

# Instructional leadership practices, teaching effectiveness, and efficiency among Chinese higher vocational teacher

Chen, Fu Lan ✉

Graduate School, Lyceum of the Philippines University – Batangas, Philippines  
Guangdong Vocational Academy of Art, China

Received: 20 July 2024  
Available Online: 15 August 2024

Revised: 13 August 2024  
DOI: 10.5861/ijrse.2024.24716

Accepted: 14 August 2024

ISSN: 2243-7703  
Online ISSN: 2243-7711

OPEN ACCESS



## Abstract

This study determined the relationships among instructional leadership practices, teaching effectiveness, and efficiency among Chinese higher vocational teachers to propose an enhanced faculty development program. It utilized a descriptive-correlational research design. The researcher randomly selected a sample of 425 higher education teachers with different academic qualifications and teaching experiences and utilized a questionnaire to comprehensively understand their instructional leadership practices, as well as the impact of these practices on teaching effectiveness and efficiency. The findings revealed that vocational teachers agree exhibiting instructional leadership practices as to planning and organization, support and guidance, and assessment and feedback. They also agree that they are effective in teaching when it comes to knowledge acquisition and application, and establishing effective teaching and learning environment and interaction; however, they disagree on being effective in terms of promoting positive attitude and motivation for learning. Furthermore, they agree that they are efficient in the classroom, and in providing after-school instructional support, as well as in effectively utilizing multimedia and other technological tools to improve teaching quality. There is a significant difference on instructional support and guidance and on attitude and motivation for learning when grouped according to sex, and on organization and planning in terms of highest education. In addition, there are no significant correlations among instructional leadership practices, teaching effectiveness, and efficiency, which means that a change in the variable of instructional leadership practices is not linked to and cannot predict a change in teaching effectiveness and efficiency. This descriptive research offered valuable insights into the instructional leadership practices among higher vocational teachers, enhancing understanding of the factors influencing teaching effectiveness and efficiency. It has been recommended for teachers to participate actively in training and development on further enhancing their teaching effectiveness in promoting a more positive attitude and motivation for learning.

**Keywords:** instructional leadership practices, teaching effectiveness, teaching efficiency, higher vocational teachers

## **Instructional leadership practices, teaching effectiveness, and efficiency among Chinese higher vocational teacher**

### **1. Introduction**

Higher vocational education plays a crucial role in China's education system, and it has cultivated a large number of high-quality skilled talents for the society in response to the needs of the country's social and economic development. However, with the deepening of educational reform and the improvement of social requirements for the quality of higher vocational education, the instructional leadership practices of higher vocational teachers has gradually become a key factor in improving the quality of teaching and learning. Instructional leadership practices refer to the leadership skills and behaviors demonstrated by teachers in their teaching activities. Han (2021) showed that this includes curriculum design, selection of teaching methods, classroom management, student motivation, and the creation of a teaching environment. In Chinese higher vocational education, instructional leadership practices emphasize that teachers should not only impart knowledge, but also guide students to learn, think and innovate actively. An excellent instructional leader is able to flexibly adjust teaching strategies according to students' characteristics and needs, stimulate students' interest and motivation in learning, and also establish a positive classroom atmosphere that promotes interaction and cooperation between teachers and students.

Chen (2019) showed that instructional leadership not only includes the teaching of course content, but also involves the integration of teaching resources, the cultivation of students' abilities, and the creation of the teaching environment, among other aspects. However, at present, there are some problems and challenges in the practice of instructional leadership among Chinese higher vocational teachers, such as the ambiguity of role perception, the single teaching method, and the lack of student interaction and participation, which directly or indirectly affect the effectiveness and efficiency of teaching. Teaching effectiveness is one of the most important indicators of teaching quality, which focuses on the impact of teaching activities on students. Jiang (2019) pointed out that this includes the degree of students' mastery of knowledge, improvement of skills, change of attitudes, and application of learning outcomes. In China's higher vocational education, the effectiveness of teaching is directly related to students' future career development and social recognition. Therefore, teachers need to ensure that students can truly master what they have learned and apply it in their practical work through effective teaching methods and means. At the same time, teaching effectiveness is also one of the important bases for assessing teachers' teaching quality.

Meanwhile, teaching efficiency is concerned with the ratio of input to output in terms of time, energy and resources for teaching activities. In higher vocational education, due to the diversity and complexity of course content, teachers need to complete their teaching tasks efficiently while ensuring that students can fully understand and master what they have learned. Li (2019) claimed that methods to improve teaching efficiency include optimizing course design, adopting advanced teaching techniques and tools, rationally arranging teaching time, and making full use of teaching resources. An efficient teaching process not only reduces teachers' burden, but also improves students' learning efficiency, thus achieving better teaching results.

