

Incentive mechanisms, work engagement, and productivity of higher education teachers in China: Basis for faculty development plan

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Abstract

This paper determined the relationship among variables incentive mechanism, work engagement and work productivity of teachers in selected universities in China. Utilizing valid and reliable questionnaires as the main source of data, this study utilized the descriptive research method. There are 337 respondents who participated in the survey; they are employed in Jiangmen Polytechnic, Wuyi University, and Hunan Institute of Engineering in China during the period of this research. Female teachers outnumber their male counterparts while majority of the respondents are in the age bracket of 31-40 years old, and almost half of them have attained masteral degree and with only 1-5 years work experience. In the chosen locale of the study, the incentive mechanisms, and work engagement contribute to work productivity of the teachers. Regardless of profile variables age, sex, educational attainment and work experiences, their responses are the same as regards the three variables incentive mechanisms, work engagement, and work productivity. The more incentive mechanisms the institution offers to teachers, the better will be their work engagement. One important findings of this study is that work productivity is greatly enhanced by incentive mechanisms, and work engagement is also a measure to enhance productivity. Institutions of higher learning should continue to endeavor to design reasonable and effective salary reward system, regular teachers' training and professional development activities, as well as provide faculty with professional development resources, give teachers certain teaching autonomy, so as to engage faculty to work enthusiasm and dedication, improve teachers' productivity, and finally achieve the high quality development of higher education.

Keywords: higher education, incentive mechanisms, work engagement, work productivity, teacher development

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1. Introduction

At the core of the effectiveness of higher education institutions are the teachers-educators themselves, serving as the pillars of the system. Their work engagement and productivity profoundly impact students' learning outcomes, produce cutting-edge research, and create the healthy reputation of the institutions. With the continuous development of China's higher education landscape, the complexity faced by teachers in providing high-quality education is also constantly evolving. These challenges include increasing student diversity, constantly changing technological advancements, growing administrative demands, and a demand for rigorous research results. Improving teacher quality has become an urgent need for the development of higher education.

The incentive mechanism refers to a series of measures and policies within an organizational system aimed at stimulating individual or team behavior. These measures are intended to motivate employees to increase work input, enhance performance, and achieve organizational goals. In higher education, the incentive mechanism mainly refers to the various forms, standardization, and fixed measures or methods implemented by schools to enhance teacher development. Incentive measures generally include providing rewards, recognition, promotion opportunities, training and development, among other methods (Yang,2020). Incentive mechanisms have become a key factor in motivating and retaining teachers, enhancing their work participation, and ultimately driving productivity. To enhance the construction of the teaching workforce, establish a high-quality education system, and deliver education that satisfies the populace, educational leadership must ignite the enthusiasm and creativity of teachers. From the perspective of educational management, effective incentive measures should be tailored to meet the needs of teachers.(Zhou, et. al., 2020).

Work engagement, on the other hand, refers to a positive state in which employees deeply identify with and are highly involved in their work. It is characterized by enthusiasm, focus, and dedication, leading to high efficiency and performance in completing tasks assigned by the organization (Moreira, et. al., 2019). Teachers have a positive state of work engagement, which is considered a counterpoint to burnout . Contrary to those who are exhausted, dedicated employees have a dynamic and effective sense of connection in their work activities, believing that they can respond well to the needs of the job (Winowoda, 2018). Moreover, teacher dedication to their work can inspire students to engage more actively in their studies, leading to improved academic performance. Additionally, only by increasing their dedication to their work can teachers continuously enhance their professional competence and teaching abilities, thereby advancing the development of the entire education sector. Work productivity, meanwhile, refers to the output or results achieved per unit of time or resources. It is commonly used to measure the efficiency and effectiveness of economic, organizational, or individual efforts within a specific time frame (Plag, 2020).Work productivity is the most critical factor among organizational factors, requiring teachers to plan, execute, and supervise every educational activity. Moreover teachers' personalities and their own performance are believed to affect their work efficiency during school work. According to Ogochi, et. al., (2014), job satisfaction is a positive feeling in teaching that can promote teachers' moral standards and serve as a commitment and self responsibility to fulfill the necessary obligations of a teacher.

Efficient teachers can not only effectively plan the curriculum, make full use of the limited teaching resources, but also create a harmonious learning environment. Although the importance of incentives in influencing teacher behavior and performance has been well documented in the organizational psychology and management literature, a comprehensive exploration of their interconnections remains lacking. For instance, while Al-Jedaia, et. al., (2020) proposed a positive relationship between performance appraisal and employees' work input, the author did not examine the correlation between performance and productivity. Similarly, Sauermann (2023) highlighted the significance of the time frame and reward dimension of incentives on the work productivity of university teachers

and researchers. However, the researchers did not address the reciprocal relationship between incentives and work engagement. These studies are confined to singular examinations of incentives, work input, work productivity, or their relationships, without fully exploring the interconnectedness among the three.

