

Guidelines for Developing Teacher Competencies in teaching in the 21st Century in Zhejiang Higher Vocational Colleges, People's Republic of China

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Abstract

This study aimed to 1) develop guidelines for developing 21st-century teaching competencies among Zhejiang higher vocational colleges (HVCs) and 2) evaluate the guidelines for developing teacher competencies in teaching in the 21st century in Zhejiang HVCs. The researcher formulated the guidelines based on the investigation of the current situation of teachers' teaching competencies. The research was divided into two stages. Stage 1: It was identified that the 21st-century teaching competencies of teachers in HVCs in Zhejiang Province comprised six aspects. Ranked from highest to lowest in terms of competency level, they were research competency, student management competency, professional ethics, social service competency, self-development competency, and teaching management competency. Stage 1 involved investigating current competency levels and qualitative data collection through semi-structured interviews with award-winning teachers and administrative managers from model HVCs. The second stage focused on the expert evaluation of the developed guidelines, utilizing a 5-level rating scale questionnaire to assess their feasibility and utility among a sample of experienced deans.

It was found that: 1. In Zhejiang Province of the People's Republic of China, teacher competencies in teaching in the 21st century in HVCs were at a relatively high level in general and in all aspects on average. 2. To improve teacher competencies in teaching in the 21st century in Zhejiang HVCs, it was necessary to improve teaching competency from six aspects: 1) research, 2) student management, 3) professional ethics, 4) social service, 5) self-development, and 6)

learning and teaching. 3. Evaluation results showed that experts conducted a high-level assessment of the feasibility and utility of the 21st century teaching competency guidelines for college teachers.

The study successfully produced a validated set of development guidelines tailored to the specific needs of Zhejiang HVC teachers. These findings provide a critical roadmap for vocational teacher training policy in China, emphasize targeted development in key areas, and ensure educators are equipped for the demands of the 21st century.

Keywords: 21st century Teaching Competencies; Guidelines for HVCs Teachers

Introduction

The Vocational Education Law of the People's Republic of China emphasizes the significance of higher vocational education and strives to establish a higher vocational education system that suits the national conditions and characteristics of the People's Republic of China and integrates pre-service and in-service education and training. This system aims to ensure that primary, secondary and higher vocational and technical education and training are interconnected and develop in coordination with general education and adult education. Higher vocational education is a very important component of the higher education system of the People's Republic of China. It can cultivate technical talents and integrate educational technology with the latest developments of industries and enterprises to the greatest extent (Ministry of Education, 2019).

In 2010, the "National Medium and Long-Term Education Reform and Development Plan Outline (2010–2020)" pointed out that "teaching should be the primary content of teacher assessment, and the quality and teaching reform project for undergraduate education in higher education institutions should be fully implemented." Strengthening the professionalization of the teaching staff is a major undertaking in education, with teachers as its foundation. "Good teachers lead to good education." It can be seen that the development of teachers' teaching competency is a task that the government attaches great importance to in developing the modern education system. In 2011, the Ministry of Education of the People's Republic of China included "Enhancing Teachers' Teaching Competency" in the "Undergraduate Teaching Quality and Teaching Reform Project of Higher Education Institutions". This was an emphasis on the development of teaching abilities of college teachers at the national education management policy level (Kai, 2012).

In 2012, the establishment of national-level Teacher Teaching Development Demonstration Centers was launched, marking the country's emphasis on teacher teaching

development at the national level. Since then, the construction of provincial- and college-level Teacher Teaching Development Centers has been initiated in colleges across the country, setting off a wave of teacher teaching development in higher education institutions nationwide. “Teacher Competencies in Teaching” has become the core theme of faculty development in colleges. Chan et al. (2014) pointed out that conducting evaluations of teachers’ teaching abilities is a necessary step and an important means to understand the current situation of Teacher Competencies in Teaching, to promote their improvement, and to advance educational and teaching reform.