At present, senior teachers have problems in teaching leadership, such as fuzzy role perception, single teaching method, etc., which directly affect the effectiveness of teaching. Teaching effectiveness is an important indicator of teaching quality, focusing on students' knowledge mastery, skill improvement and other aspects. Despite teachers' efforts in teaching, the lack of effective instructional leadership practices, such as irrational curriculum design and outdated teaching methods, may make teaching inefficient and result in a waste of resources. This mismatch between instructional leadership and instructional effectiveness is also a notable gap at present. Wang (2020) asserted that ideally, efficient teaching should lead to good instructional outcomes. However, in actual teaching, the effect of various factors, such as low student engagement and inappropriate use

of teaching resources, may lead to unsatisfactory teaching results even though the teaching efficiency appears to be good. This disconnect between effectiveness and efficiency is another gap that needs attention.

Since higher education plays an important role in social and economic development, by studying and improving teachers' instructional leadership practices, vocational students can be more effectively trained so that their knowledge and skills are more in line with the needs of society, thus improving the overall quality of higher vocational education. Furthermore, the results of the study may provide strong data support and theoretical basis for higher vocational education administrators to help them formulate more scientific and reasonable education policies and teaching management measures. Through in-depth investigation on instructional leadership practices, and how they affect teaching effectiveness and efficiency, it may promote the conceptual updating and methodological innovation of higher vocational education to meet the educational needs of the new era. Hence, by determining the relationships among instructional leadership practices, teaching effectiveness and efficiency, the study may provide higher education teachers with specific directions for instructional improvement, optimize their teaching behaviors, and thus improve overall teaching standards.

**Objectives of the study** - This study aimed to determine the relationships among instructional leadership practices, teaching effectiveness, and efficiency among Chinese higher vocational teachers and propose a enhanced faculty development program. Specifically, the study sought to describe the profile of the respondents in terms of sex, age, highest level of education, and length of teaching; identify instructional leadership practices in terms of instructional planning and organization, instructional support and guidance, and instructional evaluation and feedback, determine teaching effectiveness in terms of knowledge acquisition and application, learning attitudes and motivation, and teaching environment and interaction; assess teaching efficiency as to time management and utilization, resource optimization and allocation, achievement and effectiveness of objectives; test for significant differences in responses when grouped according to profile variables; test the significant relationships among instructional leadership practices, instructional effectiveness and efficiency; and propose a faculty development program to enhance instructional leadership practices, teaching effectiveness, and efficiency among Chinese higher vocational teachers.

## 2. Methods

**Research Design** - This study employed a descriptive research method on the instructional leadership practices, teaching effectiveness, and efficiency of higher vocational teachers in China Through an in-depth analysis of the collected data, a comprehensive overview of the sampled teachers' instructional leadership practices was obtained, alongside determining their precise influence on their teaching effectiveness and efficiency. The researcher believed that descriptive research method is the most appropriate design for this research as it is capable of assessing well the three variables of the study on the results of the data collected.

**Participants** - For the selection of the sample, the researcher made use of the random sampling technique. The study was participated in by Chinese higher vocational teachers from three universities in China. Among the 15,000 teachers of different age groups, a calculated sample of 375 using Raosoft of 5% margin of error and 95% confidence level was achieved; however, with the consent of the panel of examiners, 425 higher vocational teachers were involved in this study to reflect better the situation in similar schools. Several criteria were considered prior to selection; firstly, the respondents must higher vocational teachers, are currently teaching in one of the three selected universities, have worked in the school for a period of at least 1 year, and based on the ethical considerations, are legible to be a part of this research which will be indicated through signing of the informed consent form.

**Instrument** - This research utilized an adapted questionnaire to comprehensively understand instructional leadership practices of vocational teachers, as well as determine the impact of those practices on teaching effectiveness and efficiency. The questionnaire encompassed various facets of instructional leadership practices and quantitatively assessed teaching effectiveness and efficiency. Data were collected through validated rating

scales and questionnaires were distributed through Question Star software. Each teacher was asked to complete a four-part questionnaire. The first section is on personal information including sex, age, highest education, and length of service. The second section is on instructional leadership practices, ranging from Instructional Planning and Organization, Instructional Support and Guidance, Instructional Assessment and Feedback, which was adapted from the Instructional Leadership Practices Survey. Assessment and Feedback, adapted from Multidimensional Questionnaire on Instructional Leadership Practices. The third part is on teaching effectiveness, which is a multidimensional questionnaire from Knowledge Acquisition and Application, Attitude and Motivation for Learning, Teaching and Learning Environment and Interaction, adapted from: Instructional Leadership Practices. Interaction, adapted from: Liu, Xiu-Mei. (2023). A study on the teaching effectiveness of output-oriented method applied to high school English reading and subsequent writing. The fourth part is on teacher efficiency, from Efficiency in the classroom, After-school instructional support, Management of teaching resources and environment, which was adapted from: Teacher Questionnaire on Classroom Efficiency in Elementary School Mathematics Classrooms.

