Perceived Quality and Satisfaction in an Excellence Teacher Professional Ability Training Programme: Evidence from Primary and Secondary School Teachers in Chongqing

Lebin Li

School of Teacher Education, Southwest University, Chongqing, China

https://orcid.org/0009-0000-1317-928X

Abstract

Background:
Excellence-oriented teacher professional development (PD) programmes have been promoted in China to support teachers in implementing curriculum reforms, promoting students' physical and mental health and strengthening school physical education and health education. However, empirical evidence on how frontline teachers perceive the quality of such programmes, and which design features matter most for their overall satisfaction, remains limited. This study evaluates teachers' perceptions of a provincial Excellence Teacher Professional Ability Training Programme in Chongqing, with particular attention to programme quality dimensions and primary–secondary stage comparisons.
Material and methods:
Data were collected via a post-training questionnaire from 48 in-service teachers (9 primary, 39 secondary) who participated in the programme. The instrument measured overall satisfaction, perceived programme organisation, content relevance, lecturer expertise, time allocation and interactive engagement, as well as satisfaction with specific course components (e.g. mental health education, classroom and crisis management, AI-era classroom design). Responses were given on five-point Likert scales. Descriptive statistics were used to characterise evaluation profiles; independent-samples t tests compared primary and secondary teachers; Pearson correlations examined associations between variables; and multiple linear regression identified predictors of overall satisfaction.
Results:
Teachers reported generally positive evaluations of the programme across all quality dimensions and course components. No statistically significant differences were found between primary and secondary teachers in overall satisfaction or dimension scores. Correlation analyses showed strong positive associations between overall satisfaction and perceived organisation, content relevance, lecturer expertise, time allocation and interactive engagement. The regression model was significant, $F(4, 43) = 19.37$, $p < .001$, explaining 64.3% of the variance in overall satisfaction. Content relevance emerged as the only significant unique predictor, while other dimensions did not retain independent effects when entered simultaneously.
Conclusions:
The findings suggest that excellence-oriented PD programmes can be well received by teachers across school stages when basic organisational conditions and interaction opportunities are met. Content that closely matches teachers' real classroom challenges, curriculum demands and health-oriented reform tasks appears particularly critical for driving overall satisfaction. For the design of future programmes in school physical education and health education, prioritising high-relevance, practice-based content may be more consequential than further refinements in scheduling or delivery format alone.

Keywords: teacher professional development; programme evaluation; perceived quality; school physical education; China

1. Introduction

Teacher professionalism has become a central concern in contemporary educational reform, particularly in areas where schools are expected to promote not only academic achievement but also students' physical and mental health. In China, national strategies such as China's Education Modernization 2035 explicitly link high-quality education to the construction of a "strong sports nation" and a "healthy China", positioning teachers as key agents in integrating intellectual, physical, aesthetic and moral development in everyday schooling (Central Committee of the Communist Party of China & State Council, 2019). Within this agenda, school physical education and health education are no longer treated as marginal add-ons, but as foundational components of students' holistic development. The Physical Education and Health Curriculum Standards for Compulsory Education (2022 edition) and related Opinions on comprehensively strengthening school physical education emphasise student-centred, competence-oriented and scenario-based teaching, and explicitly call on teachers to design learning experiences that support students' lifelong physical activity habits, health literacy and socio-emotional wellbeing (General Office of the CPC Central Committee & General Office of the State Council, 2020; Ministry of Education of the People's Republic of China, 2022).

Against this background, teacher professionalism is increasingly understood not only as a matter of formal qualifications but as a dynamic capacity to integrate subject knowledge, pedagogical judgement, digital literacy and collaborative practice. Empirical studies in physical education and related fields have examined how teachers attempt to respond to these expectations through interdisciplinary thematic instruction, pedagogical innovation and curriculum design. For example, Xianghan et al. (2025) show how interdisciplinary thematic instruction in physical education and health can integrate competences across domains, while Huang et al. (2024) document efforts by university physical education teachers to renew their teaching ideas in response to new curricular demands. Other work highlights the importance of empathy, classroom monitoring and relational competence in shaping the quality of teaching interactions, particularly in physical education contexts that require close teacher–student contact and continuous observation (Muszkieta et al., 2015).

At the same time, research on teacher professionalism has increasingly emphasised the conditions under which teachers are able to develop and sustain such capacities. International reviews of teacher professional development (PD) consistently point to a set of core features associated with positive outcomes: a strong content focus, active learning, coherence with teachers' professional contexts, sufficient duration and opportunities for collective participation (Desimone, 2009; Darling-Hammond et al., 2017). Studies of pre-service and in-service programmes in different subject areas similarly underscore the importance of structured curricula for teaching methods, practice-oriented tasks and school-based inquiry in building specific competencies, such as competitive activity organisation or practice-oriented research capacity (Dong et al., 2025; Kashuba, 2017; Tsisaruk, 2020). In physical education and related disciplines, digital transformation has added a further layer of complexity, making teachers' ability to access, adapt and orchestrate digital resources an increasingly central component of their professional repertoire (Gao & Jing, 2025).

