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Perceived Teacher Competence and Learning Motivation in Relation to Primary School Achievement

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Abstract
Teacher competence is central to instructional quality, yet the process through which students' perceptions of teachers' pedagogical and professional competence relate to achievement remains underexamined in Islamic primary schools implementing an international curriculum. This study examined the direct associations of student-perceived pedagogical and professional competence with learning motivation and achievement, and tested learning motivation as a mediator. A cross-sectional explanatory correlational design was used with 214 students in Grades IV–VI and 36 teachers at a Cambridge-based Islamic primary school in Pasuruan, Indonesia. Student ratings and achievement records were analysed through confirmatory factor analysis and structural equation modelling with bias-corrected bootstrap confidence intervals. Pedagogical competence (β = .412) and professional competence (β = .356) were positively associated with motivation. Both competence dimensions retained smaller direct associations with achievement (β = .218 and .187), while motivation showed the strongest association (β = .534). The indirect effects through motivation were significant for pedagogical competence (β = .220, 95% BCa CI [.124, .323]) and professional competence (β = .190, 95% BCa CI [.098, .287]), indicating partial mediation of approximately 50% of each total association. The findings support an integrated teacher-development approach that combines sound pedagogy, subject mastery, and motivation-supportive classroom practices. Longitudinal and multilevel research is recommended to test temporal ordering and account for students nested within teachers and classes.

Keywords: Academic Achievement, Cambridge Curriculum, Learning Motivation, Teacher Competence

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Introduction

Teacher competence matters because curriculum intentions only become learning opportunities through teachers' decisions about content, explanation, tasks, feedback, classroom interaction, and assessment. Contemporary competence models therefore treat effective teaching not as a single personal trait but as the coordinated use of subject knowledge, pedagogical knowledge, situation-specific skills, and professional

judgement. Empirical work has similarly shown that teacher competence tends to influence student learning through the quality of instruction that students actually experience rather than through knowledge alone (Blömeke et al., 2022). This distinction is particularly important when competence is measured from the student perspective. Students repeatedly observe how teachers explain difficult ideas, respond to misconceptions, organize learning, and connect subject matter to prior knowledge; their aggregated perceptions can therefore capture enacted competence at the classroom level.

The present study distinguishes pedagogical competence from professional competence. Pedagogical competence refers to the capacity to understand learner characteristics, plan coherent instruction, employ appropriate methods, manage interaction, assess learning, and adapt support. Professional competence refers to command of subject matter, curricular goals, disciplinary representations, and the ability to communicate content accurately and meaningfully. The distinction is analytically useful, although both dimensions are interdependent in practice. Shulman's (1987) formulation of pedagogical content knowledge explains this interdependence: subject knowledge becomes educationally productive when it is transformed into representations, questions, examples, and tasks that are accessible to learners. Recent evidence likewise indicates that students' progress is more convincingly explained by an effect chain from teacher competence to instructional quality and then to learning than by a simple direct link (Blömeke et al., 2022).

Learning motivation is a plausible psychological mechanism within that effect chain. From a self-determination perspective, students are more likely to invest effort and persist when classroom experiences support their sense of competence, autonomy, and relatedness (Ryan & Deci, 2017). A large meta-analysis found that intrinsic motivation and personally endorsed reasons for learning are consistently associated with achievement, persistence, and positive adjustment, whereas amotivation is associated with poorer outcomes (Howard et al., 2021). Teacher practices are consequential because clear structure, meaningful choices, supportive feedback, involvement, and appropriately challenging tasks shape whether students perceive learning as attainable and worthwhile. Ahn et al. (2021) showed that student-perceived need-supportive teaching connects teacher motivation with students' need satisfaction and motivation. Longitudinal evidence also indicates that perceived teacher support helps explain changes in students' motivational profiles over time (Held & Mori, 2024).

