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Effective Professional Development Characteristics Provided by School Administrators and Teachers' Decision-Making Competency in a Selected Vocational School in Qingdao, China

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Abstract: This study examined the relationship between the perceived quality of school-based professional development (PD) and teachers' decision-making competency in a secondary vocational school in Qingdao, China. Guided by scholarship on effective PD and teacher judgment, the study focused on four PD dimensions - enhancement of content and pedagogic knowledge, provision of sufficient time and resources, promotion of collaboration, and contribution to affective gains - and three decision-making domains - planning, interaction, and evaluation. A descriptive-correlational survey design was used with 80 teachers selected from a faculty population of 98 at Qingdao No. 45 Middle School. Teachers rated both PD quality and their own decision-making competency positively. Collaboration emerged as the strongest perceived PD feature ($M = 2.77$, $SD = 0.49$), while evaluation decision-making received the highest competency rating ($M = 2.81$, $SD = 0.47$). No statistically significant differences were found by sex, length of service, or educational attainment. Most importantly, overall PD quality was moderately and positively associated with overall teacher decision-making competency ($r = 0.461$, $p < 0.001$). At the dimension level, sufficient time and resources were most closely related to planning decisions ($r = 0.238$, $p = 0.034$), whereas collaboration was particularly relevant to interaction decisions ($r = 0.370$, $p = 0.001$) and evaluation decisions ($r = 0.524$, $p < 0.001$). The findings indicate that vocational-school PD should move beyond occasional training events and instead prioritize protected planning time, structured collegial inquiry, peer feedback, and classroom-linked improvement routines. The paper concludes that professional development functions most effectively as an institutional decision-support system when it is embedded in the daily work of teachers.

Keywords: professional development, teacher decision-making, vocational education, China, school-based learning, teacher collaboration

I. INTRODUCTION

Teacher professional development (PD) is a central mechanism of school improvement because it shapes the knowledge, routines, and professional judgment that teachers bring to classroom work [1]-[4]. In vocational education, however, the importance of PD is even more pronounced. Vocational teachers operate at the boundary between school learning and occupational practice; they are expected to teach curriculum content, model industry-relevant practices, and respond to changing workplace expectations [5]-[8], [21]. This boundary-crossing role means that professional learning in vocational schools cannot be treated as a generic version of teacher training. It must be sufficiently contextualized to support decisions about practical tasks, workplace relevance, student engagement, and assessment of applied performance.

The present study addresses an underexplored but consequential question within this context: how do teachers' perceptions of PD quality relate to their own decision-making competency? This question matters in vocational schooling because teaching is not simply a matte

r of delivering content. Teachers in such settings routinely make judgments about lesson design, pacing, real-time adaptation, student participation, safety, task authenticity, and evaluation of both theoretical understanding and practical performance [6], [7], [11], [12], [14]-[18]. If PD is meant to improve instruction, then its value should be visible not only in teachers' positive reactions to learning activities but also in their capacity to make sound professional decisions before, during, and after teaching.

The study therefore contributes in four ways. First, it sharpens the theoretical argument linking specific PD characteristics to teacher decision-making competency rather than treating PD as a single undifferentiated construct. Second, it situates this relationship within vocational education, where the need for context-sensitive and practice-linked judgment is especially acute. Third, it presents consolidated empirical findings from a Qingdao vocational school using a clear manuscript structure aligned with international journal expectations. Fourth, it translates the results into an actionable agenda for school leaders who must decide how to allocate scarce time, resources, and collaborative opportunities.

Three research questions guide the analysis: (1) How do teachers rate the quality of PD across the dimensions of knowledge enhancement, time and resources, collaboration, and affective support? (2) How do teachers rate their own competency in planning, interaction, and evaluation decisions? (3) Which PD dimensions are most closely associated with which decision-making domains? These questions are especially relevant in the Chinese vocational-school context, where

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teachers often work with students who have diverse prior attainment, variable academic confidence, and uneven engagement with school-based learning [11], [12]. Under such conditions, decision-making is not a peripheral teaching skill but a core professional competence.