In China, provincial and municipal initiatives under labels such as "excellent teacher" or "excellence teacher professional ability" programmes have emerged as key mechanisms for

driving such professional upgrading. These programmes typically combine expert lectures, workshops, classroom observations, school-based projects and collaborative inquiry, and are expected to align teachers' professional growth with national reform goals and local development priorities. Recent studies published in Quality in Sport show that teachers and teacher educators often value programme elements that provide concrete teaching cases, interdisciplinary design models and opportunities for reflective dialogue (Huang et al., 2024; Xianghan et al., 2025). Yet, despite substantial policy investment, empirical evidence on how frontline teachers themselves perceive the quality of excellence-oriented PD programmes remains limited, especially in large-scale initiatives that cut across school stages and subjects.

Understanding teachers' perceptions of programme quality is particularly important in this context. For schools to translate policy aspirations about "health first", core competencies and whole-person development into everyday practice, teachers need professional development (PD) opportunities that genuinely help them respond to concrete challenges in areas such as classroom management, student mental health, school–family–community collaboration and the implementation of new physical education and health curricula. Self-reported evaluations of PD provide a proximal indicator of whether programme design features—such as content relevance, organisation, lecturer expertise, time allocation and interactive engagement—are experienced as supportive of teachers' efforts to promote students' physical and mental health, and to align their teaching with curriculum standards and reform priorities (Darling-Hammond et al., 2017; Desimone, 2009). At the same time, such perceptions are likely to influence teachers' willingness to engage deeply with programme activities and to transfer new ideas into school physical education and health education practice.

The present study addresses this need by focusing on teachers' evaluations of a provincial "Excellence Teacher Professional Ability Training Programme" implemented in Chongqing, which brought together primary and secondary school teachers from different subjects and included modules related to classroom and crisis management, school mental health education, interdisciplinary lesson design and AI-supported instruction. Rather than directly measuring classroom performance, the study takes teachers' self-reported evaluations of programme quality as its primary empirical focus. Specifically, it examines : (a) how teachers rate overall satisfaction and key dimensions of programme quality, including organisation, content relevance, lecturer expertise, time allocation and interactive engagement, as well as specific course components; (b) whether primary and secondary school teachers differ in their evaluations; and (c) which aspects of the programme most strongly predict teachers' overall satisfaction. By doing so, the study links broader discussions of teacher professionalism, school physical education and health-oriented reform to the concrete design and evaluation of an excellence-oriented PD programme within China's educational modernization agenda.

2. Literature review and theoretical framework

2.1 Teacher professionalism and professional development in the Chinese reform context
Teacher professionalism in China is being reshaped by ambitious reform agendas that seek not only to expand access but also to improve quality and equity. China's Education Modernization 2035 outlines a comprehensive vision in which teachers are expected to play a leading role in innovating pedagogy, integrating moral, intellectual, physical and aesthetic education, and supporting students' lifelong development (Central Committee of the Communist Party of China & State Council, 2019). Within this vision, teachers are positioned as "designers" of

learning rather than mere implementers of prescribed curricula. In school physical education, the Physical Education and Health Curriculum Standards for Compulsory Education (2022 edition) and related Opinions on strengthening school physical education translate these expectations into more concrete requirements: teachers are asked to design competence-oriented tasks, integrate physical and mental health education, and adapt to students' diverse needs and developmental trajectories (General Office of the CPC Central Committee & General Office of the State Council, 2020; Ministry of Education of the People's Republic of China, 2022).

Internationally, similar shifts have been observed in discussions of teacher professionalism, where the focus has moved from static notions of status and qualification to dynamic notions of competence, identity and adaptive expertise. Studies of teacher professionalism in different subject areas—including technology education, geography and physical education—highlight that professional teachers are those who can interpret curriculum demands, make context-sensitive pedagogical decisions and engage in continuous development (Hevko, 2016, 2019, 2020; Metelski, 2019; Tsisaruk, 2020). In this sense, professionalism is not an individual attribute alone but is deeply shaped by the opportunities and constraints provided by professional development systems. Excellence-oriented PD programmes thus become a crucial lever through which policy aspirations regarding teacher professionalism are translated into concrete learning experiences for teachers.

2.2 Features of effective professional development and dimensions of perceived programme quality

Research on effective professional development provides a useful lens for conceptualising the dimensions along which teachers may evaluate PD programmes. Synthesising evidence from large-scale impact studies, Desimone (2009) argued that effective PD tends to share several core features: a content focus, active learning, coherence with other reform initiatives and teachers' goals, sufficient duration and collective participation. Building on this and related work, Darling-Hammond et al. (2017) further emphasised the importance of practice-based learning opportunities, collaborative structures and expert support in sustaining changes in teaching practice.