Research on Chinese higher education teacher development programs aimed at enhancing work productivity is relatively scarce. Understanding these complex relationships is crucial for developing evidence-based policies and practices to enhance the performance of higher education institutions across China. This study analyzes the impact of these mechanisms on work engagement and productivity at both individual and institutional levels. This study investigated teachers' satisfaction with organizational incentive mechanisms, their investment in work, and their productivity evaluation, establishing correlations among these factors. Based on these findings, the study proposes a teaching personnel development plan suitable for the advancement of higher education in China.

Objectives of the Study - This study determined the incentive mechanism, work engagement, and productivity among higher education teachers in China. Specifically, this paper aimed to attain the following objectives: to assess the level of satisfaction of teachers in incentives being provided by the school in terms of salary and benefits, evaluation promotion, vocational training, growth support and cultural atmosphere; identify the work engagement of the identified teachers in terms of vigor, dedication, and absorption; determine the level of productivity of the identified Chinese higher education teachers in terms of personal productivity, academic productivity, curriculum and planning classroom management, and social productivity;; test the significant relationship among the three variables, and finally, based on the results of the study, proposed a faculty development plan for higher education teachers.

2. Methods

Research Design - The researcher employed a descriptive research method in this study. A certain number of teachers were randomly sampled from different universities as the study's participants. Data were collected through a survey questionnaire, which utilized a structured format including indicators such as teacher development incentives, levels of work engagement, and self-assessment of teacher productivity. The collected data underwent initial descriptive statistics analysis to examine the basic characteristics of teacher development incentives, work engagement, and work productivity. Subsequently, correlation analysis was conducted to explore the relationships among these three variables. Through this research design, a deeper understanding of the impact of university teacher development incentives on work engagement and work productivity was gained, aiming to provide theoretical support and policy recommendations for enhancing educational quality. This study used quantitative descriptive research method to determine the correlation among incentive mechanism, work engagement and work productivity of teachers in some universities in China.

Participants of Study - The subjects of this study are teachers in Chinese higher education institutions, and demographic profile of the respondents' sex, age, degree, and teaching experience were provided. The participants of this study did not include the school's educational administrators and administrative leaders. To ensure diversity in participant backgrounds and environments, questionnaires were distributed to 6700 teachers from three Chinese higher education institutions. A total of 337 valid responses were collected. Of them, 161 were males and 176 were female. In terms of education, 25.5% had a bachelor's degree or less, 48.1% had a master's degree and 26.4% had a doctor's degree.

Data Gathering Instruments - The researchers used the questionnaire from A survey on the current situation of teacher motivation in public junior middle schools in western China of Su, et. al., (2023). The work engagement questionnaire was obtained from Schaufeli, et. al., (2003). The work productivity questionnaire used the questionnaire from The interplay between work-life balance practices and productivity among public secondary school teachers by Ramos, et. al., (2020). The questionnaire used in this study has been rigorously validated in the fields of educational research and human resource management. The data captured are considered reliable and valid, making it suitable for assessing the development of Chinese higher education teachers. The questionnaire

was divided into 4 parts. The first part was about the profile of the respondents in terms of age, sex, educational background, teaching experience. The second part included a questionnaire of the teacher incentive mechanism with five dimensions and 20 items (Su, et. al., 2023). The 3rd part consisted of standard questionnaires regarding work engagement, specifically the Utrecht Work Engagement Scale with 17 items and 3 dimensions (Schaufeli, et. al., 2003). The 4th part was a questionnaire on teachers' productivity which was also adopted from the study of Ramos, et. al., (2020). The questionnaire consisted of five subscales and 25 items in total.

Data Gathering Procedures - Firstly, prior to distributing the questionnaires, permission was obtained from relevant departments at the three target higher education institutions. Participants were invited to complete the online questionnaire. The questionnaire explicitly stated that it was an anonymous research survey and that participation would not affect participants' performance evaluations or others' perceptions of them. Additionally, strict confidentiality of respondents' answers was assured, and participants were encouraged to respond truthfully based on their own experiences and feelings. Next, a reliability test was conducted on the initial 32 test items collected, and Cronbach's α coefficients were calculated for each dimension within the three scales. The test results show that each dimension Cronbach Alpha is greater than 0.7 for each variable, and the questionnaire has good internal consistency and can be used in large volume surveys. Finally, the questionnaire was distributed online to the teaching staff of three institutions of higher learning in China through the questionnaire star mini-program, and 337 valid responses were automatically collected, which formed the basis of the data of this study.

