from 88.10% to 96.43%. The practicality aspect obtained the highest score (Mean = 3.86), indicating that the model is easy to implement in practice. Overall, these

findings indicate that the TSL-SQB model demonstrates strong feasibility, acceptability, and implementability, making it suitable for broader implementation in Centres of Excellence Vocational Schools.

3.6. Results Of The TSL-SQB Model Effectiveness Test

An effectiveness test was conducted to examine the impact of implementing the TSL-SQB model on strengthening reflective quality culture in Centres of Excellence Vocational Schools. The analysis involved 21 respondents and included normality testing as a prerequisite and a

paired-samples t-test to examine differences between pretest and posttest scores.

3.6.1. Normality Test

Before conducting inferential analysis, the pretest and posttest data were tested for normality using the Kolmogorov-Smirnov and Shapiro-Wilk tests.

Table 9: Results Of Normality Tests For Pretest And Posttest Scores.

Variable	Kolmogorov-Smirnov (Sig.)	Shapiro-Wilk (Sig.)	Description
Pre-test	0.200	0.933	Normal
Post-test	0.200	0.971	Normal

The results indicate that all significance values exceed 0.05, meaning that the data are normally distributed and meet the assumptions for parametric testing.

3.6.2. Descriptive Statistics For Pretest And

Table 10: Descriptive Statistics Of Pretest And Posttest Scores.

Variable	N	Mean	SD	SE Mean
Pretest	21	76.14	4.672	1.020
Post-test	21	82.33	4,963	1,083

The mean score increased from 76.14 in the pretest to 82.33 in the posttest, indicating an increase of 6.19 points following the implementation of the TSL-SQB model. This increase reflects a positive change in reflective quality culture indicators.

Posttest

To describe the changes in scores before and after the implementation of the model, descriptive statistical analysis was performed.

3.6.3. Paired Sample T-Test

To test the significance of the difference between the pretest and posttest scores, a paired sample t-test was conducted.

Table 11: Results Of The Paired Sample T-Test.

Comparison	Mean Difference	t	df	Significance (two-tailed)	95% CI Lower	95% CI Upper
Pre - Post	-6,190	-23,462	20	<0.001	-6,741	-5,640

The test results indicate that the difference between the pretest and posttest scores is statistically significant ($t(20) = -23.462$; $p < 0.001$). The 95% confidence interval does not cross zero (-6.741 to -5.640), indicating that the increase in scores occurred consistently across all respondents. The correlation between pretest and posttest scores was 0.970 ($p < 0.001$), indicating a very strong relationship between

the measurements before and after the treatment, as well as indicating the stability of the construct being measured.

3.6.4. Effect Size

To assess the strength of the model's implementation, the effect size was calculated.

Table 12: Effect Size Difference Between Pretest And Posttest

Effect Size	Value	95% CI Lower	95% CI Upper	Category
Cohen's d	5.120	-6.745	-3.484	Very Large
Hedges' g	4,925	-6,489	-3,351	Very Large

The Cohen's d value of 5.120 indicates an extremely large effect size, suggesting that the improvement observed is not only statistically significant but also highly meaningful in practical terms.

Overall, the results indicate that the TSL-SQB model is effective in strengthening reflective quality culture in Centres of Excellence Vocational Schools. The significant increase in scores accompanied by a very large effect size provides strong empirical

evidence that the integration of transformational leadership and servant leadership within the TSL-SQB framework substantially enhances school quality culture. These findings suggest that the

developed model is not only conceptually valid but also demonstrates strong implementation effectiveness, making it potentially replicable and testable in broader vocational education contexts.