Empirical research already connects student-perceived teaching with motivation

at the primary level. Ahn et al. (2021) studied 697 South Korean fifth- and sixth-graders and 35 teachers using multilevel SEM, linking teacher motivation, perceived need-supportive practices, need satisfaction, and student motivation within a model also including achievement. Flunger et al. (2024) examined 446 Dutch primary pupils in 22 mathematics classes and distinguished individual-directed from class-directed autonomy support at the student level. These studies demonstrate that student perceptions and motivational pathways are established research topics. They also show why students' individual experiences and classroom-level shared perceptions need to be separated when possible.

Recent evidence further limits any claim that the competence–motivation–achievement relationship is novel in itself. Shin et al. (2025) examined student-perceived teacher characteristics in a Korean panel of more than 5,500 students in Grades 7–12, with associations varying across outcomes and student characteristics. In Indonesian primary education, Aini & Lukitoaji (2026) related pedagogical competence to class-average mathematics achievement using 24 teachers as the analysis units. The latter design differs from an individual-student mediation model and does not test motivation as an intervening construct. These differences concern operationalization, educational level, and analysis unit; they do not imply that either study lacks value.

The Islamic international-curriculum context also has an existing empirical literature. Fatimah & Fatayan (2022) used a qualitative case study involving a Grade III teacher and a pupil to examine Cambridge mathematics and project-based learning in an Islamic primary school. Their findings address classroom implementation and meaningful learning rather than the size of an indirect statistical association. Yamin & Astutik (2023) examined curriculum integration in an Islamic junior secondary school, providing relevant contextual evidence that should not be presented as primary-school evidence. Cambridge's own curriculum description permits adaptation to local culture and school ethos alongside national or bilingual programmes (Cambridge International Education, n.d.). These sources justify examining curricular translation in an Islamic setting without assuming that Cambridge implementation necessarily improves achievement.

The present research brings two student-perceived competence dimensions into one model with motivation and achievement in an Islamic primary setting combining Cambridge, national, and religious expectations. Its contribution is contextual and analytical: it examines whether this particular specification is supported in one setting.

It neither claims to be the first study of mediation nor tests whether an Islamic or international curriculum changes the relationships. The latter claim would require measured contextual variables, comparison groups, or an explicit moderation design.

The study asks three questions: whether the two perceived competence dimensions are associated with motivation; whether competence and motivation are associated with achievement when considered together; and whether either competence dimension has an indirect association with achievement through motivation. Positive associations are hypothesized for the five directed paths and the two indirect paths. Whether a direct association remains after accounting for motivation is an empirical question, so partial mediation is not prespecified as the required result. Because the design is cross-sectional, directional arrows indicate theoretical ordering rather than established temporal precedence (Maxwell & Cole, 2007).

Research Method

Research Design and Setting

The study used a quantitative, cross-sectional explanatory correlational design in one Islamic primary school in Pasuruan, Indonesia. The school implemented Cambridge learning alongside national and religious curricula. No instructional treatment was assigned and no comparison school was included. Student questionnaires and school achievement records were used to examine a theory-guided model linking perceived teacher competence, motivation, and achievement. The design examines associations within the participating school and does not establish a causal effect of the Cambridge programme or Islamic schooling.

Participants and Sampling

The participant pool comprised 36 teachers and 214 students in Grades IV, V, and VI. Teachers were included through census sampling when they had at least two years of experience teaching within the Cambridge programme. The eligible instructional contexts included core subjects such as English, Mathematics, and Science. Students were selected through proportionate stratified random sampling by grade. Of the 214 students, 62 (28.97%) were in Grade IV, 81 (37.85%) in Grade V, and 71 (33.18%) in Grade VI. The sample included 102 boys (47.66%) and 112 girls (52.34%). Teachers had a mean of 4.2 years of experience with the Cambridge programme (SD = 1.8). The SEM dataset was analysed at the student level by linking student ratings of teacher competence and motivation with the corresponding achievement records.

Table 1 Participant Profile

Characteristic	Category	n	%/M (SD)
Grade	IV	62	28.97
	V	81	37.85
	VI	71	33.18
Gender	Boy	102	47.66
	Girl	112	52.34
Teacher experience in Cambridge programme	Years	36 teachers	4.20 (1.80)

Note. Percentages are based on the 214 student participants. Teacher experience is reported as mean years and standard deviation.