In 2021, the Ministry of Education of the People’s Republic of China issued the official document Guiding Opinions on Deepening the Reform of the Professional Title System for college Teachers, which emphasized: “Highlight educational and teaching ability and performance. Colleges should regard the conscientious fulfillment of educational and teaching responsibilities as a basic requirement in evaluating teachers. Teaching quality evaluation should be strengthened, with classroom teaching quality as the primary criterion. Teaching workload should be strictly assessed, teaching assessment requirements should be reinforced, and the weight of teaching performance and teaching research in evaluations should be increased.” (Ministry of Education, 2021)

This reinforced the importance of Teacher Competencies in Teaching in the professional title evaluation system of higher education institutions. In the economically developed Zhejiang Province, the attention paid to the teaching competency of vocational education teachers is not as high as that to the construction of the teaching staff of ordinary undergraduate teachers. Therefore, there is a lack of a provincial-level guideline for the teaching competency of higher vocational teachers. Considering the demands of 21st-century educational development, strategies to enhance Teacher Competencies in Teaching in the digital era are needed. However, research outcomes on the evaluation of college teachers’ teaching ability remain limited, and no universally applicable guideline for the development of Teacher Competencies in Teaching has yet been established. This constitutes the historical and contextual background of the present study.

Lu (2022) pointed out that, taking as an example HVCs—which currently represent the largest proportion of higher education institutions in China and are the focus of construction and development for the foreseeable future—research on Teacher Competencies in Teaching holds significant meaning and value. The findings of this study can enrich the theoretical framework of the structure and evaluation of Teacher Competencies in Teaching in Zhejiang’s HVCs, provide theoretical guidance and practical references for teachers in conducting teaching competency

evaluations, and offer important insights for educational administrative departments in formulating and adjusting relevant policies. Furthermore, it can also serve as a valuable reference for peers engaged in the practice of developing Teacher Competencies in Teaching.

This study aims to identify a 21st-century guideline for developing Teacher Competencies in Teaching that is suitable for Zhejiang HVCs, particularly to support the building of strong faculty teams in Zhejiang higher vocational institutions. From the perspective of national development, the goal of building China into a world-leading education powerhouse inevitably requires finding ways to enhance Teacher Competencies in Teaching, improve teaching efficiency, and increase learning outcomes. Only by strengthening their teaching competencies, transforming traditional educational concepts, and adopting new teaching methods can teachers meet the demands of modern education and provide a solid guarantee for building a strong education nation.

Research Objectives

1. To put forward guidelines for developing teacher competencies in teaching in the 21st century in Zhejiang higher vocational colleges.
2. To evaluate the guideline for developing teacher competencies in teaching in the 21st century in Zhejiang higher vocational colleges.

Literature Review

Historical Foundations of teachers' competencies in teaching

Western researchers were the first to explore the significant influence of teaching competency on teaching utility. The author Samuel and Adekunle (2019) mentioned: Training in teaching methods provided in the form of courses helps to enhance teachers' teaching competency. In-service training on teaching skills and principles helps cultivate teachers' professional teaching abilities and has a positive promoting effect on their subsequent teaching practice activities.

At the beginning of the 20th century, the British psychologist C. E. Spearman (Bartholomew, 1995) proposed the "two-factor" theory of competency structure. This theory is the most classic and influential theory of ability structure. Many subsequent theories about ability have developed on the basis of the "two-factor" theory.

Since the beginning of the 21st century, Chinese educational scholars have proposed that teachers' teaching competency must be used to guide practice. Therefore, the reflection on the

reality and development of education, that is, the idea that “education should face modernization, the world and the future”, has become an important guiding ideology for exploring teaching competency. Hayhoe et al. (2012) mentioned: a renowned Chinese educator, proposed that the comprehensive behavioral characteristics exhibited by teachers in the process of smoothly engaging in teaching activities and achieving teaching goals are the 21st century teaching competency of teachers.

International Practices on teachers’ competencies in teaching

As the world's leading educational power, the United States launched a series of educational reform waves as early as the last century, laying a solid foundation for the prosperity of education in the 21st century. Simpson and Smith (1993) believes that the standards that a good teacher should possess are the breadth and depth of knowledge, planning ability, knowledge imparting and communication skills, teaching evaluation and feedback ability, and personality traits.

As an old capitalist power, the United Kingdom has comprehensively implemented the reform of the teacher 21st century teaching competency evaluation system and established the Royal College of Inspectors as the main body for evaluation. In the middle of the 20th century, Japan formulated 13 evaluation indicators for teachers’ teaching competency, including their work efficiency, work attitude, sense of responsibility, and teaching skills. Based on the evaluation results, the promotion, demotion, and salary increase of teachers were determined. Katsuno (2016) argue that Japan established the “New Teacher Evaluation System”, linking the evaluation of teachers’ teaching competency with their overall personal performance, to stimulate teachers’ motivation for self-development and self-improvement. However, these teacher development guidelines lack situational specificity in the higher vocational environment in Zhejiang and are difficult to be effective.