II. LITERATURE REVIEW AND ANALYTICAL FRAMEWORK

A. Effective Professional Development

Research on teacher PD has moved decisively away from one-off workshop models toward sustained, content-rich, and practice-linked learning [1], [2], [9]. Desimone's framework emphasizes content focus, active learning, coherence, duration, and collective participation [2], while Darling-Hammond, Hyler, and Gardner highlight content focus, active learning, collaboration, coaching, feedback, reflection, and sustained duration [1]. Read together, these frameworks suggest that effective PD does not work through labels alone; it works through mechanisms that deepen professional knowledge, create opportunities to rehearse and test ideas, and support transfer into practice [1], [2], [9].

In vocational education, those mechanisms are filtered through a distinctive institutional reality. Vocational teachers learn not only through formal school-based training but also through interaction with industry, workplace placement, peer dialogue, and participation in organizational routines [5]-[7], [21]. Systematic review evidence shows that contextual relevance, collaboration, and reflective exchange are recurring features of meaningful professional learning for vocational teachers [6]. Studies of vocational teacher development further underline the importance of boundary processes linking school and working life, as well as the perceived value and relevance of PD activities [7], [21]. These findings imply that PD in vocational schools should not merely replicate general education formats; it should support the practical interpretation of curriculum, student work, and occupational standards.

The present study therefore organizes PD into four analytically useful dimensions: enhancement of content and pedagogic knowledge, provision of sufficient time and resources, promotion of collaboration, and contribution to teachers' affective gains. This is not presented as a replacement for established frameworks. Rather, it is a contextual synthesis of the core mechanisms most relevant to a school-based vocational setting. Knowledge enhancement captures the content focus and pedagogical development emphasized in the broader PD literature [1], [2], [4]. Time and resources translate duration and organizational support into the concrete conditions teachers need in order to prepare, test, and refine instructional decisions [1], [10]. Collaboration reflects collective participation and collegial sense-making, both of which are especially important in vocational programs where teachers confront complex cases and mixed forms of evidence [6], [9], [19], [20]. Affective gains capture confidence, motivation, and efficacy, which may influence whether teachers are ready to enact what they learn [24], [25].

B. Teacher Decision-Making

Teacher decision-making has long been conceptualized as a professional process unfolding before, during, and after instruction [14]-[18]. Drawing mainly on Wilen and colleagues, the present study distinguishes among planning decisions, interaction decisions, and evaluation decisions [15]. Planning decisions concern instructional goals, sequencing, lesson structure, anticipation of student difficulties, and selection of materials. Interaction decisions occur in the flow of teaching as teachers respond to student questions, misconceptions, participation patterns, behavioral issues, and emerging opportunities. Evaluation decisions concern how teachers judge teaching methods, task effectiveness, and evidence of student learning [15], [17], [18].

This framework is analytically useful because it translates the broad idea of teacher judgment into observable phases of practice. It also aligns with research showing that teachers operate under conditions of bounded rationality, incomplete information, and competing classroom demands [14], [16]. In vocational education, these pressures may be magnified because teachers often need to integrate theory with demonstration, practical performance, and industry-linked expectations while responding to substantial variation in students' interests and preparedness [6], [7].

C. Why Professional Development Should Matter for Decision-Making

The theoretical pathway connecting PD and decision-making is therefore plausible but not uniform. PD should improve decision-making when it expands teachers' knowledge base, offers access to resources, creates occasions for feedback and reflection, and helps teachers interpret instructional evidence with colleagues. Yet different PD dimensions are likely to map onto different decision domains. Protected time and usable resources should matter most for planning decisions because planning depends on deliberate preparation, access to materials, and time to consider alternatives. Collaboration should matter strongly for interaction and evaluation decisions because teachers often refine their interpretations of classroom events, student work, and instructional effectiveness through dialogue, peer observation, and moderated comparison [6], [10], [19], [22], [23].