**Table 1***Reliability Test Results*

| Indicators  | Cronbach Alpha | Remarks   |
|---|----------------|-----------|
| Instructional Planning and Organization           | 0.952          | Excellent |
| Instructional Support and Guidance                | 0.958          | Excellent |
| Instructional Assessment and Feedback             | 0.961          | Excellent |
| Knowledge Acquisition and Application             | 0.966          | Excellent |
| Attitude and Motivation for Learning              | 0.948          | Excellent |
| Teaching and Learning Environment and Interaction | 0.951          | Excellent |
| Time Management and Utilization                   | 0.964          | Excellent |
| Resource optimization and allocation              | 0.946          | Excellent |
| Achievement and Effectiveness of Objectives       | 0.951          | Excellent |

This set of indicators assessed key aspects of instructional planning and organization, teaching effectiveness, and efficiency including instructional planning and organization, instructional support and guidance, instructional assessment and feedback, knowledge acquisition and application, learning attitudes and motivation, teaching and learning environment and interaction, time management and utilization, optimization and allocation of resources, and goal attainment and effectiveness. The Cronbach's alpha coefficient for each indicator was higher than 0.9, indicating a high degree of internal consistency and reliability of the assessment tool.

**Data Gathering Procedure** - The adapted questionnaires were validated by experts before distribution through Question Star platform among higher vocational teachers. Permission to conduct the study from three vocational universities was secured from authorities. Teacher-participants in the study were informed of the nature and objectives of the research and asked for their informed consent. Translations in Chinese of the items in the questionnaire were put to ensure getting valid results. It took three weeks collecting their responses on the questionnaire. The responses were tabulated and coded using MS Excel spreadsheets, which was sent to the statistician for data analysis. Results were interpreted and a proposed faculty development program has been designed based on the major finding of the study.

**Data Analysis** - The data were counted, tabulated and interpreted using appropriate statistical tool for data analysis. Frequency, percentage distributions, weighted mean, and ranking were used to describe the demographic profile of the respondents, and assess the main variables of the study and their subdomains. Variables were assessed using the four-point Likert scales on agreement and disagreement. In addition, all data were processed using PASW version 26 statistical software in order to further interpret the results of the study using alpha levels.

**Ethical Considerations** - Ensuring ethical conduct in research was paramount to upholding the integrity of the study and respecting the rights of participants. Besides, applying for the permit to conduct the study from the University Ethics Review Committee Office obtaining informed consent from all respondents was the first step

in maintaining ethical standards. The researchers ensured that participants were fully aware of the purpose of the study, what their involvement would entail, and any potential risks or benefits. Furthermore, to safeguard the privacy of participants, stringent measures were implemented. Personal information collected from respondents was kept strictly confidential, with access limited only to the research team. Any identifiable data were anonymized or pseudonymized to prevent any individual from being personally identifiable in the study results. Moreover, the research team took precautions to secure the storage and transmission of research data to prevent unauthorized access or breaches. In addition to obtaining consent and protecting privacy, the researchers adhered to ethical guidelines throughout the data collection process. This included maintaining transparency about the study objectives and methodology, ensuring voluntary participation, and providing avenues for participants to withdraw from the study at any point without consequences. Ethical considerations were also integrated into the analysis and dissemination of findings to ensure that the dignity and rights of participants were upheld at all stages of the research process.

### 3. Results and discussion

**Table 2**

*Percentage Distribution of the Respondents Profile*

| Sex                                   | Frequency | Percentage % |
|---------------------------------------|-----------|--------------|
| Male                                  | 220       | 51.8         |
| Female                                | 205       | 48.2         |
| <b>Age</b>                            |           |              |
| 21-30 years old                       | 16        | 3.8          |
| 31-40 years old                       | 190       | 44.7         |
| 41-50 years old                       | 214       | 50.4         |
| More than 50                          | 5         | 1.2          |
| <b>Highest educational attainment</b> |           |              |
| Bachelor's degree                     | 1         | .2           |
| Master's degree                       | 208       | 48.9         |
| Doctorate degree                      | 216       | 50.8         |
| <b>Length of service</b>              |           |              |
| 5 years and below                     | 210       | 49.4         |
| 6-10 years                            | 205       | 48.2         |
| 11-15years                            | 7         | 1.6          |
| 16-20 years                           | 3         | .7           |
| above 20 years                        | 55        | 12.9         |

Table 2 presents the percentage distribution of the respondents' profile based on sex, age, highest educational attainment, and length of service. According to sex, it shows that 51.8% of the respondents are males while 48.2% of them are females. This shows a balanced representation of male and female teachers who participated in answering the survey questions, although there is a slightly higher representation of males than females.