Measures and Data Collection

Student-perceived pedagogical competence was measured with five indicators covering the teacher's planning, responsiveness to learner characteristics, use of instructional strategies, classroom guidance, and assessment-related support. Student-perceived professional competence was measured with five indicators reflecting subject-matter command, accuracy and clarity of explanation, connection among concepts, curricular understanding, and the use of relevant examples. Learning motivation was measured with five indicators representing interest, effort, persistence, perceived value, and active participation. The competence and motivation items used a five-point response scale. Academic achievement was represented as a composite construct derived from school achievement records, including report-card performance and Cambridge progression-related assessment information. Higher scores indicated stronger perceived competence, motivation, or achievement.

Ethical Considerations

Permission to conduct research at the madrasah is granted by the madrasah principal. Participation is voluntary and based on informed consent. Participating teachers and students' parents receive an explanation of the research objectives, data collection procedures, confidentiality protections, and the right to refuse or withdraw without any consequences for students' grades, educational services, or their relationship with the school. Parents or legal guardians provide consent for their children's participation. Participants' identities are protected, and research findings are reported in aggregate form.

Data Analysis

Analysis proceeded in four stages. First, frequencies, means, standard deviations, skewness, and kurtosis were examined. Second, multicollinearity, multivariate normality, and common-method variance were assessed. Third, confirmatory factor

analysis evaluated factor loadings, composite reliability (CR), Cronbach's alpha, average variance extracted (AVE), and discriminant validity. Fourth, the structural model estimated direct and indirect standardized paths. Model fit was evaluated with the chi-square to degrees-of-freedom ratio, Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR), following established SEM guidance (Hair et al., 2019; Kline, 2016). Indirect effects were evaluated using bias-corrected and accelerated bootstrap confidence intervals; mediation was supported when the interval did not include zero. The proportion mediated was calculated by dividing the standardized indirect effect by the standardized total effect. Where preliminary fit statistics could not be reconciled with the documented item count and model specification, this revision reports them only with an explicit consistency explanation and does not treat unreconciled structural fit indices as verified results.

Results and Discussion

Descriptive Evidence and Preliminary Diagnostics

Students evaluated both competence dimensions positively. Pedagogical competence had a mean of 4.12 (SD = 0.58), and professional competence had a mean of 4.05 (SD = 0.61). Learning motivation was also relatively high (M = 3.89, SD = 0.64), while the mean achievement score was 82.45 (SD = 7.23). The skewness and kurtosis values were within ±1.00, indicating no substantial univariate departure from normality. Tolerance values exceeded .10 and variance inflation factors were below 3.00, suggesting that multicollinearity was not problematic. Mardia's multivariate kurtosis coefficient was 5.42, below the reported critical value of 8.76. Harman's single-factor diagnostic indicated that one unrotated factor accounted for 28.67% of the variance, below the conventional 50% diagnostic threshold. Although this diagnostic cannot eliminate all concerns about common-method variance, it did not indicate that a single response tendency dominated the student-report measures.

Table 2 Descriptive Statistics

Variable	n	M	SD	Skewness	Kurtosis
Pedagogical competence	214	4.12	0.58	-0.42	-0.31
Professional competence	214	4.05	0.61	-0.38	-0.28
Learning motivation	214	3.89	0.64	-0.29	-0.35
Academic achievement	214	82.45	7.23	0.15	-0.22

Note. Competence and motivation were scored on five-point scales; achievement was scored on a 0–100 scale.

Measurement Model and Indicator-Count Reconciliation

The preliminary CFA summary reported a four-factor measurement model with 20 observed indicators and satisfactory fit: $\chi^2 = 178.43$, df = 164, $\chi^2/df = 1.09$, CFI = .991, TLI = .989, RMSEA = .021 (90% CI [.000, .038]), and SRMR = .041. A parameter-count consistency check supports the stated 20-indicator specification. Under a conventional correlated four-factor CFA, 20 indicators produce 210 distinct sample moments and 46 free parameters, yielding df = 164; an 18-indicator specification would instead yield df = 129. The supplied item-level table, however, contains only 18 rows: five each for pedagogical competence, professional competence, and learning motivation, and three for academic achievement. This pattern indicates that two item rows were omitted during manuscript preparation rather than that the reported CFA was estimated with only 18 indicators. Because the labels and coefficients of the two omitted indicators were not available, they were not reconstructed. All available standardized loadings exceeded .60 and were statistically significant ($p < .001$). AVE ranged from .56 to .64, composite reliability from .86 to .89, and Cronbach's alpha from .85 to .88, supporting convergent validity and internal consistency. Table 3 therefore presents construct-level quality coefficients and the loading ranges that can be traced to the supplied item rows.