The predicted role of knowledge enhancement is more contingent. Knowledge-focused PD is theoretically central, but its effects may be weaker when the knowledge offered is generic rather than tightly connected to actual decision episodes. Similarly, affective gains may support participation and transfer indirectly by increasing confidence and willingness to act, even if they do not show a direct statistical association with each decision domain. These distinctions are especially important in vocational schools, where the question is not simply whether teachers learn from PD, but whether that learning is usable in the concrete situations where teachers must plan, adapt, and evaluate instruction.

On this basis, the study tests the following hypotheses:

H1: Perceived overall quality of professional development is positively associated with teachers' overall decision-making competency.

H1a: The dimension of sufficient time and resources is most relevant to planning decisions.

H1b: The dimension of collaboration is most relevant to interaction and evaluation decisions.

III. METHOD

A. Research Design

This study employed a descriptive-correlational design. No experimental manipulation was introduced; instead, the study examined the relationship between teacher-reported PD characteristics and teacher-reported decision-making competency using survey data. This design is appropriate for a school-based exploratory inquiry because it allows the researcher to describe the current PD environment and test whether meaningful associations exist among the focal constructs.

B. Research Site and Participants

The study was conducted at Qingdao No. 45 Middle School, a vocational school in Qingdao, Shandong Province, China. Eighty teachers were selected through simple random sampling from a faculty population of 98. The teaching staff included both academic-subject teachers and "double-qualified" vocational teachers with pedagogical as well as industry-related expertise. Because the study was conducted in a single institution, the findings should be interpreted as analytically informative rather than statistically representative of all vocational schools in China.

C. Instrument Development and Validation

The study used a researcher-developed questionnaire with three sections: respondent profile, perceived PD characteristics, and teacher decision-making competency. The substantive sections used a four-point Likert scale. The PD portion operationalized four dimensions - enhancement of content and pedagogic knowledge, sufficient time and resources, collaboration, and affective gains - while the decision-making portion covered planning, interaction, and evaluation decisions. This structure aligned the measurement instrument with the constructs synthesized in the literature review and the hypotheses tested in the study.

The version of the manuscript available for revision confirms that the instrument underwent content validation by three academic experts and that internal-consistency testing was conducted in SPSS. However, the archived source text does not preserve the full item-development record, pilot-test sample size, item-retention decisions, or the exact reliability coefficients for each subscale. To avoid overstating unavailable evidence, the revised manuscript makes this limitation explicit. For journal submission, the methodology section should be supplemented with an appendix showing item origins, expert-review criteria, pilot-test details, and the Cronbach's alpha values (or equivalent reliability indices) for each PD and decision-making subscale.

Even with that limitation, the instrument's conceptual organization is clear enough to support the present analysis: each scale is anchored to a defined construct, all sections were reviewed for content relevance, and the resulting variables correspond directly to the reported descriptive and correlational findings. The methodological priority for the next submission stage is therefore not to redesign the instrument, but to restore and report its validation evidence more transparently.

D. Data Analysis

The analysis combined descriptive and inferential statistics. Frequencies and percentages were used to summarize respondent characteristics. Weighted means and standard deviations were used to describe the four PD dimensions and three decision-making dimensions. Group comparisons across sex, length of service, and highest educational attainment were evaluated through reported F tests. Finally, Pearson product-moment correlations were used to test the relationships between PD dimensions and decision-making dimensions, as well as the relationship between overall PD quality and overall decision-making competency.

In preparing the revised manuscript, percentages in the respondent profile were recalculated from the reported frequencies to ensure internal consistency. The inferential statistics reported here remain those supplied in the source manuscript. No new coefficients were invented or back-estimated.

IV. RESULTS

A. Respondent Profile

The study involved 80 teachers. Forty-four respondents (55.0%) were female and 36 (45.0%) were male. The largest service group had 6-10 years of teaching experience, followed by teachers with 1-5 years and those with 15 years or more. Nearly half of the respondents held a master's degree. The profile suggests a professionally mixed faculty rather than a narrowly early-career or late-career sample.