**Table 3**

*Summary Table on Instructional Leadership Practices*

| Indicators                              | Weighted Mean | Verbal Interpretation | Rank |
|---|---------------|-----------------------|------|
| Instructional Planning and Organization | 3.01          | Agree                 | 1.5  |
| Instructional Support and Guidance      | 2.52          | Agree                 | 3    |
| Instructional Assessment and Feedback   | 3.01          | Agree                 | 1.5  |
| Composite Mean                          | 2.85          | Agree                 |      |

*Legend: 3.50 – 4.00 = Strongly Agree; 2.50 – 3.49 = Agree; 1.50 – 2.49 = Disagree; 1.00 - 1.49 = Strongly Disagree*

Table 3 shows the teachers' views on the instructional leadership practices based on the evaluated dimensions. The highest ranked dimension with a mean of 3.01 indicates that the respondents agreed to instructional planning and organization, and instructional assessment and feedback. This suggests that the teachers practice a higher instructional leadership practices when it comes to organizational planning, organization, assessment, and feedback. It indicates the teachers' high level of skill in clearly communicating

instructional objectives, planning the time and pace of instruction, organizing instructional content with consideration to students' learning interests, creation of order and a good learning environment, ability to adjust the teaching plan flexibly, paying attention to the integration and utilization of teaching resources to enrich teaching methods, ability to explain knowledge, design challenging attractive classrooms, and pay attention to the assignment feedback to promote students' learning. While instructional support and guidance is the least assessed indicator, it also shows that the teachers agree, suggesting a positive result on the teachers' ability to pay attention to students' emotional states, emphasize the development of students' innovating thinking, and focus on interaction and communication with students.

**Table 4***Summary Table on Teaching Effectiveness*

| Indicators  | WM   | VI       | Rank |
|---|------|----------|------|
| Knowledge Acquisition and Application             | 2.54 | Agree    | 1    |
| Attitude and Motivation for Learning              | 2.47 | Disagree | 3    |
| Teaching and Learning Environment and Interaction | 2.53 | Agree    | 2    |
| Composite Mean                                    | 2.52 | Agree    |      |

Table 4 shows the teachers' views on the teaching effectiveness based on the evaluated dimensions. The effectiveness of the teachers were evaluated based on the knowledge acquisition and application, attitude and motivation for learning, and teaching and learning environment and interaction. The agreeing range (2.53-2.54) signals reasonably high level of teaching effectiveness. Specifically, knowledge acquisition and application ranks highest (level=2.54). This indicates that the respondents agreed to effective teaching when it comes to knowledge acquisition and application. However, attitude and motivation for learning ranks the lowest score for teaching effectiveness (2.47), highlighting the need for improvement on the attitude and motivation for learning of the teachers.

**Table 5***Summary Table on Teacher efficiency*

| Indicators                                       | WM   | VI    | Rank |
|--|------|-------|------|
| Efficiency in the classroom                      | 2.54 | Agree | 1.5  |
| After-school instructional support               | 2.54 | Agree | 1.5  |
| Management of teaching resources and environment | 2.51 | Agree | 3    |
| Composite Mean                                   | 2.53 | Agree |      |

Table 5 compiles the assessment of teacher efficiency across three dimensions of efficiency in the classroom, after-school instructional support, and management of teaching resources and environment. The composite means range from 2.51 to 2.54, indicates that overall, respondents have reasonably high to high perceptions of their own teaching efficiency across the parameters tied to positive teaching efficiency and learning outcomes. Among the dimensions, efficiency in the classroom and after-school instructional support is rated highest (2.54), followed by management of teaching resources and environment (2.51). This reveals that teachers view themselves as most effective when it comes to provision of after-school materials, communicating to students and making information easily accessible after school, delivering lessons that are closely aligned to the course syllables, and effectively utilizing multimedia and other technological tools to improve teaching quality. To summarize, teaching efficiency is one of the important indicators of education quality. In higher vocational education, Wang (2020) believed that attention should be paid to the utilization of teaching time, student participation and the achievement of teaching objectives. Teaching efficiency can be improved by strengthening the construction of teaching staff, optimizing curriculum design, improving teaching methods and means, strengthening practical teaching links, establishing good teacher-student relationship, improving the teaching evaluation system and other ways and methods. This will ensure that students can master more professional knowledge and skills in a limited time and lay a solid foundation for their future career development.

Table 6 presents the comparison of responses on Instructional Leadership Practices when grouped according to profile. It presents the comparison of the teachers' instructional leadership practices when grouped according

to their sex, age, highest educational attainment, and length of service; and across the dimensions of instructional planning and organization, instructional support and guidance, and insutrcitonal assessment and feedback.