The IBSTPI Teacher Competency Standards formulated by The International Board of Standards for Training, Performance and Instruction in 2004. In 2021, the fourth version of the content was updated. Sanguinetti (2025) argue that the established training framework includes four performance areas, 19 capabilities, 150 performance statements, and three core concepts for teachers’ teaching work: online learning, blended classroom, and core teaching content.

The teachers teaching in 21st-Century Digital Competency

Entering the 21st century, it is a brand-new era. The teaching competency of college teachers should be supplemented with new connotations. For instance, Alduais and Deng (2019)

proposed the dual-quality teacher quality: possessing profound digital literacy, adapting to the needs of digital transformation to cultivate talents, and being able to master artificial intelligence technology and manage the integration of technology services and education.

In the face of multiple reforms in educational technology, 21st century teachers' teaching competency should be capable of handling complex teaching situations. Elmahdi et al. (2015) believes that a teacher's teaching competency is a comprehensive psychological quality, not a mechanical superposition of one or more seed abilities, but a synthetic body composed of multiple teaching forces, teaching advantages and key elements that can operate simultaneously.

Simpson and Smith (1993) literature usually defines teaching competency and explores the elements that constitute 21st century teaching competency. These elements may involve the ability to impart knowledge, organize teaching, handle interpersonal relationships, etc. Some studies may also explore elements such as teachers' flexibility, questioning skills, experimental attitude, and subject knowledge. However, the existing literature lacks strategies for cultivating and enhancing teachers' teaching competency, rarely studies specific details such as teacher training, professional development, and reflective practice, and does not conduct detailed assessment work on the development of competency. The above content is the new aspect of teaching competency that teachers in Zhejiang must develop in the 21st century.

Research Methodology

To produce the guidelines, researcher first conducted a current situation survey on the teaching competencies level of teachers in Zhejiang HVCs.

Population and Sample

The study was conducted in two phases. In Phase One, purposive sampling was used to select 10 award-winning teachers (teaching skills competitions) and 10 administrators for semi-structured interviews from Zhejiang HVCs. In Phase two, purposive sampling was also applied to recruit 30 experienced deans and associate deans of teaching, who were invited to evaluate the feasibility and utility of the proposed 21st-Century Teacher Competencies in Teaching Development Guidelines.

Research Instruments

In Phase one, the instruments included: In Phase one, (1) From the questionnaires used in the current situation survey, the top three with the highest scores were selected to form 18 interview questions, and (2) an Item-Objective Congruence (IOC) rating form to validate the

interview questions. A semi-structured interview form was developed to collect qualitative data for the formulation of the development guidelines. In Phase Two, a questionnaire using a five-pointscale was administered to assess the feasibility and Utility of the guidelines.

Data Collection

Data collection was conducted in two phases. Phase One: An Item-Objective Congruence (IOC) rating form was first distributed in person to five experts on Teacher Competencies in Teaching in Zhejiang HVCs, who were invited to evaluate each item of interview questions. Subsequently, a questionnaire on the development of teacher competencies in teaching was distributed online via the Tencent Meeting platform. Purposive sampling was applied to recruit award-winning teachers (teaching skills competitions) and college administrators for semi-structured interviews, conducted online with each session lasting 60–90 minutes. A designed interview guide, consisting of both open-ended questions, was used to explore strategies for formulating the 21st-Century Teacher Competencies in Teaching Development Guidelines, the challenges encountered, and potential solutions. All responses were systematically transcribed and coded for analysis. Phase Two: Purposive sampling was again used to select 30 deans and associate deans of teaching from 18 HVCs. An online questionnaire was distributed to this group to evaluate the feasibility and utility of the proposed guidelines. To protect participants' privacy, all data were anonymized, and personal identifiers were removed prior to analysis. Participants were informed of the study's purpose and provided informed consent before participation. Data storage and processing complied with ethical standards to ensure confidentiality and security.