Empirical studies in different national and subject contexts flesh out how these features are instantiated in concrete programmes. For instance, Dong et al. (2025) found that structured course clusters in pre-service teacher education, organised around teaching methods and supported by coherent practice tasks, helped pre-service teachers develop more integrated teaching competencies. Kashuba (2017) examined the preparation of future physical education teachers for organising competitive activities, showing that carefully designed practical components within PD can strengthen specific professional skills. Tsisaruk (2020) and Hevko (2020) similarly highlighted the role of well-organised, practice-oriented PD experiences in developing future teachers' professional readiness in labour education and geography. Work on the digital transformation of teacher resource ecosystems indicates that PD which supports teachers in navigating digital platforms and resources can significantly enhance their capacity to respond to the demands of digitally mediated instruction (Gao & Jing, 2025).

These studies suggest that teachers are likely to judge PD programmes along several interrelated dimensions: Content relevance: the extent to which programme content is perceived as closely

connected to teachers' subject areas, classroom challenges and reform-related tasks; Lecturer expertise: perceptions of trainers' professional credibility, including both academic knowledge and school-based experience; Organisation and time allocation: the clarity of programme structure, scheduling and workload, and the perceived appropriateness of the time devoted to different components; Interactive engagement: opportunities for active participation, peer discussion, collaborative problem-solving and reflection.

In evaluations of PD programmes published in Quality in Sport, teachers and teacher educators consistently highlight these dimensions when explaining why particular training experiences were considered helpful or insufficient (Huang et al., 2024; Xianghan et al., 2025; Metelski, 2019). This convergence provides a conceptual basis for treating these dimensions as key indicators of perceived programme quality in the present study.

2.3 Teacher self-reported evaluations of professional development programmes

While much PD research has relied on student achievement data or external observations to assess programme impact, teacher self-reports remain a crucial source of information about how PD is experienced on the ground. Carefully designed questionnaires can capture teachers' evaluations of programme content, pedagogy and organisation, as well as their perceived learning gains and remaining needs. Such perceptions are not simply subjective impressions; they reflect teachers' internalised judgements about whether a programme aligns with their professional trajectories and school realities (Darling-Hammond et al., 2017).

In the context of physical education and related subjects, self-report data have been used to explore teachers' professional attitudes, empathic behaviours and readiness to implement new approaches. Muszkieta et al. (2015), for example, examined teachers' monitoring and empathic behaviour during physical education lessons, showing how teachers' relational orientations can be systematically assessed and linked to classroom dynamics. Studies on teaching idea innovation, interdisciplinary thematic instruction and digital resource use also frequently rely on teacher questionnaires to evaluate programme components and inform iterative refinement (Gao & Jing, 2025; Huang et al., 2024; Xianghan et al., 2025). In the broader professional formation literature, self-assessment has been viewed as both an object of study—revealing how teachers conceptualise their own professionalism—and a tool for guiding professional growth (Hevko, 2016, 2019).

However, previous work often focuses on specific groups (e.g. pre-service teachers, physical education teachers in higher education) or on selected aspects of professionalism, such as digital literacy or competitive activity organisation (Gao & Jing, 2025; Kashuba, 2017; Tsisaruk, 2020). Less attention has been paid to how in-service teachers across school stages evaluate large-scale excellence-oriented PD programmes that bring together multiple subjects. In particular, there is limited evidence on (a) the overall profiles of satisfaction and perceived quality across key dimensions, (b) potential differences between primary and secondary school teachers, and (c) the relative contribution of different programme features to teachers' overall satisfaction. Addressing these gaps requires a design that combines descriptive, comparative and predictive analyses of teachers' self-reported evaluations.

2.4 Primary and secondary school teachers' perspectives

Primary and secondary school teachers work under different curricular structures and student age profiles, which may shape their experiences of and expectations for PD. Primary school teachers often teach multiple subjects and may prioritise broad pedagogical strategies, classroom management and student wellbeing, whereas secondary school teachers are more likely to specialise in particular subjects and to be strongly influenced by examination pressures and subject-specific curriculum reforms. At the same time, policy documents such as China's Education Modernization 2035 and the Opinions on strengthening school physical education increasingly emphasise a set of shared cross-stage competencies—supporting students' physical and mental health, fostering core competencies, collaborating with families and communities—that are expected of all teachers, regardless of school level (Central Committee of the Communist Party of China & State Council, 2019; General Office of the CPC Central Committee & General Office of the State Council, 2020).

Empirical studies of teacher professionalism have tended either to focus on particular school stages or to treat teacher samples as homogeneous, leaving stage-related differences in PD evaluations under-explored. For example, Hevko (2016, 2020) and Tsisaruk (2020) concentrated on future teachers in specific subject areas, while studies in physical education have often examined either school or university settings separately (Huang et al., 2024; Kashuba, 2017; Metelski, 2019). As a result, it remains an open question whether primary and secondary school teachers experience excellence-oriented PD programmes in similar or different ways. Understanding potential convergence or divergence in their evaluations is important for informing programme design: strong convergence may justify common "core modules" across school stages, whereas meaningful divergence may point to the need for stage-specific differentiation.