**Table 6**

*Difference in Responses on Instructional Leadership Practices When Grouped According to Profile*

| Sex                                     | f-value | p-value | Interpretation  |
|---|---------|---------|-----------------|
| Instructional Planning and Organization | 20851.5 | 0.177   | Not Significant |
| Instructional Support and Guidance      | 19314   | 0.010   | Significant     |
| Instructional Assessment and Feedback   | 22077   | 0.707   | Not Significant |
| <b>Age</b>                              |         |         |                 |
| Instructional Planning and Organization | 3.205   | 0.361   | Not Significant |
| Instructional Support and Guidance      | 2.856   | 0.414   | Not Significant |
| Instructional Assessment and Feedback   | 1.28    | 0.734   | Not Significant |
| <b>Highest educational Attainment</b>   |         |         |                 |
| Instructional Planning and Organization | 11.479  | 0.003   | Significant     |
| Instructional Support and Guidance      | 2.865   | 0.239   | Not Significant |
| Instructional Assessment and Feedback   | 3.088   | 0.214   | Not Significant |
| <b>Length of Service</b>                |         |         |                 |
| Instructional Planning and Organization | 5.15    | 0.161   | Not Significant |
| Instructional Support and Guidance      | 3.771   | 0.287   | Not Significant |
| Instructional Assessment and Feedback   | 0.768   | 0.857   | Not Significant |

*Legend: Significant at p-value < 0.05*

A key insight is that there is a significant difference on instructional support and guidance when grouped according to sex ( $p=0.010$ ). This suggests that male teachers perceive instructional support and guidance to be more effective in delivering effective leadership practices. The pattern indicates potential gaps in how leadership practices are exhibited or practiced across male and female teachers. Instricutional planning and organization and instructional assessment and feedback show no significant differences based on sex. Similarly, all three dimensions received no significant difference when compare with other profile groups such as age, and length of service. However, a significant difference was realized on instructional planning and organization when grouped according to highest educational attainment ( $p=0.003$ ). This also highlights that the teachers with doctorate degrees have better assessment than others, indicating that doctorate degree graduates believes more on the effectiveness of instructional planning and organization. The mixed results provide useful pointers for instructional leadership practices focus areas.

Additionally, the absence of any statistically meaningful variance across the numerous length of service domains implies that existing instructional leadership practices programs adequately cater to all teachers regardless of their length of service in the school. However, the comparatively lower absolute ratings warrant continued fortification of leadership practices towards enriching instructional planning and organization, support and guidance, and assessment and feedback. Also, it is essential to explore potentially neglected niche areas.

Existing literatures highlight that female principals may enhance the possibility of good instructional leadership practices, which can improve student results. Teaching experience is also an important factor to consider when selecting a school leader. The outcomes of the study by Wang (2022) highlights the importance of instructional knowledge and expertise developed over time. School leadership candidates who were focused on instructional work in classrooms and had held instructional roles within the school for many years (e.g., grade-level coordinators, pedagogical coordinators) appeared to be more likely to become active leaders in teaching and learning. Furthermore, the current qualitative findings indicate that school leaders of both genders should actively promote positive interpersonal ties with teachers.

Table 7 reveals the comparison of responses on teaching effectiveness when grouped according to profile. It presents the comparison of the teachers' teaching effectiveness when grouped according to their sex, age, highest educational attainment, and length of service; and across the dimensions of knowledge acquisition and application, attitude and motivation for learning, and teaching and learning environment and interaction. A key insight is that there is a significant difference on attitude and motivation for learning when grouped according to

sex ( $p=0.010$ ).

**Table 7**

*Difference in Responses on Teaching Effectiveness When Grouped According to Profile*

| Sex   | f-value | p-value | Interpretation  |
|---|---------|---------|-----------------|
| Knowledge Acquisition and Application             | 20851.5 | 0.177   | Not Significant |
| Attitude and Motivation for Learning              | 19314   | 0.010   | Significant     |
| Teaching and Learning Environment and Interaction | 22077   | 0.707   | Not Significant |
| <b>Age</b>  |         |         |                 |
| Knowledge Acquisition and Application             | 1.884   | 0.597   | Not Significant |
| Attitude and Motivation for Learning              | 0.805   | 0.848   | Not Significant |
| Teaching and Learning Environment and Interaction | 1.067   | 0.785   | Not Significant |
| <b>Highest educational Attainment</b>             |         |         |                 |
| Knowledge Acquisition and Application             | 2.102   | 0.350   | Not Significant |
| Attitude and Motivation for Learning              | 5.088   | 0.079   | Not Significant |
| Teaching and Learning Environment and Interaction | 4.4     | 0.111   | Not Significant |
| <b>Length of Service</b>                          |         |         |                 |
| Knowledge Acquisition and Application             | 6.497   | 0.090   | Not Significant |
| Attitude and Motivation for Learning              | 1.894   | 0.595   | Not Significant |
| Teaching and Learning Environment and Interaction | 0.86    | 0.835   | Not Significant |