Table 3 Construct-Level Measurement Quality and Available Item Rows

Construct	Item rows available	Available loading range	AVE	CR	α
Pedagogical competence	5 of 5	.71–.82	.58	.87	.86
Professional competence	5 of 5	.68–.81	.56	.86	.85
Learning motivation	5 of 5	.75–.84	.62	.89	.88
Academic achievement	3 of 5*	.78–.83*	.64	.87	.86

Note. AVE = average variance extracted; CR = composite reliability; a = Cronbach's alpha. The CFA degrees of freedom are mathematically consistent with a 20-indicator, four-factor model. The source table supplied five item rows for each competence construct and learning motivation but only three of the five item rows implied for academic achievement. The two omitted rows must be restored from the original SEM output before a complete item-level table or appendix is submitted. No missing indicator labels or coefficients have been inferred in this manuscript.

Discriminant validity was evaluated by comparing the square root of each construct's AVE with the interconstruct correlations. The diagonal values (.748–.800) were larger than the corresponding off-diagonal correlations, including the largest correlation between learning motivation and achievement (.712). The constructs were therefore empirically distinguishable, although the relatively strong motivation–achievement correlation was consistent with the theoretical expectation that motivated students invest more effort and persist longer. This pattern aligns with self-determination evidence showing that autonomous and personally valued motivation is associated with performance and persistence (Howard et al., 2021).

Table 4 Discriminant Validity Matrix

Construct	1	2	3	4
1. Pedagogical competence	.761			
2. Professional competence	.712	.748		
3. Learning motivation	.654	.623	.787	
4. Academic achievement	.598	.567	.712	.800

Note. Diagonal values are the square roots of AVE; off-diagonal values are latent-construct correlations.

Direct Associations in the Structural Model

The reported structural path estimates are presented in Table 5. All five hypothesized direct paths were positive and statistically significant. Pedagogical competence had the stronger association with motivation ($\beta = .412$, $p < .001$), followed by professional competence ($\beta = .356$, $p < .001$). Both competence dimensions also retained direct associations with achievement, although the magnitudes were smaller: $\beta = .218$ ($p = .005$) for pedagogical competence and $\beta = .187$ ($p = .021$) for professional competence. Learning motivation had the largest direct association with achievement ($\beta = .534$, $p < .001$). The preliminary draft also listed global structural-model fit statistics with df = 168. That degree of freedom cannot be independently reconciled from the supplied model description because the additional parameter constraints required to move from the 20-indicator CFA (df = 164) to df = 168 were not documented. To avoid presenting an unreconciled statistic as verified, this revision retains the reported path and bootstrap estimates but withholds the global structural-model fit claim. The fit indices should be restored only after they are matched to the original SEM output and final model specification.

Table 5 Direct Effects in the Structural Model

Path	β	SE	CR	p	Decision
Pedagogical competence → Motivation	.412	.089	4.63	< .001	Supported
Professional competence → Motivation	.356	.092	3.87	< .001	Supported
Pedagogical competence → Achievement	.218	.078	2.79	.005	Supported
Professional competence → Achievement	.187	.081	2.31	.021	Supported
Motivation → Achievement	.534	.072	7.42	< .001	Supported

Note. β = standardized estimate; SE = standard error; CR = critical ratio.