Table 1. Respondent Profile

Variable	Category	n	%
Sex	Male	36	45.0
Sex	Female	44	55.0
Length of service	1-5 years	20	25.0
Length of service	6-10 years	23	28.8
Length of service	11-15 years	17	21.3
Length of service	15 years or more	20	25.0
Educational attainment	Bachelor's	21	26.3

Variable	Category	n	%
Educational attainment	Master's	38	47.5
Educational attainment	Doctoral	21	26.3

B. Perceived Quality of Professional Development

Teachers evaluated the school's PD positively across all four dimensions. Promotion of collaboration received the highest mean (M = 2.77, SD = 0.49), followed by affective gains (M = 2.72, SD = 0.54), sufficient time and resources (M = 2.69, SD = 0.53), and enhancement of content and pedagogic knowledge (M = 2.63, SD = 0.48). The overall PD mean was 2.70 (SD = 0.29).

Two patterns deserve emphasis. First, the strongest PD indicators were social and organizational rather than purely informational. Subject-area grouping in PD activities was particularly strong (M = 3.11), and opportunities for self-reflection and feedback were also rated favorably (M = 2.84). Second, the comparatively weaker indicators involved direct enhancement of content knowledge (M = 2.48) and provision of student-achievement data for the subject area (M = 2.59). This suggests that teachers experienced school-based PD as more successful in building collaborative and reflective structures than in deepening discipline-specific knowledge or data-informed instructional analysis.

Table 2. Professional Development Dimensions

PD dimension	Mean	SD	Highest-rated indicator	Lowest-rated indicator
Enhancement of content and pedagogic knowledge	2.63	0.48	Self-reflection and feedback integrated into PD (2.84)	Enhancement of content knowledge for courses taught (2.48)
Sufficient time and resources	2.69	0.53	PD occurs regularly throughout the school year (2.75)	Provision of student-achievement data for the subject area (2.59)
Promotion of collaboration	2.77	0.49	PD scheduled with teachers in the same subject area (3.11)	Engagement in collaborative projects during PD (2.51)
Affective gains	2.72	0.54	Confidence in implementing learning in classroom practice (2.90)	Enthusiasm and desire to apply learning in teaching practice (2.59)
Overall PD quality	2.70	0.29	-	-

C. Teacher Decision-Making Competency

Teachers also rated their own decision-making competency positively. Evaluation decision-making had the highest mean (M = 2.81, SD = 0.47), closely followed by planning decisions (M = 2.80, SD = 0.51) and interaction decisions (M = 2.76, SD = 0.48). The overall decision-making mean was 2.77 (SD = 0.31).

At the item level, evaluation was the most strongly endorsed area. Teachers reported strong agreement with evaluating teaching methods, efficiency, and learning outcomes separately (M = 3.30) and with using multiple assessment tools (M = 3.20). In interaction decision-making, the strongest item concerned attention to students' individual differences and interests (M = 3.15), whereas flexibility in adapting teaching strategies based on student responses was markedly lower (M = 2.34). This contrast implies that teachers value responsiveness but may find real-time adaptive expertise more difficult to enact consistently.

Table 3. Teacher Decision-Making Dimensions

Decision-making dimension	Mean	SD	Highest-rated indicator	Lowest-rated indicator
Planning decision	2.80	0.51	Recognition that planning, interaction, and evaluation decisions are integral to teaching (3.16)	Collaborative planning sessions improve lesson planning effectiveness (2.64)
Interaction decision	2.76	0.48	Attention to students' individual differences and interests (3.15)	Flexibility in adapting teaching strategies based on student responses (2.34)
Evaluation decision	2.81	0.47	Separate evaluation of teaching method, efficiency, and student outcomes (3.30)	Student feedback regularly incorporated into future teaching plans (2.51)
Overall decision-making competency	2.77	0.31	-	-

D. Descriptive Summary of Study Variables

To provide a concise overview of the study variables, Table 4 summarizes the means and standard deviations of the four PD dimensions, the three decision-making dimensions, and the two overall scales. This consolidated view helps locate the correlation findings within the broader descriptive profile of the sample.