*Legend: Significant at  $p$ -value  $< 0.05$*

This suggests that male teachers perceive teaching to be highly effective for students' attitude and motivation more than their female counterparts. The pattern indicates potential gaps in how the existing teaching practices are exhibited or practiced among male and female teachers towards the improvement of students' attitude and learning motivation. Knowledge and Acquisition and Teaching and Learning Environment and Interaction show no significant differences based on sex. Similarly, all three dimensions received no significant difference when compared with other profile groups such as age, highest educational attainment, and length of service. The varied results provide useful pointers for instructional leadership practices focus areas. Additionally, the absence of any statistically meaningful gap or variance across the numerous length of service domains implies that existing teaching practices adequately cater to all students based on the teachers regardless of their length of service in the school. However, the comparatively lower absolute ratings warrant continued fortification of existing teaching strategies towards an effective knowledge and acquisition and application, improved learning attitude and motivation, and a more conducive teaching and learning environment for interaction.

**Table 8**

*Difference in Responses on Teacher Efficacy When Grouped According to Profile*

| Sex  | f-value | p-value | Interpretation  |
|--|---------|---------|-----------------|
| Efficiency in the classroom                      | 20851.5 | 0.177   | Not Significant |
| After-school instructional support               | 19314   | 0.010   | Significant     |
| Management of teaching resources and environment | 22077   | 0.707   | Not Significant |
| <b>Age</b>                                       |         |         |                 |
| Efficiency in the classroom                      | 3.964   | 0.265   | Not Significant |
| After-school instructional support               | 6.756   | 0.080   | Not Significant |
| Management of teaching resources and environment | 15.971  | 0.001   | Not Significant |
| <b>Highest educational Attainment</b>            |         |         |                 |
| Efficiency in the classroom                      | 1.649   | 0.439   | Not Significant |
| After-school instructional support               | 3.901   | 0.142   | Not Significant |
| Management of teaching resources and environment | 0.071   | 0.965   | Not Significant |
| <b>Length of Service</b>                         |         |         |                 |
| Efficiency in the classroom                      | 3.357   | 0.34    | Not Significant |
| After-school instructional support               | 0.742   | 0.863   | Not Significant |
| Management of teaching resources and environment | 3.919   | 0.270   | Not Significant |

*Legend: Significant at  $p$ -value  $< 0.05$*

Table 8 illustrates the comparison of responses on Teacher Efficacy when grouped according to profile. It was observed that there was significant difference on After-school instructional support when grouped according



to sex ( $P=0.010$ ) because the obtained p-values were less than the alpha level. This means that the responses differ statistically and based on the test conducted, it was found out that male have better assessment than others. By registering a higher mean score more than the female teachers, it shows that the male teachers relatively concur to a higher efficiency of teaching in the classroom, after-school instructional support, and management of teaching resources and environment. In the other profile demographics such as age, highest educational attainment, and length of service, no significant difference was found on the efficiency of teaching in classroom, after-school support, and management of teaching resources. This shows a similar assessment with no varied gaps between teachers from these groups, which further suggests that the teachers believe in efficiency of existing teaching practices, although the mean scores recorded shows that an improvement is needed in areas such as management of teaching resources and environment, classroom efficiency, and after-school instructional support.

**Table 9**

*Relationship between Instructional Leadership Practices and Teaching Effectiveness*

| Teaching Management and Support                   | r-value | p-value | Interpretation     |
|---|---------|---------|--------------------|
| Knowledge Acquisition and Application             | .372**  | 0.000   | Highly Significant |
| Attitude and Motivation for Learning              | .356**  | 0.000   | Highly Significant |
| Teaching and Learning Environment and Interaction | .346**  | 0.000   | Highly Significant |
| Students Affair and Management                    |         |         |                    |
| Knowledge Acquisition and Application             | .698**  | 0.000   | Highly Significant |
| Attitude and Motivation for Learning              | .681**  | 0.000   | Highly Significant |
| Teaching and Learning Environment and Interaction | .694**  | 0.000   | Highly Significant |
| Administrative Service Quality                    |         |         |                    |
| Knowledge Acquisition and Application             | .759**  | 0.000   | Highly Significant |
| Attitude and Motivation for Learning              | .727**  | 0.000   | Highly Significant |
| Teaching and Learning Environment and Interaction | .670**  | 0.000   | Highly Significant |

*Legend: Significant at p-value < 0.01*

Table 9 presents the association between three dimensions of instructional leadership practices such as teaching management and support, students affair and management, and administrative service quality tied to the dimensions of teaching effectiveness such as knowledge acquisition and application, attitude and motivation for learning, and teaching and learning environment and interaction. The computed r-values indicates a strong direct correlation as the resulted p-values were less than the alpha level of 0.01. This means that there was significant relationship exists and implies that the better the Instructional Leadership Practices, the better the teaching effectiveness. This finding reveals how instructional leadership practices cuts across teaching effectiveness, indicating that other variables may serve as impacting factors that influences these variables. Overall, Table 17 compels investing equally in vertical excellence and horizontal networks to steer holistic growth towards understanding other influencing factors and variables that may impact these variables.