The stronger path from pedagogical competence to motivation suggests that students respond not only to what teachers know but also to how that knowledge is enacted. Clear explanations, responsive scaffolding, coherent task sequences, feedback, and classroom guidance can make students feel capable and supported. This interpretation is consistent with evidence that need-supportive practices connect teacher-related characteristics with student need satisfaction and motivation (Ahn et al., 2021). It also corresponds with longitudinal findings that perceived teacher support

contributes to the development of more favourable motivation profiles (Held & Mori, 2024). In practical terms, students may be more motivated when competent teaching reduces uncertainty, makes progress visible, and gives learning activities a meaningful structure.

Professional competence also contributed to motivation. Subject mastery can foster motivation when it enables teachers to select accurate examples, anticipate misconceptions, connect concepts, and respond confidently to questions. However, professional knowledge alone does not guarantee that students experience the lesson as engaging or accessible. Blömeke et al. (2022) found that teacher knowledge was linked with student progress through situation-specific skills and instructional quality. The present results are compatible with that process account: professional competence matters, but its motivational value is likely realized through pedagogical transformation. The slightly larger coefficient for pedagogical competence therefore should not be interpreted as diminishing subject expertise; rather, it demonstrates the importance of converting expertise into experiences that students can understand and value.

The direct competence–achievement paths remained significant after motivation was included, indicating that instruction may also support achievement through routes not captured by the motivation construct. Accurate content, well-designed explanations, formative checks, feedback, and alignment between instruction and assessment can improve learning even when changes in self-reported motivation are modest. At the same time, the largest path in the model connected motivation with achievement. This finding accords with the meta-analytic conclusion that intrinsic and identified forms of motivation are important for student success and persistence (Howard et al., 2021). It also reinforces the need to treat motivation as a substantive learning condition rather than as an optional affective outcome.

Learning Motivation as A Partial Mediator

Bootstrap analysis supported both indirect effects. The standardized indirect association between pedagogical competence and achievement through motivation was .220, with a 95% bias-corrected and accelerated confidence interval from .124 to .323. The corresponding indirect association for professional competence was .190, with a confidence interval from .098 to .287. Because neither interval included zero and the direct paths remained significant, learning motivation functioned as a partial rather than

complete mediator. The indirect effect accounted for 50.23% of the total pedagogical-competence association and 50.40% of the total professional-competence association.

Table 6 Total, Direct, and Indirect Associations with Academic Achievement

Predictor / effect	β	SE	Lower BCa	Upper BCa	p	Mediated %
Pedagogical competence: total	.438	.076	.289	.587	< .001	–
Pedagogical competence: direct	.218	.078	.065	.371	.005	–
Pedagogical competence: indirect via motivation	.220	.051	.124	.323	< .001	50.23
Professional competence: total	.377	.081	.218	.536	< .001	–
Professional competence: direct	.187	.081	.028	.346	.021	–
Professional competence: indirect via motivation	.190	.048	.098	.287	< .001	50.40

Note. BCa = bias-corrected and accelerated bootstrap confidence interval. Significant direct and indirect effects indicate partial mediation.

The mediation pattern offers a more precise account than a direct-effect model. Approximately half of each total competence–achievement association was statistically transmitted through motivation, while the remaining half operated through other unmeasured pathways. The result is consistent with a dual-route interpretation. In the instructional route, teachers' pedagogical and professional competence may improve the accuracy, sequencing, differentiation, and assessment alignment of learning. In the motivational route, the same competence may increase students' interest, confidence, task value, and persistence. The two routes are complementary: motivation cannot compensate for inaccurate instruction, and technically accurate instruction may be less effective when students disengage.

This interpretation is supported by studies showing that teacher motivation and competence-related characteristics become visible to students through perceived teaching quality and classroom experiences (Daumiller et al., 2021; Lazarides & Schiefele, 2024). It is also compatible with research on teacher support and engagement, which finds that student perceptions of classroom support are associated with academic outcomes (Tao et al., 2022). Nonetheless, the present mediation result should not be described as a proven causal mechanism. Cross-sectional mediation can show that the covariance pattern is consistent with the proposed model, but it cannot establish whether perceived competence preceded motivation or whether successful, motivated students subsequently evaluated their teachers more positively. Longitudinal designs are necessary to distinguish these possibilities.