Data Analysis - The data gathered were tabulated and were analyzed according to the following statistical method or tools: Incentive mechanisms, work engagement and productivity were evaluated using weighted averages and ranking. Pearson Correlation Coefficient - These were used to analyst relationship between productivity and work engagement among higher education teachers in China and incentive mechanisms basis for teachers' development program. Furthermore, all data were handled with PASW version 26 statistical software to better understand the study's results using an alpha level of 0.05.

Ethical Considerations - Before participants answered the questionnaire, they were adequately informed about the purpose, content, and usage of the survey, and they volunteered to participate, maintaining the anonymity of the respondents and ensuring that their information would not be disclosed or used for other purposes. Additionally, researchers strictly adhered to ethical guidelines regarding data storage, processing, and reporting, ensuring that the data was not accessed or tampered with by unauthorized individuals. This study ensured the anonymity of research participants and the confidentiality of research data, safeguarding the identity of the selected interviewees.

3. Results and discussion

Table 1
Summary Table on Incentive Mechanism

Indicators	Weighted Mean	Verbal Interpretation	Rank
Salary and Benefits	2.96	Agree	5
Evaluation and Promotion	3.01	Agree	4
Vocational Training	3.08	Agree	1
Growth Support	3.06	Agree	2
Cultural Atmosphere	3.03	Agree	3
Composite Mean	3.03	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 1 shows a summary of the assessment of higher learning teachers in terms of salary and benefits, assessment and promotion, vocational training, organizational growth support and cultural atmosphere. The composite average of 3.03 reflects that teachers are generally very consistent with these five indicators. Considering the results of this study, the highest to lowest levels are as follows: the highest level was vocational training (3.08), growth support (3.06), cultural atmosphere (3.03), evaluation and promotion (3.01), and the lowest score was salary and benefits (2.96).

The School's growth support for teachers (3.06). Incentives for growth support motivate the development of university support knowledge and skills, such as training and workshops. The university provides opportunities to develop knowledge and competence and reasonably supports employee career planning. The resource elements of teacher development mainly include teaching information equipment, scientific research instruments, resource development projects, independent learning network resources, etc. The construction and application of these resources need to timely response to the demand of teachers, the regular training of professional development, to scientifically construct the university teachers' independent training and professional development support system, make university teachers continue to obtain new knowledge, broaden the professional field, improve their scientific and cultural literacy, the development of open, interactive teacher development center (Chen, et. al., 2018).

Cultural atmosphere of the school organization (3.03). Environmental incentive is the fair and reasonable humanistic care provided by universities to teachers, and the communication channels provided by schools are convenient for work. The school regularly organizes various activities to promote a good interpersonal relationship, and a good working environment makes employees more enthusiastic about their work. Zhang (2016) analyzed several dimensions of organizational factors of university teachers' career development, and the results showed that organizational atmosphere and academic freedom mainly affect teachers' social needs and self-value realization needs, and are the factors with the greatest influence on the satisfaction of teachers' career development. System of school evaluation and professional title promotion (3.01). This shows that the professional title promotion assessment system in colleges and universities is fair and reasonable. For college teachers, title is not only a measure of its professional ability and business level of an important symbol, and with personal salary, welfare, status, honor, etc, therefore, the title appraisal system set conditions is related to the vital interests of every teacher, every related policy changes will touch the sensitive nerve of many teachers (Fang, et. al., 2017).

The lowest assessment of income and benefits (2.96). This shows that Chinese university teachers have low satisfaction with salary and benefits. Salary and benefits are the basic post salary and subsidy for university teachers, which is the recognition of teachers' labor. A reasonable monthly benefits system including dietary allowance, physical examinations and paid leave is needed. Currall, et. al., (2005) and other scholars tested the influence of salary satisfaction on organizational performance with middle school teachers, and found that salary satisfaction was positively correlated with the performance of school districts and negatively with the turnover rate of teachers, and teachers' satisfaction with the labor union was positively correlated with salary satisfaction. University leaders should further clarify the school running philosophy and the objectives and tasks of teacher training, and formulate reasonable training plans according to the actual situation of the school. The training content and plan should be specific and clear, such as the training object, training content, financial support, mode, assessment standards, etc. While organizing teacher training, teachers should also be organized to go deep into enterprises to understand the needs of enterprises, so as to ensure that the knowledge taught can better meet the needs of enterprises in the future teaching links (Li, 2023).

Table 2 shows a summary of the three dimensions of teacher work engagement in vigor, dedication and absorption, according to this result, the average composite score of 3.03 shows that the comparative engagement of university teachers in teaching work, vigor (3.04) is slightly higher than the other two items, dedication (3.03) , absorption (3.03). This indicates that among the three dimensions of teacher engagement at work, their enthusiasm for their work is unquestionable.