Table 4. Descriptive Statistics for All Study Variables

Variable	Mean	SD	Interpretation
Content and pedagogic knowledge	2.63	0.48	Positive
Time and resources	2.69	0.53	Positive
Collaboration	2.77	0.49	Most strongly rated PD dimension
Affective gains	2.72	0.54	Positive
Planning decisions	2.80	0.51	Positive
Interaction decisions	2.76	0.48	Positive
Evaluation decisions	2.81	0.47	Highest-rated decision domain
Overall PD quality	2.70	0.29	Positive
Overall decision-making competency	2.77	0.31	Positive

E. Group Differences by Demographic Characteristics

No overall group differences were statistically significant. For overall PD quality, the reported p values were 0.195 for sex, 0.575 for length of service, and 0.399 for educational attainment. For overall decision-making competency, the corresponding p values were 0.404, 0.071, and 0.227. These results suggest that demographic characteristics did not substantially shape how teachers judged either the school's PD or their own decision-making competency.

The near-significant result for overall decision-making by length of service ($p = 0.071$) nonetheless indicates that career stage may still deserve attention in future research. A broader multi-school sample could determine whether this pattern reflects a real but small experience effect or simply sampling variation within a single institution.

Table 5. Summary of Group Comparisons by Respondent Profile

Outcome	Grouping factor	F	p	Interpretation
Overall PD quality	Sex	1.705	0.195	Not significant
Overall PD quality	Length of service	0.666	0.575	Not significant
Overall PD quality	Educational attainment	0.931	0.399	Not significant
Overall decision-making competency	Sex	0.704	0.404	Not significant
Overall decision-making competency	Length of service	2.437	0.071	Not significant
Overall decision-making competency	Educational attainment	1.513	0.227	Not significant

Note. None of the overall comparisons reached the conventional significance threshold of $p < 0.05$.

F. Correlation Between Professional Development and Decision-Making

The central finding of the study is the significant positive relationship between overall PD quality and overall teacher decision-making competency ($r = 0.461$, $p < 0.001$). This supports H1 and indicates that teachers who viewed PD more positively also tended to rate their decision-making competency more highly.

The dimension-level pattern is theoretically revealing. Provision of sufficient time and resources was positively associated with planning decisions ($r = 0.238$, $p = 0.034$), supporting H1a. Promotion of collaboration was positively associated with interaction decisions ($r = 0.370$, $p = 0.001$) and especially with evaluation decisions ($r = 0.524$, $p < 0.001$), supporting H1b. By contrast, enhancement of content and pedagogic knowledge showed no significant correlations with the three decision-making dimensions, and affective gains were also nonsignificant across the three decision domains.

The most defensible interpretation is not that knowledge or affect are unimportant. Rather, within this school's reported PD ecology, the dimensions most closely tied to decision-making were the ones that shaped the conditions under which teachers prepared, compared evidence, and interpreted classroom problems: time, resources, and collaboration.

Table 6. Correlations Between Professional Development and Teacher Decision-Making

PD dimension	Planning decisions	Interaction decisions	Evaluation decisions
Content and pedagogic knowledge	r = -0.035, p = 0.759	r = -0.083, p = 0.462	r = 0.065, p = 0.568
Sufficient time and resources	r = 0.238, p = 0.034*	r = -0.062, p = 0.582	r = 0.037, p = 0.744
Collaboration	r = 0.178, p = 0.114	r = 0.370, p = 0.001**	r = 0.524, p < 0.001**

PD dimension	Planning decisions	Interaction decisions	Evaluation decisions
Affective gains	r = 0.124, p = 0.272	r = 0.000, p = 0.999	r = -0.006, p = 0.958

Note. Overall PD quality and overall decision-making competency were moderately and positively correlated (r = 0.461, p < 0.001).