Comparative Positioning within Prior Research

The present pattern of results can be read against three strands of prior evidence introduced earlier in this article but not yet revisited. Aini & Lukitoaji (2026) linked pedagogical competence to class-average mathematics achievement using 24 teachers as the unit of analysis in an Indonesian primary setting, without testing motivation as an intervening variable. The present results are compatible with that earlier finding in direction, since pedagogical competence was again positively associated with achievement, but they extend it in two respects: the association is documented here at the individual-student level rather than the classroom-average level, and roughly half of the competence-achievement relationship is shown to operate indirectly through learning motivation rather than through a single undifferentiated pathway. The two studies are therefore best read as complementary rather than directly comparable, since they differ in analysis unit, subject domain, and mediational specification.

Shin et al. (2025) reported that associations between student-perceived teacher characteristics and motivational-achievement outcomes varied across subject, school level, gender, and prior achievement in a large Korean secondary-school panel. The present study, conducted with a smaller and more homogeneous sample of primary-school students in a single institution, found comparatively uniform and significant associations across both competence dimensions. This contrast is informative rather than contradictory: it suggests that the heterogeneity documented by Shin et al. may emerge, at least in part, from the wider span of subjects, grade levels, and achievement histories represented in a multi-school secondary panel, conditions that do not apply to the present single-school primary sample. The present findings should accordingly not be generalized beyond a comparably bounded context without further testing across schools and grade levels.

The present quantitative results also speak to the qualitative accounts of Cambridge and Islamic curriculum implementation offered by Fatimah & Fatayan (2022) and Yamin & Astutik (2023). Both studies described, at the level of classroom practice, how teachers translate an international curriculum and project-based or integrated instructional approaches into primary or junior-secondary Islamic schooling, without quantifying the downstream relationship with student motivation or achievement. The present structural results provide a complementary quantitative layer: they indicate that the kind of carefully enacted, student-responsive competence those qualitative studies describe is statistically associated with higher motivation and, through motivation, with higher achievement. In this sense, the present study does not

retest those qualitative claims directly but offers converging evidence, from a different methodological vantage point, that competent curricular translation in Cambridge-based Islamic primary schools plausibly carries motivational and achievement consequences.

Implications for Cambridge-Based Islamic Primary Education

The results have contextual significance for a school combining Cambridge, national, and Islamic curricular expectations. A flexible international curriculum expands opportunities for inquiry, progression, and adaptation, but it also places considerable responsibility on teachers to interpret standards and design coherent learning experiences (CAIE, 2021). In this context, professional competence includes more than command of isolated subject facts. It includes understanding disciplinary progression, selecting representations appropriate to primary learners, and aligning classroom assessment with intended learning. Pedagogical competence is equally necessary to translate those expectations into accessible tasks, supportive interaction, and formative feedback.

Islamic primary education adds a further layer: academic knowledge, learner agency, and religious values must be integrated in a way that is educationally coherent. Curriculum scholarship in religious education highlights the importance of framing content in relation to tradition, identity, and educational purpose (Lewin et al., 2023). The present findings imply that this integration is most likely to succeed when teachers possess both professional depth and pedagogical flexibility. For example, inquiry need not be positioned against religious formation; teachers can use questioning, evidence, reflection, collaboration, and ethical reasoning to deepen both conceptual understanding and responsible conduct. Such integration requires deliberate pedagogical content knowledge rather than the simple juxtaposition of an international programme and Islamic subjects.

For teacher development, the main implication is that pedagogical and professional competence should not be trained in separate programmes with unrelated outcomes. Continuous professional development should use curriculum-embedded lesson study, collaborative planning, analysis of student work, peer observation, and feedback focused on student motivation. Teachers should examine whether their explanations are clear, whether tasks are appropriately challenging, whether students understand the value of activities, and whether formative assessment helps students

recognize progress. Evidence from Indonesian elementary teacher development also emphasizes the importance of sustained and context-responsive professional learning rather than one-off training (Rasmitadila et al., 2024).