2.5 Analytical framework and research questions

Drawing on the above literature, the present study adopts a framework that links established features of effective professional development to teachers' perceived programme quality. In this framework, overall satisfaction is treated as a global indicator of how well the programme, as experienced by teachers, supports their professional learning within the broader reform context. This global evaluation is assumed to be shaped by several interrelated dimensions corresponding to key PD design features identified in previous research: Programme organisation (clarity of structure, scheduling and logistical support), reflecting the coherence and manageability of the learning process; Content relevance (perceived alignment of topics with teachers' subject areas, classroom challenges and policy demands), reflecting the content focus of PD; Lecturer expertise (perceptions of trainers' academic and school-based credibility), reflecting the quality of expert support; Time allocation (perceived appropriateness of time devoted to different components), reflecting duration and pacing; Interactive engagement (opportunities for participation, dialogue and collaboration), reflecting active and collective learning.

Within this framework, teachers' evaluations of specific course components further contextualise these dimensions, revealing which substantive topics are experienced as most or least valuable. The study assumes that higher scores on these dimensions will be associated with higher overall satisfaction, but that their relative contributions may differ. It also considers

the possibility that primary and secondary school teachers, despite operating in different contexts, may or may not differ significantly in their evaluations of the same programme.

Accordingly, the study is guided by the following research questions:
1. What are teachers' perceived levels of programme quality and satisfaction across key dimensions (overall satisfaction, programme organisation, content relevance, lecturer expertise, time allocation and interactive engagement), and how do they evaluate specific course components within the excellence teacher professional ability training programme?
2. Do primary and secondary school teachers differ in their evaluations of overall satisfaction and the specific dimensions of programme quality?
3. Which dimensions of perceived programme quality most strongly predict teachers' overall satisfaction with the programme?

By addressing these questions, the study seeks to connect macro-level aspirations regarding teacher professionalism and effective professional development with teachers' micro-level experiences of an excellence-oriented programme. The analytical framework thus provides a coherent bridge between the policy and literature review in the preceding sections and the empirical analyses presented in the subsequent Results and Discussion.

3. Method

3.1 Research context and programme

The study was conducted in the context of a provincial "Excellence Teacher Professional Ability Training Programme" implemented in Chongqing, China. The programme was designed to support the upgrading of in-service teachers' professional competencies in line with national reform agendas such as China's Education Modernization 2035 and the Physical Education and Health Curriculum Standards for Compulsory Education (2022 edition) (Central Committee of the Communist Party of China & State Council, 2019; Ministry of Education of the People's Republic of China, 2022).

The programme brought together primary and secondary school teachers from different subject areas and combined expert lectures, thematic workshops and practice-oriented sessions. Core thematic modules addressed issues such as classroom and crisis management, school mental health education, interdisciplinary lesson design and the use of digital and AI-supported tools in teaching. The training was organised over a concentrated period, with participants attending a series of centrally organised sessions on a university campus or designated training site.

3.2 Participants

Participants in this study were in-service teachers who took part in one iteration of the excellence teacher professional ability training programme in Chongqing. All teachers attending the programme were invited to complete a post-training questionnaire. Participation in the survey was voluntary, and responses were collected anonymously.
After excluding cases with substantial missing data, the final analytic sample comprised 48 teachers, including 9 primary school teachers and 39 secondary school teachers. Teachers represented a range of subject areas, including but not limited to Chinese, mathematics, English,

physical education and other disciplines. The primary/secondary distinction was used as a grouping variable in subsequent analyses to explore potential differences in programme evaluations across school stages.

3.3 Instruments

Data were collected using a structured questionnaire developed for the purposes of programme evaluation. The instrument consisted of three main parts relevant to the present analysis.

Overall satisfaction. Teachers' global perceptions of the programme were captured with a single item asking them to rate their overall satisfaction with the training ("Overall, how satisfied are you with this training programme?"). Responses were given on a five-point Likert scale ranging from 1 (very dissatisfied) to 5 (very satisfied).

Perceived programme quality dimensions. A set of items assessed teachers' evaluations of key aspects of the programme design, corresponding to core features of effective professional development identified in previous research (Darling-Hammond et al., 2017; Desimone, 2009). Teachers were asked to rate: the overall organisation of the programme (e.g. clarity of arrangements, scheduling, logistical support); the relevance of the content to their teaching practice and professional needs; the professional expertise of lecturers and trainers; the adequacy of time allocation across different components or topics; the level of interactive engagement (e.g. opportunities for discussion, participation and collaboration).
All items were rated on the same five-point scale from 1 (very poor) to 5 (very good). For descriptive and correlational analyses, item scores were treated as approximately continuous, consistent with common practice in survey-based research on teacher professional development (Desimone, 2009; Darling-Hammond et al., 2017).

Course-specific satisfaction. In addition to overall and dimension-specific evaluations, teachers rated their satisfaction with individual course components within the programme (e.g. sessions on school mental health education, classroom management, crisis management, interdisciplinary thematic instruction and AI-era classroom design). These ratings were also made on five-point Likert scales. Course-specific data were used to provide a more fine-grained descriptive picture of which thematic modules were perceived as particularly valuable or in need of improvement.

The questionnaire also included basic background items (e.g. school stage, subject taught). Only the school stage variable (primary vs secondary) was used analytically in the present study as a grouping variable.