Data Analysis

Phase One: To develop the Teacher Competency Development Guidelines, a current situation survey was first conducted. Five experts reviewed the questionnaire using IOC (Item-Objective Congruence), and items with a mean score of 0.5 or higher were retained. Then, descriptive statistics (frequency, percentage, mean, SD) were used to analyze the data of Zhejiang higher vocational college teachers. Transcripts of the semi-structured interviews were subjected to content analysis to identify key elements necessary for the formulation of the 21st-Century Teacher Competencies in Teaching Development Guidelines.

Phase Two: Statistical analysis software was used to analyze the data obtained from the preliminary evaluation of the guidelines. Means and standard deviations were computed to assess the feasibility and utility of the proposed guidelines.

Research Results

The findings of the study can be summarized as follows:

1. The study found that the 21st-Century Teacher Competencies in Teaching Development Guidelines for HVCs in Zhejiang Province, People's Republic of China, comprise several key components. The guidelines include Explanatory Notes, providing the background and rationale for developing teacher competencies; Significance, emphasizing the importance of cultivating 21st-century Teacher Competencies in Teaching; Objectives, outlining the specific goals and target audience of the guidelines; Implementation Procedures, detailing the steps before and after the guideline's application; and Principles, representing the core values underlying the teacher competencies development process. Additionally, the guidelines contain Development Methods, which describe specific operational procedures, and a section on Responsible Parties, identifying the agencies or individuals responsible for executing each component.

The guidelines are further organized into six sections, each focusing on a critical aspect of developing Teacher Competencies in Teaching:

Section 1: Enhancing teachers' research competencies

Teachers are encouraged to strengthen independent analytical thinking through integrated governance, assessment, and reward systems, with research outputs incorporated into evaluation indicators and supported by transparent, innovation-oriented funding and industry cooperation.

Section 2: Strengthening teachers' student management competencies

Colleges should respect student diversity, provide tailored guidance, adopt varied strategies for underperforming students, and build trust to foster motivation and effective learning plans.

Section 3: Assisting teachers in establishing professional ethics and moral norms

Colleges emphasize morality and integrity as primary evaluation criteria, promoting ongoing training in ethics, law, and academic conduct, encouraging fairness, self-discipline, and role-model behavior.

Section 4: Promoting teachers' engagement in social services

Administrators integrate cultural and vocational education, promote cultural research and activities, and strengthen social responsibility and employability through collaboration with local organizations.

Section 5: Supporting teachers' continuous learning

Lifelong learning is promoted via training, exchange programs, expert mentoring, and interdisciplinary teamwork, with mechanisms for collaboration, conflict resolution, and innovation.

Section 6: Facilitating teachers' class teaching work

Administrators implement holistic, student-centered plans, update curricula, promote inquiry-based methods, and coordinate career guidance, counseling, and curriculum reforms to enhance learning outcomes.

2. Evaluation of the 21st-Century Teacher Competencies in Teaching Development Guidelines for HVCs in Zhejiang Province

Thirty deans and associate deans of teaching from HVCs in Zhejiang Province participated in the evaluation of the 21st-Century Teacher Competencies in Teaching Development Guidelines. The results indicated that the manual demonstrated a high degree of feasibility and utility, as presented in the table below:

Table1 Results of evaluating the feasibility and utility of manual

No	Manual for 21st-Century Teacher	Feasibility			Utility		
	Competencies in Teaching	$\bar{X}$	SD.	Level	$\bar{X}$	SD.	Level
1	Part 1						
	– Objectives	4.80	0.65	highest	4.90	0.30	highest
	– Target Group	4.83	0.45	highest	4.86	0.43	highest
2	Part 2						
	– Concepts and Principles	4.86	0.43	highest	4.83	0.37	highest
3	Part 3						
	Section 1: Research Competencies	4.32	0.66	high	4.37	0.66	high
	Ability to write and publish research articles	4.31	0.64	high	4.33	0.69	high
	Independent thinking and research skills	4.37	0.71	high	4.33	0.70	high
	Capacity to secure research funding	4.38	0.62	high	4.45	0.60	high
4	Section 2: Student Management Competencies	4.36	0.63	High	4.46	0.61	High
	Respect for individual student differences	4.35	0.66	high	4.36	0.67	high
	Motivation of underperforming students	4.37	0.65	high	4.61	0.54	highest
	Guidance on effective learning methods	4.36	0.59	high	4.42	0.63	high
5	Section 3: Professional Ethics Competencies	4.42	0.60	high	4.33	0.68	high
	Practice in line with professional ethics	4.31	0.70	high	4.30	0.75	high
	Fair and standard-based student evaluation	4.58	0.47	highest	4.36	0.64	high
	Adherence to social ethics and role modeling	4.37	0.64	high	4.32	0.66	high