V. DISCUSSION

This study supports the argument that PD in vocational schools should be understood as an enabling infrastructure for professional judgment rather than as a collection of isolated training events. The positive association between overall PD quality and overall decision-making competency suggests that the more teachers experience PD as useful, collaborative, and adequately supported, the more likely they are to view themselves as capable decision makers across planning, classroom interaction, and evaluation.

The strongest finding concerns collaboration. Collaboration was the highest-rated PD dimension and the only dimension that showed significant links with both interaction and evaluation decisions. This pattern is consistent with literature emphasizing collective participation, peer exchange, and professional learning communities as mechanisms that help teachers interpret practice, compare evidence, and refine judgments [1], [6], [9], [19], [20]. In vocational schools, collaboration may be especially consequential because teachers often confront instructional situations that combine academic, technical, and behavioral demands. When teachers discuss cases, compare student work, or observe one another's lessons, classroom problems become jointly interpretable rather than privately managed. That logic helps explain the particularly strong relationship between collaboration and evaluation decisions.

The second important finding concerns time and resources. This dimension was significantly related only to planning decisions, a pattern that is conceptually coherent. Planning is the most deliberative phase of teacher decision-making and depends heavily on access to materials, schedules, examples, and uninterrupted preparation time. A school may endorse careful lesson design rhetorically, but without protected time teachers are more likely to rely on habit, improvisation, or last-minute preparation. The result therefore reinforces a key point from PD research: the organizational conditions surrounding PD are not minor implementation details; they are part of the mechanism through which PD influences practice [1], [2], [10].

The non-significant findings for content and pedagogic knowledge are also theoretically informative. One plausible explanation is that the knowledge provided in this school's PD may have been too generic, too diffuse, or insufficiently linked to the decision episodes teachers actually face. The weakest PD indicator in the dataset concerned direct enhancement of course content knowledge, which supports this interpretation. In other words, knowledge-focused PD may not have failed because knowledge is unimportant, but because the knowledge offered was not sufficiently job-embedded, curriculum-linked, or tied to concrete instructional dilemmas. For vocational teachers, knowledge becomes professionally powerful when it helps them diagnose misconceptions, sequence practical tasks, connect theory to application, and interpret students' work. If PD does not reach that level of specificity, its statistical association with decision-making may remain weak.

The non-significant findings for affective gains merit a similarly careful reading. Teachers generally felt that PD supported confidence, motivation, and satisfaction, yet these affective gains were not directly correlated with planning, interaction, or evaluation decisions. A reasonable interpretation is that affect functions more as a precondition or mediator than as a direct predictor. Feeling confident or motivated may increase willingness to participate in PD and experiment with new practices, but actual decision quality may depend more immediately on collegial sense-making, rehearsal, feedback, and access to usable resources. This interpretation is consistent with scholarship suggesting that positive reactions to PD do not automatically produce changes in practice unless mechanisms for transfer and application are present [23]–[25].

The absence of significant group differences by sex, length of service, and educational attainment is noteworthy for two reasons. On one hand, it suggests that the school's PD environment may have been experienced relatively evenly across different teacher groups. On the other hand, it may reflect the homogenizing effects of a single institutional culture. Teachers in the same school share leadership routines, schedules, and norms, which can suppress variation that might emerge more clearly across multiple schools. The near-significant service-length result for overall decision-making suggests that experience may still matter, but the present sample was not broad enough to resolve that issue decisively.

Finally, the vocational-school context itself is central to interpreting these findings. Compared with many general education settings, vocational schools often require teachers to navigate heterogeneous student motivation, variable academic preparation, practical performance tasks, and the dual expectations of schooling and work [6], [7], [11], [12]. Under such conditions, decision-making is a core survival skill. The study's results therefore strengthen the case for PD that is embedded in daily school work and explicitly designed to support the judgments teachers must make when they plan lessons, respond to student needs, and evaluate learning.

VI. PRACTICAL IMPLICATIONS FOR VOCATIONAL SCHOOL LEADERSHIP

For school leaders, the findings point to a focused PD agenda that emphasizes enabling conditions as much as content delivery. Table 7 summarizes the most actionable priorities.