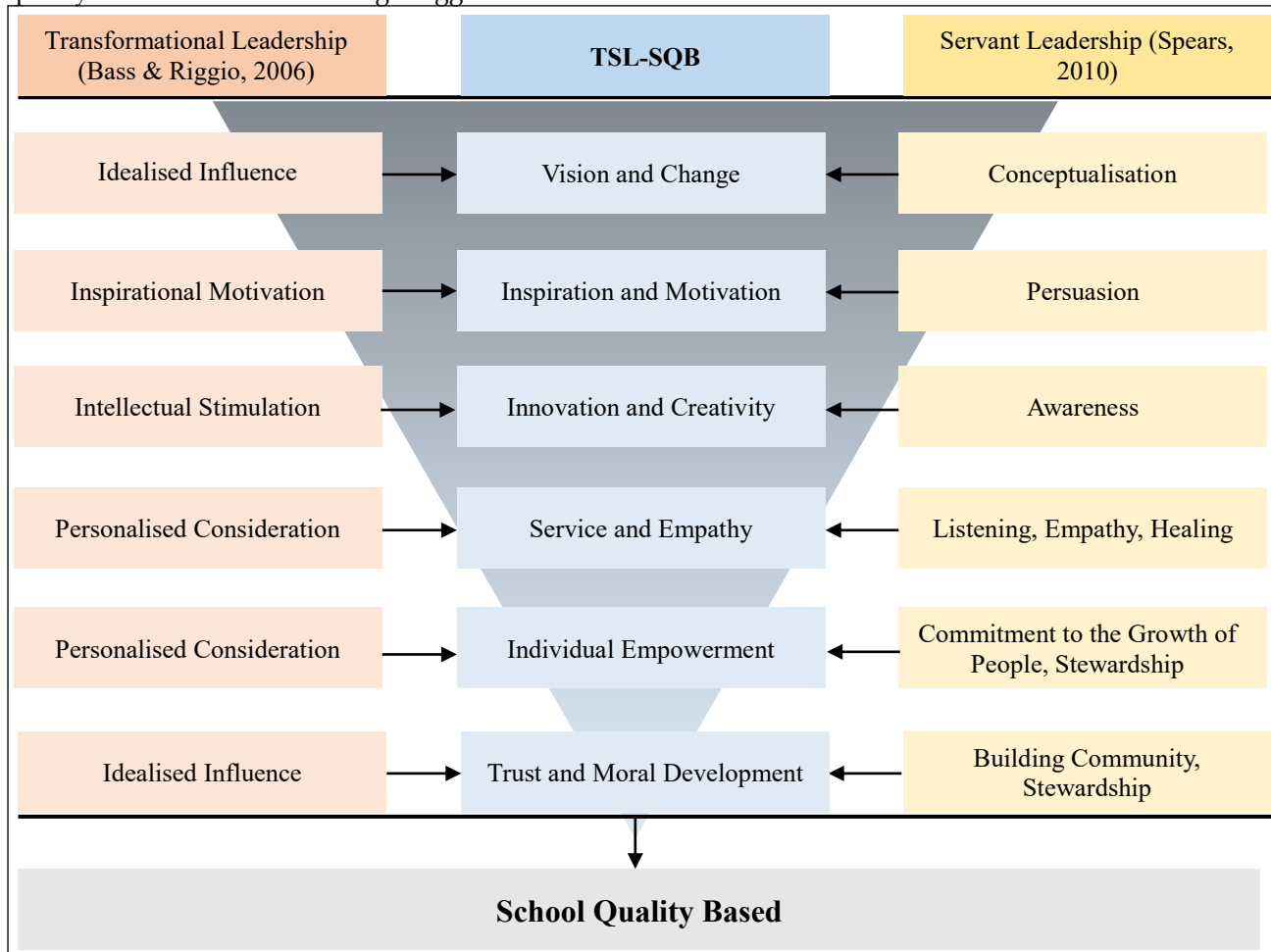


Figure 1: Final Model Of Transformative Servant Leadership School Quality Based (TSL-SQB).

4. DISCUSSION

The findings of this study indicate that the integration of transformational leadership and servant leadership within the framework of the Transformative Servant Leadership-School Quality Based (TSL-SQB) model makes an important contribution to strengthening a reflective quality culture in SMK Pusat Keunggulan. Conceptually, integrating these two leadership approaches enables a balance between strategic change orientation and the reinforcement of service values within the school organisation. Transformational leadership promotes a vision of change, innovation, and collective commitment to quality improvement, while servant leadership strengthens the dimensions of empathy, empowerment, and support for the professional development of school members.