3.4 Procedure

The questionnaire was administered at the end of the training period during a scheduled plenary session. Participants were informed that the survey was part of a broader evaluation effort designed to improve the programme and that their responses would be used only for research and quality assurance purposes. Completion of the questionnaire took approximately 10–15 minutes.

Teachers completed the instrument via an online survey platform, depending on the organisational arrangements of the session. All data were subsequently entered into a statistical database for analysis. Cases with extensive missing responses on the key evaluation items were removed prior to analysis; for the remaining data, occasional missing values were handled using pairwise deletion in correlation analyses and listwise deletion in regression models.

3.5 Data analysis

Data were analysed using IBM SPSS Statistics. All statistical tests were two-tailed, with a significance level of $\alpha = .05$.

Descriptive statistics (means and standard deviations) were computed for overall satisfaction, the five programme quality dimensions and course-specific satisfaction ratings to characterise the general profile of teachers' evaluations. These results address Research Question 1 and provide a basis for identifying perceived strengths and areas for improvement.

To examine potential differences between school stages (Research Question 2), independent-samples t tests were conducted comparing primary and secondary school teachers on overall satisfaction and each of the programme quality dimensions. In addition to p values, Cohen's d was calculated as an effect size index, with values around 0.20, 0.50 and 0.80 interpreted as small, medium and large effects, respectively.

Pearson correlation coefficients were calculated among the total programme evaluation score, overall satisfaction and the five programme quality dimensions to explore the pattern of associations between global and specific evaluations. These analyses provided preliminary insight into which aspects of the programme were most closely related to teachers' overall satisfaction.

To identify the unique contribution of different programme features to overall satisfaction (Research Question 3), a multiple linear regression analysis was performed with overall satisfaction as the dependent variable and content relevance, lecturer expertise, time allocation and interactive engagement as predictors. Programme organisation was used descriptively but not entered into the regression model to avoid over-parameterisation given the modest sample size. The Enter method was employed to include all predictors simultaneously. Model fit was evaluated using R and adjusted R^2, and overall significance was assessed using the F test. For each predictor, unstandardised and standardised coefficients (B and β), t values and p values were examined. Variance inflation factors (VIFs) were inspected to check for potential multicollinearity; values below 5 were taken as indicating no serious multicollinearity problems.

4. Results

4.1 Descriptive statistics of overall training evaluation and course satisfaction

A total of 48 valid questionnaires were collected. In general, participants reported a high level of satisfaction with the excellent teacher professional development programme. Regarding the overall arrangement, the mean score for organisational quality was 4.31 (SD = 0.72), and the overall satisfaction reached 4.50 (SD = 0.74). With respect to specific aspects of the training, content relevance (M = 4.40, SD = 0.77), lecturer expertise (M = 4.58, SD = 0.54),

appropriateness of time allocation (M = 4.40, SD = 0.68) and interactive engagement (M = 4.42, SD = 0.68) were all clearly above the midpoint of the scale, indicating that the design of the programme was generally aligned with teachers' professional needs and created a positive learning climate.

At the course level, most thematic sessions received very favourable ratings, with mean scores exceeding 4.40. The highest satisfaction was observed for School mental health education (M = 4.67, SD = 0.52) and Reading report sharing and seminar (M = 4.67, SD = 0.56), followed by Classroom management strategies and skills (M = 4.63, SD = 0.61), The art of teachers' language expression (M = 4.60, SD = 0.61), Teacher "school–family–community" collaboration competence (M = 4.56, SD = 0.62) and Research on the new college entrance examination (M = 4.54, SD = 0.80). The relatively small standard deviations (mostly between 0.5 and 0.8) suggest a high level of consensus among teachers on the usefulness of these sessions.

In contrast, Experience sharing of master teacher studios (M = 3.98, SD = 1.23) and Ice-breaking activities (M = 4.13, SD = 1.20) showed lower mean scores and considerably larger variability, implying more divergent perceptions of their relevance and effectiveness. Similarly, sessions such as Where does the school's cultural gene come from? (M = 4.29, SD = 0.92) and Changes in classroom teaching forms and the transformation of teachers' roles in the AI era (M = 4.23, SD = 0.88) obtained slightly lower ratings than other themes, indicating potential room for refinement in terms of content focus, practical cases and contextual alignment with everyday school teaching. Overall, the programme presented a generally high satisfaction profile, while also revealing several courses that could be prioritised for further improvement and differentiated design. The specific analysis results are presented in Table 1.