The study of Guo, (2022) showed that an efficient teaching process means that the teacher is able to impart more knowledge in a limited time and the students are able to grasp and understand what they have learnt more quickly. Time is an important factor in the assessment of teaching efficiency. To sum up, there are highly significant correlation among the study variables. Moreover, future research needs to analyze more deeply the relationship between teaching leadership behavior and teaching effectiveness and efficiency, explore the specific mechanism of action, and develop leadership strategies adapted to different teaching environments on this basis. This is of crucial importance for improving the quality of higher vocational education. Through customized instructional leadership strategies, not only can teaching effectiveness and efficiency be enhanced, but also the overall development of students and the overall performance of the education system can be promoted. Therefore, future research should focus on the collection and analysis of empirical data, validate the best practices of instructional leadership behaviors through scientific methods, and provide clearer and more operational guidelines for the field of higher education.

**Table 10***Relationship Between Instructional Leadership Practices and Teacher Efficacy*

| Teaching Management and Support                  | r-value | p-value | Interpretation     |
|--|---------|---------|--------------------|
| Efficiency in the classroom                      | .372**  | 0.000   | Highly Significant |
| After-school instructional support               | .327**  | 0.000   | Highly Significant |
| Management of teaching resources and environment | .404**  | 0.000   | Highly Significant |
| Students Affair and Management                   |         |         |                    |
| Efficiency in the classroom                      | .777**  | 0.000   | Highly Significant |
| After-school instructional support               | .770**  | 0.000   | Highly Significant |
| Management of teaching resources and environment | .857**  | 0.000   | Highly Significant |
| Administrative Service Quality                   |         |         |                    |
| Efficiency in the classroom                      | .819**  | 0.000   | Highly Significant |
| After-school instructional support               | .774**  | 0.000   | Highly Significant |
| Management of teaching resources and environment | .703**  | 0.000   | Highly Significant |

Legend: Significant at  $p$ -value < 0.01

Table 10 shows the correlation between Instructional Leadership Practices which cuts through the dimensions of teaching management and support, students' affair and management, and administrative service quality and Teacher Efficacy which cuts through dimensions of efficiency in the classroom, after-school instructional support, and management if teaching resources and environment. The computed r-values indicates a strong direct correlation and the resulted p-values are less than the alpha level. This means that there was significant relationship exists and implies that the better the Instructional Leadership Practices, the better is the teacher efficacy. Ba (2022) shows that teaching efficiency is particularly important in higher vocational education, which focuses on practicality and vocationally and requires students to master a large number of professional knowledge and skills within a limited time.

**Table 11***Relationship Between Teaching Effectiveness and Teacher Efficacy*

| Knowledge Acquisition and Application             | r-value | p-value | Interpretation     |
|---|---------|---------|--------------------|
| Efficiency in the classroom                       | .783**  | 0.000   | Highly Significant |
| After-school instructional support                | .759**  | 0.000   | Highly Significant |
| Management of teaching resources and environment  | .712**  | 0.000   | Highly Significant |
| Attitude and Motivation for Learning              |         |         |                    |
| Efficiency in the classroom                       | .744**  | 0.000   | Highly Significant |
| After-school instructional support                | .759**  | 0.000   | Highly Significant |
| Management of teaching resources and environment  | .712**  | 0.000   | Highly Significant |
| Teaching and Learning Environment and Interaction |         |         |                    |
| Efficiency in the classroom                       | .801**  | 0.000   | Highly Significant |
| After-school instructional support                | .780**  | 0.000   | Highly Significant |
| Management of teaching resources and environment  | .722**  | 0.000   | Highly Significant |

Legend: Significant at  $p$ -value < 0.01

Table 11 shows the association between Teaching Effectiveness which cuts through the dimensions of knowledge acquisition and application, attitude and motivation for learning, and teaching and learning environment and interaction, and Teacher Efficacy which cuts through efficiency in the classroom, after-school instructional support, and management of teaching resources and environment. The computed r-values indicates almost negligible correlation and the resulted p-values were greater than the alpha level. This means that there was no significant relationship exists. The absence of significant relationship indicates that a change in teacher effectiveness variables does not lead to a change in the teaching efficiency dimensions. The evaluation criteria of teaching effectiveness and efficiency are the core of this study and are indicators of the effectiveness of instructional leadership practices. Shi (2021) showed that to evaluate the effectiveness of teaching, the first thing to consider is the learning outcomes of students, including the degree of knowledge.