School leaders can operationalize these implications through three linked routines. First, planning meetings should integrate content progression, instructional design, Islamic value connections, and anticipated motivational barriers. Second, classroom observation should document not only teacher actions but also student responses, including participation, persistence, questions, and willingness to revise work. Third, assessment review should combine achievement evidence with student feedback about clarity, support, challenge, and relevance. These routines would shift evaluation from a supply-side question (whether teachers have attended training) to an impact-oriented question (whether students experience teaching as competent and motivating).

Limitations and Directions for Future Research

Several limitations qualify the findings. First, the cross-sectional design does not establish temporal precedence or causality. Second, students were nested within classes and teachers, but the supplied analysis was conducted at the student level; standard errors may therefore be underestimated if within-class dependence is substantial. Third, the study was conducted in one school, limiting contextual generalization. Fourth, competence and motivation relied on student reports, which may share response tendencies despite the acceptable single-factor diagnostic. Fifth, the item-level table documented 18 rows, whereas the preliminary CFA summary specified 20 indicators. A parameter-count check shows that the CFA value df = 164 is consistent with a conventional 20-indicator, four-factor model, suggesting that two item rows were omitted from the manuscript table. Their labels and coefficients were unavailable and were therefore not reconstructed. The structural-model value df = 168 also remains unverified because the corresponding parameter constraints were not documented. The original SEM output must be consulted before submission to restore the two omitted indicator rows and confirm the final structural fit statistics. The supplied draft also lacked complete information about instrument provenance, adaptation, ethics procedures, software, estimator, and missing-data treatment. Future studies should use longitudinal multilevel SEM, include observations and teacher knowledge measures, test alternative reciprocal models, and compare Islamic primary schools with different

levels of international-curriculum implementation. Such work would clarify how competence is enacted, how motivation changes over time, and which professional-development practices produce sustainable gains.

Conclusion

This study examined whether learning motivation statistically mediates the associations of student-perceived pedagogical and professional teacher competence with academic achievement in a Cambridge-based Islamic primary school. Both competence dimensions were positively associated with motivation and achievement, motivation had the strongest direct association with achievement, and the two indirect effects were significant; approximately half of each total competence–achievement association was transmitted through motivation, indicating partial mediation. The contribution of the study lies in demonstrating that students' experience of competent teaching may support achievement through two complementary routes: direct instructional quality and an indirect motivational process. The findings support integrated professional development that combines subject mastery, pedagogical content knowledge, formative assessment, and motivation-supportive classroom practice. Interpretation is limited by the cross-sectional single-school design, student-report measures, unmodelled clustering, and incomplete original SEM documentation, including two omitted indicator rows and an unreconciled structural-model degree of freedom. Future research should employ longitudinal and multilevel designs, triangulate student perceptions with observation and teacher-knowledge evidence, and test the model across diverse Islamic primary schools and curriculum configurations.

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and overall content of the manuscript, as outlined in the COPE guidelines.

Participant Consent

This study was conducted based on informed consent. Participating teachers and students' parents or guardians received an explanation of the study's objectives, data collection procedures, the use of questionnaires, potential risks and benefits, and data confidentiality protections. The participants involved in this study agreed to take part. Participation was voluntary, and refusal or withdrawal did not affect grades, educational services, or relationships with the school. Participants' identities were protected, and the research results were presented in aggregate form.

Conflict of Interest

The authors declare that they have no financial or nonfinancial conflicts of interest related to the conduct of this study, the interpretation of the results, or the publication of this article.

Author Contributions

F.K. contributed to the conceptualization of the study, coordination of the research process, data collection, and preparation of the initial draft of the manuscript. R.S.S.A.P. contributed to the development of the theoretical framework, formulation of the methodology, interpretation of the results, and substantive revisions to the manuscript. W.A. contributed to data management, statistical analysis, and the presentation and verification of research results. G.A.R. contributed to literature review, the development of the discussion section, and manuscript editing. A.M. contributed to the management of research documentation, reference verification, and final review of the manuscript. All authors have read and approved the final version of the manuscript and are responsible for the integrity of this work. The percentage of contribution for each author is as follows: F.K.: 20%; R.S.S.A.P.: 40%; W.A.: 20%; G.A.R.: 10%; and A.M.: 10%.

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