No	Manual for 21st-Century Teacher Competencies in Teaching	Feasibility			Utility		
		$\bar{X}$	SD.	Level	$\bar{X}$	SD.	Level
6	Section 4: Social Service Competencies	4.45	0.60	high	4.37	0.66	high
	Promotion of culture and social influence	4.53	0.47	highest	4.34	0.68	high
	Support for student employment	4.45	0.67	high	4.38	0.67	high
	Contribution to society through knowledge sharing	4.38	0.65	High	4.39	0.62	High
7	Section 5: Self-Development Competencies	4.33	0.70	high	4.35	0.68	high
	Use of AI in solving learning challenges	4.35	0.67	high	4.26	0.75	high
	Continuous improvement in teaching management	4.26	0.76	High	4.46	0.60	High
	Development through teamwork and communication	4.38	0.66	High	4.34	0.70	High
8	Section 6: Teaching Competencies	4.60	0.57	highest	4.54	0.67	highest
	Systematic organization of learning content	4.64	0.58	highest	4.50	0.69	highest
	Application of blended teaching (theory + practice)	4.58	0.58	Highest	4.53	0.70	Highest
	Design of effective teaching to stimulate students	4.59	0.56	Highest	4.60	0.63	Highest
Total average		4.48	0.61	high	4.47	0.62	high

As shown in Table 1, the 21st-Century Teacher Competencies in Teaching Development Guidelines for HVCs in Zhejiang Province demonstrate overall high levels of feasibility and utility. Among the six specific dimensions of teaching competencies, the feasibility of teacher competencies in teaching was the highest ($\bar{X} = 4.60$), and its utility was also the highest ($\bar{X} = 4.54$), both reaching peak levels. The overall feasibility of the six dimensions, ranked from highest to lowest, is teaching competencies, social service competencies, professional ethics, student management competencies, self-development competencies, research competencies. While the overall utility ranking from highest to lowest is teaching competencies, social service competencies, self-development competencies, professional ethics, research competencies and student management competencies.

At the item level, the highest-scoring item for feasibility is 6.1 Systematic Organization of Learning Content, whereas the highest for utility is 2.2 Motivation of Underperforming Students. The second-highest feasibility score corresponds to 3.2 Fair and Standard-Based Student Evaluation, and the second-highest utility score is 6.3 Design of Effective Teaching to Stimulate Students. The lowest feasibility score is 4.2 Support for Student Employment, and the lowest utility score is 4.1 Promotion of Culture and Social Influence.

Discussion

Based on the data analysis of the 21st-Century Teacher Competencies in Teaching Development Guidelines for HVCs in Zhejiang Province, People's Republic of China, the findings are as follows:

1. Current situation of 21st-Century Teacher Competencies in Zhejiang HVCs

Analysis of the current situation indicates that teachers generally possess strong research and academic writing skills and produce high-quality research outcomes. They contribute to the development of social productivity through their colleges, effectively manage student learning progress, and uphold professional ethics. However, teachers still face challenges in designing instructional processes using educational principles and in leveraging artificial intelligence to enhance teaching practices. Additionally, some college administrators provide insufficient training for improving teachers' instructional skills, and the organization of work meetings has limited effectiveness in enhancing teacher-student interactions. These findings are consistent with results reported in existing literature.