In the context of vocational education, the

combination of these two approaches is particularly important because strengthening a culture of quality depends not only on managerial systems but also on the quality of social relationships, collaboration, and reflective learning within the school organisation. The TSL-SQB model demonstrates that leadership oriented towards both transformation and service can encourage the development of a more participatory, adaptive, and continuous improvement-oriented organisational environment. These findings reinforce arguments in the educational leadership literature that an integrative leadership approach has strong potential to drive school culture transformation, particularly in strengthening reflective quality culture in vocational education institutions.

Transformational leadership, as proposed by Longshore and Bass (1987) and Avolio (2011), emphasises the importance of inspirational vision,

intellectual stimulation, and individualised consideration as drivers of organisational change. In the context of this study, these dimensions contribute to strengthening strategic orientation towards quality and encourage more systematic organisational reflection practices. These findings are consistent with studies showing that transformational leadership is positively correlated with team performance, innovation, and organisational capacity to adapt to change (Yu & Xiang, 2024; Doghri et al., 2022; Tran et al., 2025; Khassawneh et al., 2026).

However, the needs analysis conducted in this study indicates that transformational leadership practices in SMK Pusat Keunggulan still tend to focus on structural and programmatic dimensions. This condition suggests that the transformation that has taken place primarily occurs at the system and policy levels, while the internalisation of quality values at the individual and relational organisational levels has not yet developed optimally. In this context, the servant leadership approach becomes an important complementary element.

The concept of servant leadership introduced by Spears (1996) and further developed by Spears et al. (2016) emphasises empathy, empowerment, and individual development as the core of leadership practices. This perspective views leaders not only as drivers of organisational change but also as facilitators of the growth of organisational members. Servant leadership has been shown to be strongly associated with organisational ethical climate, member well-being, and collective trust (Rao, 2025; Kinderen et al., 2020; Rezaei et al., 2012). Within the framework of this study, integrating transformational and servant leadership through the TSL-SQB model demonstrates that strengthening service-oriented values plays a crucial role in deepening the internalisation of quality culture. The enhancement of reflective orientation is influenced not only by structural change but also by the creation of an organisational environment that supports collective learning, trust, and active participation among school members (Koole, 2020; Owen & Buck, 2020; Mardi et al., 2026). From a quality management perspective, the idea that cultural transformation serves as the foundation of sustainable quality is highly relevant. Geary (2024) and Foulad et al. (2023) emphasise that quality cannot be achieved solely through procedural control but must emerge through a collective paradigm shift within the organisation. In this regard, the TSL-SQB model functions as an integrative mechanism that connects structural transformation with value transformation,

enabling a quality culture to develop in a reflective, adaptive, and sustainable manner within vocational education.

These findings contribute to the educational leadership literature by integrating two major paradigms, transformational leadership and servant leadership, within a framework for developing school quality culture. Transformational leadership has been shown to significantly influence teacher commitment and organisational effectiveness in schools (Liu et al., 2025; Algohani & Mydin, 2025; Saputra et al., 2024). Similarly, transformational and instructional leadership play important roles in improving learning quality and school performance (Shava & Heystek, 2021; Bellibaş et al., 2021). However, most of these studies employ correlational approaches and do not explicitly design integrative leadership models tested through structured interventions.

Research on servant leadership also demonstrates its important contribution to organisational dynamics. Studies by Howladar and Rahman (2021) and Gnankob et al. (2022) indicate that servant leadership significantly influences organisational citizenship behaviour and organisational member commitment. These findings are further supported by studies showing that servant leadership contributes uniquely to team performance even after controlling for the influence of transformational leadership (Ren & Shen, 2024; Nauman et al., 2021).

Unlike these studies, the present research integrates both leadership paradigms within a single conceptual framework through the Transformative Servant Leadership-School Quality Based (TSL-SQB) model. This model is not only formulated conceptually but also developed and tested through a Research and Development (R&D) approach, enabling empirical evaluation of its feasibility and effectiveness within the context of vocational education.