Teaching efficiency not only refers to the short time required for teaching activities, but also needs to consider how teachers can maximize the learning effect of students within the effective time. Therefore, the evaluation of teaching efficiency is not only a one-sided time count, but also needs to be combined with the changes in student learning outcomes, so as to more accurately reflect the economy and output ratio of the

teaching process. Xie (2019) showed that, in evaluating teaching efficiency, this study emphasizes the optimal analysis of time and resource utilization. Teaching efficiency is a crucial concept in the field of education, which is related to the effective use of teaching resources, the smooth realization of teaching objectives and the overall improvement of teaching quality.

To summarize, teaching efficiency is one of the important indicators of education quality. In higher vocational education, Wang (2020) believes that attention should be paid to the utilization of teaching time, student participation and the achievement of teaching objectives. Teaching efficiency can be improved by strengthening the construction of teaching staff, optimizing curriculum design, improving teaching methods and means, strengthening practical teaching links, establishing good teacher-student relationship, improving the teaching evaluation system and other ways and methods. This will ensure that students can master more professional knowledge and skills in a limited time and lay a solid foundation for their future career development.

#### 4. Conclusions and recommendations

More teacher participants are males who were 41-50 years old, with doctorate and have taught for fives and below. Vocational teachers agree exhibiting instructional leadership practices as to planning and organization, support and guidance, and assessment and feedback. Vocational teachers agree that they are effective in teaching when it comes to knowledge acquisition and application, and establishing effective teaching and learning environment and interaction; however, they disagree on being effective in terms of promoting positive attitude and motivation for learning. Vocational teachers agree that they are efficient in the classroom, and in providing after-school instructional support, as well as in effectively utilizing multimedia and other technological tools to improve teaching quality. There is a significant difference on instructional support and guidance and on attitude and motivation for learning when grouped according to sex, and on organization and planning in terms of highest education. There are a significant direct correlations among instructional leadership practices, teaching effectiveness, and efficiency, which means that a change in the variable of instructional leadership practices is directly linked to and can predict a change in teaching effectiveness and efficiency. An enhanced faculty development program for Chinese higher vocational teachers was proposed based on the findings of the study. Vocational colleges and universities may capitalize on further training and development of teachers towards enhancing their instructional leadership practices and teaching effectiveness and efficiency. Vocational teachers may participate actively in in-house training and development program on enhancing their teaching effectiveness and efficiency. School administrators and supervisors may evaluate the proposed enhanced faculty development program for implementation. Future researchers may consider diverse data collection which may also include the evaluation of the student-respondents on assessing instructional leadership behavior and teaching effectiveness and efficiency of teachers inn non-vocational colleges and universities.

#### 5. References

- Ba, Y. L. (2022). Practice and Reflection on Improving the Efficiency of Primary School Classroom Teaching under the Background of "Double Reduction". *Developing*, (3), 84-85.
- Chen, B. F. (2019). Hierarchical Development and Differential Promotion of Informationized Teaching Ability of Higher Vocational Teachers. *Higher Vocational Education*, 28(1), 45-49,96.  
<https://doi.org/10.3969/j.issn.1008-8415.2019.01.010>
- Guo, H. (2020). *An investigation on the teaching leadership behavior of principals in rural primary schools -- A case study of principals in Z City and L Autonomous Prefecture of Gansu Province* [Master's thesis, Northwest Normal University].
- Han, L. F. (2021). On the connotation, characteristics and cultivation of the principal's teaching leadership. *Journal of Teaching and Management*, (12), 13-17.
- Jiang, C. (2019). Exploration of the Promotion Effect of China's Standards of English Language Ability(CSE) on Higher Vocational English Teaching. *Vocational Technology*, 18(1), 65-68.

<https://doi.org/10.19552/j.cnki.issn1672-0601.2019.01.015>

- Li, Q. (2019). *Uncovering the Truth about Teaching: A New Teacher's Guide from an Evidence-based Perspective (Parts V & VI) Translation Practice Report* [Master's thesis, Sichuan International Studies University].
- Shi, Y. (2021). Practice and reflection on blended teaching reform of English in Higher Vocational Colleges. *The Chinese Journal of ICT in Education*, (4), 66-69.
- Wang, G. X. (2022). A preliminary study on the application of leaderless group discussion in the teaching of Preventive Medicine for clinical majors in higher vocational colleges. *Chinese Science and Technology Journal Database (Full Text) Education Science*, (5), 253-255.
- Wang, J. P. (2020). *The relationship between social support and teaching efficacy of home-based teachers: The mediating role of teachers' acceptance attitude* [Master's thesis, Anqing Normal University].
- Xie, L. N. (2019). Research on Integration of Chinese Excellent Traditional Culture into Teaching of Practical Writing in Higher Vocational Colleges. *Theory & Practice of Contemporary Education*, 11(5), 153-156. <https://doi.org/10.13582/j.cnki.1674-5884.2019.05.028>