2. Guidelines for developing teacher competencies in teaching in the 21st century in Zhejiang HVCs

The development of Teacher Competencies in Teaching in HVCs in Zhejiang Province requires teachers to enhance their competencies in six key areas: (1) research competency, (2) student management competency, (3) professional ethics, (4) social service competency, (5) self-development competency, and (6) teaching competency. The study findings indicate that, during China's current phase of higher education elite development, teacher competencies in HVCs have a significant impact on the sustainable development of the institutions. Teachers can cultivate high professional ethics by proactively learning theoretical knowledge, regulating their daily teaching practices, and maintaining a positive professional image, thereby demonstrating loyalty to the educational profession and respect for their work. Teachers are able to efficiently organize classroom instruction and practical training activities, help students acquire essential skills, employ a combination of theoretical and practical teaching methods, foster students' professional qualities, and ensure orderly classroom operations. In addition, teachers continuously participate in large-scale seminars, enhance their research capabilities through team communication and collaboration, and contribute unique research outcomes that elevate the social impact of their institutions. In the context of lifelong learning in the 21st century, higher vocational teachers must maintain an ongoing commitment to learning and actively contribute to the modernization of socialist society.

Considering the practical and vocational characteristics of 21st-century higher vocational education and the demand for technically skilled talent driven by Zhejiang's industrial upgrading, the development of teacher competencies in teaching has become an increasingly critical issue in higher education.

3.The evaluation of the Teacher Competencies in Teaching Development Guidelines revealed that teachers in Zhejiang HVCs exhibit the highest level of research competency. When comparing the internal structure of teaching competencies, student management competency ranked second highest on average, whereas classroom teaching competency was the lowest. Esteve–Mon et al. (2020) think university teachers must be competent enough to meet the new challenges of today's digital society. This digital competence, both technical and pedagogical, allows teachers to enrich their teaching, develop the digital competence of their students and continue to develop professionally.

Similarly, this is consistent with Bakar et al. (2024) optimizing the blended teaching reform capabilities of physical education teachers, concluded that teachers must break the temporal and spatial constraints of traditional teaching. By designing classroom structures around students' interests and strengths and thoroughly understanding the learners, teachers can effectively enhance their teaching competencies.

This is further supported by Gümüs (2022) and recent international research on teacher competencies over the past decade, which indicates that participation in social and volunteer service activities provides higher vocational teachers with valuable experiential learning opportunities, fostering the development of applied skills, resource integration abilities, and other practical competencies transferable to real-world contexts.

This project was limited by research time, with the sample size confined to one province. No more improvement suggestions were obtained during the interview stage.

New Knowledge from Research

Based on the data obtained from the research process, the development model of teaching competence for higher vocational teachers in the 21st century is shown in the following figure.

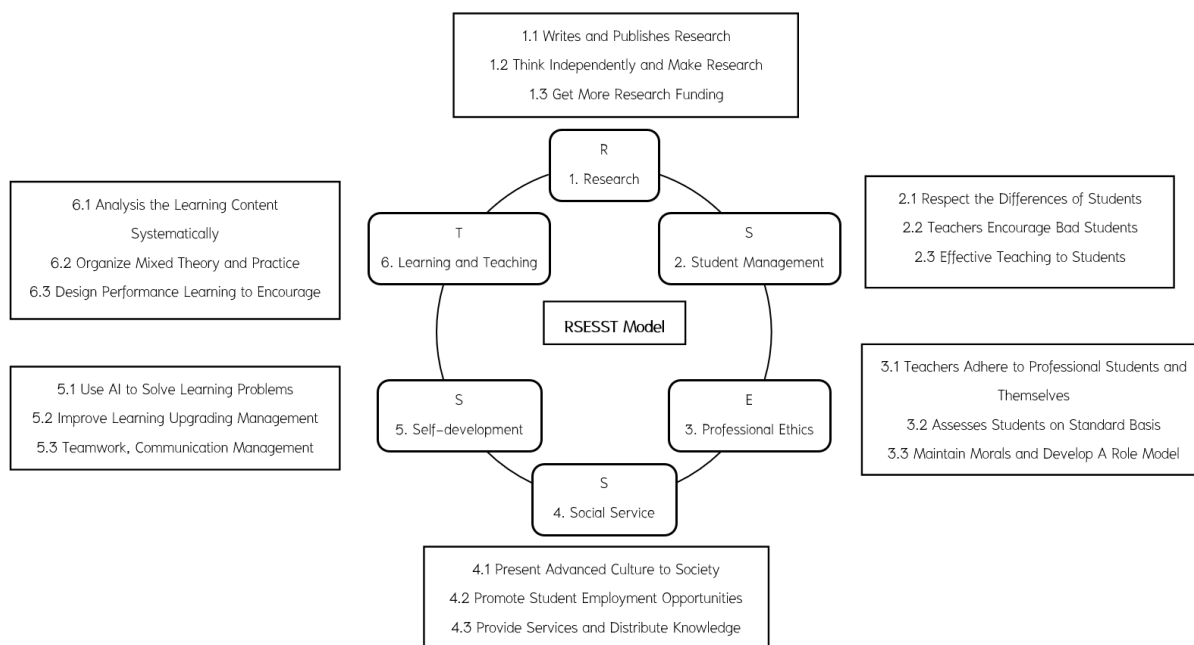


Figure 1 Teaching competency development model of this study

(Source: Constructed by the researchers)