Within the vocational education literature, most studies focus on strengthening industry-based curricula, teaching factories, or partnerships with the world of work. Leadership as a strategic mechanism for developing school quality culture remains relatively underexplored (Sugiarti et al., 2024; Subasman, 2023). This study therefore contributes by offering an integrative leadership model that is not only conceptually validated but also demonstrates initial effectiveness in strengthening reflective quality culture orientation in SMK Pusat Keunggulan. The integration of the TSL-SQB model can also be explained through the perspectives of social exchange theory and organisational

learning theory. Within this framework, servant leadership, pioneered by Greenleaf (2007), emphasises leadership relationships based on trust, empathy, and reciprocity, thereby creating a supportive work environment. Meanwhile, transformational leadership, developed by Longshore and Bass (1987) and Avolio (2011) plays a role in building a collective vision, providing intellectual stimulation, and encouraging organisational change.

The integration of these two approaches enables the formation of psychological safety that encourages organisational members to engage in critical reflection, share knowledge, and innovate in school quality practices. The high level of acceptance of the model indicates that the TSL-SQB model is not only conceptually relevant but also practical in the operational context of schools. Its systematic yet adaptive structure allows the model to be applied to various characteristics of SMK Pusat Keunggulan.

Within the context of vocational education revitalisation policies in Indonesia, this model has the potential to serve as an alternative leadership framework that supports the sustainability of systemic school quality improvement programmes rather than merely implementing project-based initiatives. This study contributes to the development of educational leadership by offering an integrative model of Transformative Servant Leadership–School Quality Based (TSL-SQB). The model synthesises the paradigms of transformational leadership, servant leadership, and educational quality management within a single systemic conceptual framework. This integration positions structural organisational change and relational service as two complementary leadership dimensions in building a reflective quality culture within the school environment.

Nevertheless, this study has several limitations. The use of a one-group pretest–posttest pre-experimental design without a control group limits the strength of causal inference regarding the effectiveness of the model. In addition, the relatively limited number of participants and their concentration within a single research area restrict the generalisability of the findings. The measurement of reflective quality culture based on respondents' perceptions also carries the potential for subjective bias. Therefore, future studies are recommended to employ quasi-experimental or experimental designs with control groups and longitudinal approaches to examine the sustainability of the model's impact on

more objective school quality indicators, such as graduate performance, industry partnerships, and learning outcomes.

Overall, the findings of this study indicate that the TSL-SQB model represents a relevant conceptual and operational innovation for strengthening reflective quality culture in SMK Pusat Keunggulan. The integration of transformational leadership and servant leadership provides a leadership framework that is oriented not only towards structural organisational change but also towards strengthening organisational relationships and values. Accordingly, this model has the potential to serve as an integrative leadership approach that supports school cultural transformation towards sustainable vocational education quality.

5. CONCLUSION

This study aims to develop and validate the Transformative Servant Leadership–School Quality Based (TSL-SQB) model as an integrated leadership framework for strengthening a reflective quality culture in SMK Pusat Keunggulan. Based on the results of the SEM-PLS modelling, the model demonstrates adequate measurement quality, with both validity and reliability criteria fulfilled, as well as significant structural strength. The findings indicate that transformational leadership and servant leadership contribute positively to the development of a reflective quality culture, both directly and through integrative configurations within the tested mediation model. These results suggest that the internalisation of quality culture in vocational education cannot be sufficiently supported by strategic transformation orientation alone but also requires the dimensions of service, empowerment, and ethical exemplarity as mechanisms for reinforcing reflective values. The TSL-SQB model demonstrates substantial predictive capacity in explaining variations in reflective quality culture, thereby providing a more comprehensive conceptual and operational framework than single-leadership approaches. Although the statistical results indicate a strong model fit and explanatory power, the generalisation of the findings should be interpreted cautiously given the research context and design. Further studies employing longitudinal approaches and cross-regional replication are therefore recommended to examine the structural stability and long-term sustainability of the model's impact.

Acknowledgment: The authors would like to express their sincere gratitude to the BPI Scholarship (Indonesian Education Scholarship) program for providing financial support for this research. The authors also

acknowledge the support of the Centre for Higher Education Funding and Assessment (PPAPT) and the Indonesian Endowment Fund for Education Agency (LPDP) for funding this sponsored research. Their continuous support has significantly contributed to the successful completion of this study and the dissemination of its findings.

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