Table 1. Descriptive statistics of overall training evaluation and course satisfaction

Variable	N	Min	Max	M	SD
Organisation of training	48	3	5	4.31	0.72
Overall satisfaction	48	2	5	4.50	0.74
Content relevance	48	2	5	4.40	0.77
Lecturer expertise	48	3	5	4.58	0.54
Time allocation	48	3	5	4.40	0.68
Interactive engagement	48	3	5	4.42	0.68

4.2 Differences between primary and secondary school teachers

Independent-samples t-tests were conducted to examine whether teachers from primary and secondary schools differed in their evaluations of the excellent teacher professional development programme. Primary school teachers (n = 9) reported slightly higher scores than secondary school teachers (n = 39) on all indicators, including the composite total score (76.89 ± 12.22 vs. 71.64 ± 9.55), overall satisfaction (4.67 ± 0.71 vs. 4.46 ± 0.76), content relevance (4.22 ± 0.97 vs. 4.44 ± 0.72), lecturer expertise (4.67 ± 0.50 vs. 4.56 ± 0.55), time allocation (4.56 ± 0.53 vs. 4.36 ± 0.71) and interactive engagement (4.67 ± 0.50 vs. 4.36 ± 0.71). However, none of these differences reached statistical significance. For the total score, the difference of about 5.25 points was non-significant, $t(46) = 1.41$, $p = .165$. Likewise, stage-related differences in overall satisfaction and the four specific evaluation dimensions were all non-significant, ps ranging from .224 to .612.

Effect size estimates were generally small to moderate in magnitude (e.g. Cohen's $d = 0.52$ for the total score, 0.27 for overall satisfaction and between −0.28 and 0.46 for the specific dimensions), and all 95% confidence intervals included zero, indicating substantial uncertainty around these estimates. Taken together, these findings suggest that the programme achieved a broadly comparable level of perceived quality across primary and secondary school contexts. Although primary school teachers tended to give slightly higher ratings on several indicators, these differences were not statistically reliable and may partly reflect the relatively small number of primary school participants. The specific analysis results are presented in Table 2.

Table 2. Comparison of programme evaluations between primary and secondary school teachers (independent-samples t-tests)

Variable	Primary (M)	Primary (SD)	Secondary (M)	Secondary (SD)	t	df/p
Total score	76.89	12.22	71.64	9.55	1.410	46/.165
Overall satisfaction	4.67	0.71	4.46	0.76	0.742	46/.462
Content relevance	4.22	0.97	4.44	0.72	-0.752	46/.456

Lecturer expertise	4.67	0.50	4.56	0.55	-0.510	46/.612
Time allocation	4.56	0.53	4.36	0.71	0.783	46/.438
Interactive engagement	4.67	0.50	4.36	0.71	1.232	46/.224

Note. Primary school teachers (n = 9); secondary school teachers (n = 39). Scores for overall satisfaction and each dimension were rated on a 5-point Likert scale (1 = very dissatisfied, 5 = very satisfied). All p-values are two-tailed.

4.3 Correlations among overall satisfaction and evaluation dimensions

Pearson correlation analyses were conducted to examine the associations among the total score, overall satisfaction and the six evaluation dimensions. As shown in Table 3, the total score was strongly and positively correlated with overall satisfaction (r = .855, p < .001), lecturer expertise (r = .801, p < .001), time allocation (r = .780, p < .001), interactive engagement (r = .867, p < .001), content relevance (r = .832, p < .001) and organisational arrangement (r = .694, p < .001). This pattern indicates that higher perceived quality on any aspect of the programme is consistently associated with a higher overall evaluation of the training.

Focusing on overall satisfaction as a key outcome, the strongest bivariate correlations were observed with content relevance (r = .767, p < .001), interactive engagement (r = .758, p < .001) and organisational arrangement (r = .736, p < .001), followed by time allocation (r = .698, p < .001) and lecturer expertise (r = .637, p < .001). In other words, teachers who perceived the training content as more relevant to their needs, experienced higher levels of interaction and felt the sessions were well organised and appropriately scheduled tended to report higher overall satisfaction with the programme. Moreover, the evaluation dimensions were also highly intercorrelated with each other (e.g. r = .823 between interactive engagement and content relevance, r = .802 between time allocation and content relevance, all ps < .001), suggesting that they represent closely related facets of an overarching construct of perceived programme quality. Detailed correlation coefficients are presented in Table 3.

Table 3. Pearson correlations among total score and evaluation dimensions

Variable	1	2	3	4	5	6	7
1. Total score	1.00						
2. Overall satisfaction	.855**	1.00					

3. Lecturer expertise	.801**	.637**	1.00			
4. Time allocation	.780**	.698**	.754**	1.00		
5. Interactive engagement	.867**	.758**	.775**	.792**	1.00	
6. Content relevance	.832**	.767**	.667**	.802**	.823**	1.00	
7. Organisation of training	.694**	.736**	.507**	.615**	.643**	.699**	1.00

Note. N = 48. Values are Pearson correlation coefficients. All off-diagonal correlations are significant at $p < .01$ (two-tailed).

4.4 Regression analysis predicting overall satisfaction

To further examine which specific aspects of the programme contributed most strongly to teachers' overall satisfaction, a multiple linear regression analysis was conducted with overall satisfaction as the dependent variable and content relevance, lecturer expertise, time allocation and interactive engagement as predictors. The model showed a good fit to the data, $R = .80$, $R^2 = .64$, adjusted $R^2 = .61$, indicating that these four dimensions together explained approximately 61% of the variance in overall satisfaction. The overall regression model was statistically significant, $F(4, 43) = 19.37$, $p < .001$.