The conceptual framework of this study is shown in Figure 1. According to the research framework, the innovation point of this study is to obtain a guideline for teachers in HVCs in Zhejiang to enhance their teaching competencies in the 21st century.

Conclusion

The 21st-Century Teacher Competencies in Teaching Development Guidelines and their accompanying handbook provide a practical framework for application within educational systems. The guidelines address the following key areas: (1) assisting institutions in securing adequate research funding to support teachers in publishing high-quality research articles; (2) ensuring teachers are competent in student management; (3) promoting adherence to professional ethics and disciplinary standards; (4) fostering collaboration between institutions and the community; (5) supporting teachers' ongoing professional learning; and (6) enhancing the quality of instructional work. Guided by the policies of the National Vocational Education Guidance Center of the Ministry of Education, this study supplements the theoretical framework of teacher competencies in

teaching for HVCs in Zhejiang Province, contributing to the existing literature. Unlike previous studies that primarily proposed strategies for improving teaching competencies, this research provides a structured set of guidelines tailored to the actual teaching practices of Zhejiang higher vocational college teachers, addressing both future challenges and current instructional difficulties.

The proposed development methods and designated responsible agencies offer guidance for establishing instructional strategies in Zhejiang HVCs and indicate directions for future educational research. By constructing a comprehensive, iterative, and systematic teaching handbook, the framework ensures that the work of both administrators and teachers aligns with the requirements of research, student management, professional ethics, social service, and other educational tasks. Future research will continue to examine the scientific validity of the guidelines in practice, collect user feedback, and conduct work meetings to develop improvement plans. In addition, the development of teaching competency guidelines across colleges and regions will continue, aiming to enhance the overall level of 21st-century teaching competencies in the People's Republic of China.

Suggestions

1. Implementation Suggestions

1.1 Enhancing Research Competency

The survey on the current status of teaching competencies among higher vocational college teachers in Zhejiang Province revealed that research competency ranks highest, indicating its central importance. To improve teacher competencies in teaching, priority should be given to enhancing research competency. Higher vocational teachers can strengthen their practical skills in writing research-based articles through methods such as self-directed learning and academic salons, including increasing the originality of research outputs, maintaining lifelong learning habits, and actively contributing to securing research funding for their institutions. College administrators can effectively motivate faculty teams through face-to-face mentoring, psychological counseling, and the development of new institutional policies, rewarding outstanding teachers who achieve significant research outcomes and supporting research teams in implementing innovative reforms. Collaboration between teachers and administrators is essential to achieve tangible improvements in research competency.

1.2 Comprehensive Competency Development

The study identified six key aspects of teaching competency for higher vocational teachers in Zhejiang Province: (1) professional ethics, (2) learning and teaching, (3) self-development competency, (4) research competency, (5) student management competency, and (6) social service competency. These six areas require practical and feasible approaches for further enhancement.

1.3 Feasibility and Utility of the Guidelines

The study evaluated the feasibility and utility of the Teacher Competencies in Teaching Development Manual for Zhejiang higher vocational college teachers. Results indicate that the handbook is highly practical, and teachers can implement it effectively to improve both the level and quality of their teaching competencies.

2. Recommendations for Suggestions

In relation to the development of teaching competencies among higher vocational college teachers in Zhejiang Province and the broader advancement of other vocational institutions, the researchers propose the following recommendations:

2.1 Strengthen Training in Teaching and Classroom Management

It is recommended that institutions make training programs—including closed workshops, group explorations, team competitions, thesis supervision, and public speaking—to effectively enhance teachers' classroom instructional competencies.

2.2 Conduct Multidisciplinary Competency Research

Support multidisciplinary research on higher vocational teachers' teaching competencies, including investigations into barriers in scientific research, and tailor competency development strategies according to the specific context and needs of each institution.