Table 7. Priorities for School-Based Professional Development

Priority area	Evidence from the study	Recommended school-level action
Protected planning time	Time and resources correlated with planning decisions ($r = 0.238$, $p = 0.034$).	Schedule recurring joint planning periods and ensure access to curriculum materials, exemplars, and student data.
Structured collaboration	Collaboration showed the strongest links with interaction ($r = 0.370$) and evaluation ($r = 0.524$) decisions.	Strengthen subject-based lesson study, peer observation, moderated review of student work, and feedback protocols.
Content-deepening PD	Content and pedagogic knowledge was the lowest-rated PD dimension ($M = 2.63$) and was not significantly correlated with decision domains.	Provide discipline-specific workshops, demonstration lessons, and industry-informed updates tied directly to curriculum content.
Adaptive classroom decision-making	The lowest decision item concerned adapting strategies to student responses ($M = 2.34$).	Use coaching, video reflection, and classroom simulations to rehearse in-the-moment pedagogical adjustments.

First, PD should protect planning time. If planning decisions are related to sufficient time and resources, then school timetables, meeting calendars, and workload policies become part of instructional improvement. Administrators should create regular planning windows and ensure that teaching materials, curriculum documents, and student-performance information are readily accessible.

Second, collaboration should be formalized and made purposeful. The study school already appears to have subject-area structures and peer study groups that teachers value. These structures can be deepened through lesson study, moderated review of student work, peer observation with agreed feedback protocols, and collaborative evaluation of assessments. The aim is not collaboration for its own sake, but collaboration focused on instructional decisions.

Third, vocational-school leaders should strengthen content-specific knowledge work. The relatively lower rating for content knowledge enhancement suggests a need for more curriculum-linked workshops, demonstration lessons, and expert-supported inquiry within subject or vocational specialty areas. In vocational education, this may also include stronger school-industry linkages and authentic problem scenarios.

Fourth, affective support should be connected to transfer rather than treated as an end in itself. Confidence and motivation matter, but they become instructionally valuable when teachers also receive opportunities for rehearsal, feedback, coaching, and application. Recognition systems, mentoring, and follow-up conversations can help teachers convert positive disposition into changed professional action.

VII. LIMITATIONS

This study has several limitations. First, it is based on a single vocational school, so the external generalizability of the findings is necessarily limited. Second, all main variables rely on self-reported data; the results therefore reflect teacher perceptions rather than independently observed classroom practices. Third, the design is cross-sectional and correlational, which means that causal inferences cannot be made.

A further limitation concerns instrument reporting. Although the source manuscript confirms expert validation and SPSS-based reliability testing, the version available for revision does not preserve the pilot-test details or the exact reliability coefficients. This weakness does not invalidate the descriptive and correlational findings already reported, but it does need to be rectified before journal submission through fuller methodological documentation. Finally, minor inconsistencies in the original manuscript's percentages and presentation required recalculation and editorial clarification, underscoring the importance of precise technical reporting.

VIII. CONCLUSION

This study demonstrates a clear and practically relevant finding: within a Chinese vocational-school context, teachers' perceived quality of professional development is moderately and positively associated with their self-assessed decision-making competency. Participants rated both constructs positively, identified collaboration as the strongest feature of PD, and reported the highest competency in evaluation-related decisions. Responses were broadly consistent across demographic groups, suggesting that the school's PD environment was experienced in a relatively uniform way.

More importantly, the pattern of results shows that not all PD dimensions function through the same pathway. Sufficient time and resources appear most relevant to planning decisions, whereas collaboration shows the strongest links to interaction and evaluation decisions. For vocational-school leaders, the implication is straightforward: improving PD is not merely a matter of offering more training sessions. It requires deliberate redesign of the organizational conditions that shape how teachers plan, discuss, interpret evidence, and make judgments about instruction. In vocational education, where teachers must continually bridge curriculum, practical skills, and student diversity, PD should be strategically treated as an institutional decision-support system.

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