As shown in Table 4, when all four predictors were entered simultaneously, content relevance emerged as the only significant unique predictor of overall satisfaction ($B = 0.39$, $SE = 0.17$, $\beta = 0.40$, $t = 2.25$, $p = .030$). Interactive engagement also showed a positive but non-significant trend ($\beta = 0.32$, $p = .108$), whereas lecturer expertise ($\beta = 0.07$, $p = .667$) and time allocation ($\beta = 0.08$, $p = .675$) did not contribute significantly once the shared variance with the other dimensions was controlled for. No serious multicollinearity was detected, with all variance inflation factors (VIFs) below 5.

Taken together with the correlation results, these findings suggest that teachers' global satisfaction with the excellence teacher professional development programme is shaped by a cluster of interrelated perceptions, but that the perceived relevance of training content to teachers' actual professional needs plays a particularly central and distinctive role.

Table 4. Multiple regression predicting overall satisfaction from evaluation dimensions

Predictor	B	SE B	β	t	p	VIF

Constant	0.464	0.580	—	0.800	.428	—
Lecturer expertise	0.093	0.214	0.067	0.433	.667	2.91
Content relevance	0.391	0.174	0.402	2.248	.030	3.85
Time allocation	0.082	0.196	0.075	0.422	.675	3.81
Interactive engagement	0.346	0.211	0.316	1.642	.108	4.47

Note. Dependent variable: overall satisfaction with the programme. N = 48.

5. Discussion

5.1 Summary of main findings

This study evaluated teachers' perceptions of an excellence teacher professional development programme implemented in Chongqing, focusing on overall satisfaction as well as specific dimensions of programme quality. Three main findings emerged. First, participants reported generally high levels of satisfaction with the programme as a whole, particularly with the expertise of trainers, the relevance of the content, and the interactive nature of the sessions. Second, primary and secondary school teachers did not differ significantly in their evaluations, suggesting that the core design of the programme was broadly applicable across school stages. Third, correlation and regression analyses indicated that, although multiple aspects of the programme were strongly associated with overall satisfaction, perceived content relevance played a particularly central and unique role in predicting teachers' global evaluation of the training.

5.2 Relationship to previous research and theoretical implications

The high levels of reported satisfaction are broadly consistent with prior studies on structured in-service professional development, which have highlighted the importance of coherent programme design, sustained learning opportunities and alignment with teachers' classroom realities (e.g. Darling-Hammond et al., 2017; Desimone, 2009). In line with this literature, the present findings suggest that excellence-oriented professional development can be well received when it combines subject-relevant content, experienced trainers and opportunities for interaction and reflection.

The central role of content relevance as a unique predictor of overall satisfaction adds nuance to existing models of effective professional development. Desimone's (2009) core features framework emphasises content focus as a key characteristic; our regression results extend this argument by showing that, even when controlling for lecturer expertise, time allocation and interactive engagement, teachers still place particular weight on whether the training content is perceived as directly connected to their daily teaching challenges and professional growth needs. In this sense, "content–practice alignment" may function as a proximal mechanism through

14

which broader design features (such as programme organisation, facilitation style and scheduling) exert their influence on teachers' overall evaluations.

The absence of significant differences between primary and secondary school teachers also yields theoretical implications. It suggests that, at least in this context, stage-specific needs may be overridden by a set of shared professional concerns around classroom management, assessment pressures, student mental health and the integration of new policy demands (e.g. curriculum reform, AI-era teaching). This resonates with studies indicating that, despite curricular differences, teachers across school levels face convergent demands for instructional innovation, student support and collaboration with families and communities. Future theoretical work on excellence teacher development in China may therefore benefit from more explicitly integrating "shared cross-stage competencies" into existing stage-specific competency frameworks.

5.3 Practical implications for programme design and policy

Several practical implications for the design and implementation of excellence teacher professional development programmes can be drawn from these findings.

The strong and unique predictive power of content relevance suggests that programme planners should prioritise systematic needs assessment and co-design processes. Rather than relying solely on expert-driven topic selection, training agendas should be informed by teachers' expressed concerns, school development priorities and emerging policy requirements (e.g. curriculum standards, student wellbeing, school–family–community collaboration). Embedding authentic case studies, classroom artefacts and school-based problems into the training content may further enhance perceived relevance.

Although lecturer expertise, interactive engagement and time allocation did not emerge as significant unique predictors in the regression model, their strong bivariate correlations with overall satisfaction indicate that they still matter for how teachers experience professional development. Ensuring that trainers combine academic knowledge with rich school-based experience, structuring sessions to allow for active participation, peer discussion and collaborative problem-solving, and balancing the intensity and pacing of activities are therefore still crucial design considerations.

The lack of significant differences between primary and secondary school teachers provides tentative support for designing "core modules" that address shared professional competencies across school stages, supplemented by targeted elective sessions that speak to stage- or subject-specific needs. From a policy perspective, this aligns with ongoing efforts to build more coherent, vertically integrated systems of teacher professional development, where excellence is defined not only in terms of subject expertise but also in terms of holistic student development, collaboration and responsiveness to educational reform.