2.3 Collect and Share Case Studies of Effective Teaching

Gather and analyze case studies of exemplary teaching practices to identify effective management strategies and approaches. Share these findings with higher vocational college administrators through seminars, workshops, or academic journals to provide practical guidance and support implementation.

References

- Alduais, A., & Deng, M. (2019). The effect of the national plan (2010–2020) on the development of special education in China: Evidence from before–after design at a 7–year interval. *Education Sciences*, 9(2), 95. <https://doi.org/10.3390/educsci9020095>
- Bakar, E. E. A., Abd Halim, N. D., & Hanid, M. F. A. (2024). Integrating blended learning in programming course: A comprehensive systematic review. *Quantum Journal of Social Sciences and Humanities*, 5(SI1), 64–79. <https://doi.org/10.55197/qjssh.v5iSI1.566>
- Bartholomew, D. J. (1995). Spearman and the origin and development of factor analysis. *British Journal of Mathematical and Statistical Psychology*, 48(2), 211–220. <https://doi.org/10.1111/j.2044-8317.1995.tb01060.x>
- Chan, C. K., Luk, L. Y., & Zeng, M. (2014). Teachers' perceptions of student evaluations of teaching. *Educational Research and Evaluation*, 20(4), 275–289. <https://doi.org/10.1080/13803611.2014.932698>
- Elmahdi, I., Muammar, O., & Al-Hattami, A. (2015). The effect of a core competencies training program on faculty members' teaching performance. *International Journal of Pedagogical Innovations*, 3(2), 88–95.
- Esteve–Mon, F. M., Llopis–Nebot, M. Á., & Adell–Segura, J. (2020). Digital teaching competence of university teachers: A systematic review of the literature. *IEEE Revista Iberoamericana de Tecnologías del Aprendizaje*, 15(4), 399–406. <https://doi.org/10.1109/RITA.2020.3033225>
- Gümüş, A. (2022). Twenty–first–century teacher competencies and trends in teacher training. In Y. Alpaydın (Ed.), *Teacher education in the 21st century: Emerging skills for a changing world* (pp. 243–267). IGI Global.
- Hayhoe, R., Li, J., Lin, J., & Zha, Q. (2012). *Portraits of 21st century Chinese universities: In the move to mass higher education* (Vol. 30). Springer Science & Business Media.
- Kai, J. (2012). Improving quality: Core mission for developing higher education in the National Medium–and Long–Term Educational Reform and Development Guideline (2010–2020). *Chinese Education & Society*, 45(3), 73–88. <https://doi.org/10.2753/CED1061-1932450306>
- Katsuno, M. (2016). *Teacher evaluation policies and practices in Japan: How performativity works in schools*. Routledge. <https://doi.org/10.4324/9781315723013>

- Lu, S. (2022). Construction of “dual-qualified” teachers in higher vocational colleges from the perspective of the integration of industry and education. In *2nd International Conference on Education: Current Issues and Digital Technologies (ICECIDT 2022)* (pp. 640–651). Atlantis Press. https://doi.org/10.2991/978-2-494069-02-2_70
- Ministry of Education. (2019a). *Teacher education law*. Retrieved August 27, 2009, from http://www.moe.gov.cn/jyb_sjzl/sjzl_zcfg/zcfg_jyfl/tnull_1314.html
- Ministry of Education. (2021b). *Notice on issuing several opinions on comprehensively improving the quality of higher education*. Retrieved March 16, 2021, from <http://www.aftvc.com/news/show.angzhi/668797.html>
- Samuel, A. O., & Adekunle, A. O. (2019). Teacher preparation and teaching professional competence among Federal Colleges of Education graduates in Southwest Nigeria. *Journal of Education and Human Development*, 8(1), 93–105. <https://doi.org/10.15640/jehd.v8n1a11>
- Sanguinetti, A. (2025). *Frequency of IBSTPI competencies: Instructional design practitioners’ perspectives on competency use* (Doctoral dissertation). The Florida State University.
- Simpson, R. D., & Smith, K. S. (1993). Validating teaching competencies for graduate teaching assistants: A national study using the Delphi method. *Innovative Higher Education*, 18(2), 133–146. <https://doi.org/10.1007/BF01191891>