5.4 Limitations and directions for future research

Several limitations of this study should be acknowledged.The sample size was modest, particularly for primary school teachers, which reduces statistical power and may limit the generalisability of the findings. The non-significant stage differences, as well as the borderline

effect of interactive engagement in the regression model, should therefore be interpreted with caution. Future studies with larger and more balanced samples across school stages and subjects are needed to verify the robustness of these patterns.

The study relied exclusively on self-report questionnaire data collected immediately after the training. Such data are susceptible to social desirability and "halo" effects, and they capture teachers' perceptions rather than actual changes in instructional practice or student outcomes. Longitudinal research designs that combine teacher surveys with classroom observations, artefact analysis or student feedback would provide a more comprehensive picture of programme impact.

The present research focused on a single excellence teacher training programme in one municipal context. Programme content, implementation conditions and local policy environments may differ across regions, which constrains the extent to which the results can be generalised. Comparative studies across different types of professional development—such as school-based learning communities, lesson study or online–offline blended formats—would help clarify whether the centrality of content relevance and the cross-stage convergence observed here are context-specific or more universal.

Despite these limitations, the study contributes to the growing body of work on excellence teacher professional development in China by providing empirical evidence on how teachers perceive programme quality and by identifying content relevance as a key driver of overall satisfaction. In particular, the findings highlight that excellence-oriented PD programmes are most likely to be valued when they offer content that is tightly connected to teachers' real challenges in implementing curriculum reforms, supporting students' physical and mental health and coordinating school–family–community efforts around student wellbeing. These insights can inform both the refinement of existing programmes and the design of future initiatives aimed at supporting teachers' professional growth in school physical education and health education, as well as in broader competence-oriented teaching, within an era of rapid educational change.

Generative AI and AI-Assisted Technologies Statement:
During the preparation of this work, ChatGPT (OpenAI) was used to assist in translating the manuscript from Chinese to English and for language polishing. After using this tool, the author carefully reviewed and edited the content as needed and assumes full responsibility for the substantive content of the publication.

Conflict of Interest Statement:
The author declares no conflict of interest.

References

Xianghan, X., Linghui, H., & Zheng, L. (2025). Interdisciplinary Thematic Instruction in Physical Education and Health Curriculum: Practical Requirements and Design Strategies. Quality in Sport, 40, 59556-59556.

Metelski, A. (2019). Physical activity in Poland and the European Union. Quality in Sport, 5(3), 7-21.

Huang, J., Wang, S., Zhu, J., Cai, J., & Jiang, B. (2024). Research on Teaching Idea Innovation of University Physical Education Teachers. Quality in Sport, 31, 56003-56003.

Gao, P., & Jing, G. (2025). Research on Digital Transformation and the Construction of Physical Education Teacher Resource Ecosystem. Quality in Sport, 45, 66483-66483.

Kashuba, A. (2017). The problem of training of future teachers of physical education for organization of competitive activities in the field of professional education. Pedagogy and Psychology of Sport, 3(1), 16-23.

Dong, X., Sha, S., & Dong, X. (2025). Designing Structured Curricula to Enhance Teaching Competencies: Integrating Teaching Methods Course Clusters in Pre-service Teacher Education. Pedagogy and Psychology of Sport, 23, 61660-61660.

Hevko, I. V. (2020). Preparation of future geography teachers for professional activity on a basis competence approach. Journal of Education, Health and Sport, 10(3), 252–264. https://doi.org/10.12775/JEHS.2020.10.03.027

Central Committee of the Communist Party of China & State Council. (2019). China's Education Modernization 2035. Beijing, China: Xinhua Publishing House.

Ministry of Education of the People's Republic of China. (2022). Physical Education and Health Curriculum Standards for Compulsory Education (2022 edition). Beijing, China: People's Education Press.

General Office of the CPC Central Committee & General Office of the State Council. (2020). Opinions on comprehensively strengthening and improving school physical education in the new era. Beijing, China.

Muszkieta Radosław, Oleśniewicz Piotr, Cieślicka Mirosława, Napierała Marek. Monitoring and assessment activities and indications of empathic behavior of the examined teachers during physical education lessons. Journal of Education, Health and Sport. 2015;5(12):678-685.

Hevko Ihor. Recent scientific findings on the professional formation of technology teacher. Journal of Education, Health and Sport. 2016;6(11):850-857. eISSN 2391-8306. DOI http://dx.doi.org/10.5281/zenodo.583618

Hevko, I. V. (2019). Teacher professionalism is the basis of quality student preparation. https://doi.org/10.5281/zenodo.3457528

Desimone, L. M. (2009). Improving Impact Studies of Teachers' Professional Development: Toward Better Conceptualizations and Measures. Educational Researcher, 38(3), 181-199.

https://doi.org/10.3102/0013189X08331140 (Original work published 2009)

Tsisaruk, I. V. (2020). Analysis of the results of experimental research of professional development of the future teacher of labor education and technologies in technologies. Journal of Education, Health and Sport, 10(3), 295–301. https://doi.org/10.12775/JEHS.2020.10.03.031

Darling-Hammond, L., Hyler, M. E., Gardner, M. (2017). Effective Teacher Professional Development. Palo Alto, CA: Learning Policy Institute. https://doi.org/10.54300/122.311.