Table 2
Summary Table on Work Engagement

Indicators	Weighted Mean	Verbal Interpretation	Rank
Vigor	3.04	Agree	1
Dedication	3.03	Agree	2.5
Absorption	3.03	Agree	2.5
Composite Mean	3.03	Agree	

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

Work engagement is composed of three dimensions: vigor, dedication and absorption. Vigor encompasses qualities such as energy, intelligence, determination, and sustained effort in the workplace. It represents a facet of work engagement characterized by high levels of energy and resilience. I also have a strong perseverance to the actual work, even in the face of difficulties also have a strong willpower to persist. Dedication is a sense of meaning that one gets from the work, the enthusiasm and pride in the specific work, and the motivation and challenge to the work. Absorption refers to a state of immersion in the work environment, characterized by intense focus on tasks to the extent that one loses track of time. People who focus on their work feel that the passage of time is invisible, and it is difficult to separate them from their work.

Work engagement is an important concern for leaders and managers, and they see it as an important factor affecting organizational effectiveness. Work engagement is defined as a positive, fulfilling, work-related mindset characterized by vitality, focus, and absorption. Employee engagement issues are the physical resources to which individuals make the most of their vigor, emotion, and emotion, as well as perform work related to the role. Therefore, employees are energetic, happy and effective to do their work (Xu and Thomas, 2011). Vigor has long been recognized as a positive effect in work. Feeling energetic means a combination of positive energy balance with pleasure or satisfaction, and people who feel nervous, anxious or angry may feel energetic; however, this feeling is accompanied by unpleasant and unpleasant. Although sensory pleasure is also a positive effect on work, it represents low intensity or arousal levels, while vigor represents a moderate level of arousal. (Peterson, et. al., 2004,)

In their study, Berry, et. al., (2008) explored the influence of work engagement on employee performance and turnover rate. Their findings indicated that work engagement positively influenced employee performance and served as a predictor of the turnover rate among employees. Gera, et. al., (2019) used EFA (exploratory factor analysis) to study B-school teacher engagement, and the total variance analysis showed that absorption was the most important for teacher participation, accounting for 25% of their cases, followed by dedication at 19% and vitality at 18%. The study confirmed three factors that affect employee engagement: vigor, dedication, and absorption. Fute, et. al., (2022) believes that during the COVID-19 phenomenon, the increased emphasis on teachers' work engagement highlights the spirit of self-sacrifice, reducing compassion fatigue. This heightened engagement benefits organizations, families, and students. In the study of work input, Douglas (2020) argued that when considering the three dimensions of work input—vitality, dedication, and absorption—the contribution of absorption was overshadowed by the importance of vitality and dedication. Essentially, Douglas believed that work input was not only about the quantity of work put in, but also about the quality and passion behind it, which could lead to more impactful outcomes.

Table 3 presents the respondents assessment on the five dimensions (personal productivity, academic productivity, curriculum planning and Instruction, classroom management productivity, social productivity) of teacher productivity. Among the items enumerated, curriculum planning and instruction can meet the needs of teachers got the highest mean score of 3.12. Curriculum planning and instruction include the development of teaching plans and designing teaching activities, which are the key factors to ensure the quality of teaching and students' learning effect. Teachers have the highest score in this dimension, indicating that teachers attach great importance to curriculum planning and teaching design.

Table 3
Summary Table on Work Productivity

Indicators	Weighted Mean	Verbal Interpretation	Rank
Personal Productivity	3.10	High	2
Academic Productivity	3.00	High	5
Curriculum Planning and Instruction	3.12	High	1
Classroom Management Productivity	3.06	High	3
Social Productivity	3.02	High	4
Composite Mean	3.06	High	

Legend: 3.50 – 4.00 = Very High; 2.50 – 3.49 = High; 1.50 – 2.49 = Low; 1.00 - 1.49 = Very Low

Personal Productivity(3.10). Teachers' personal productivity scores are slightly lower than curriculum

planning and instruction, but still at a high level. Personal productivity is crucial to improving teachers' work efficiency and personal growth. Classroom Management Productivity(3.06). Classroom management productivity scores were slightly lower than individual productivity, but still reached higher levels. This shows that teachers perform well in managing classroom order and student behavior, and can effectively create a good learning environment. Social Productivity (3.02). A slightly lower social productivity score than classroom management productivity may indicate that teachers' collaboration with colleagues, parents and communities, and interaction with other social resources need to be further strengthened. Academic Productivity(3.00) got the lowest score. Academic productivity includes teachers' academic research ability, publication of academic papers, academic contributions and so on. Academic productivity received the lowest rating, possibly implying that faculty need to strengthen further in academic research and subject development. The comprehensive average of 3.06 indicates that teachers believe they have high work productivity. They rate themselves highly in terms of curriculum planning and teaching evaluation, while acknowledging that their academic productivity still needs improvement. Teacher productivity refers to the level of effectiveness of teachers in adhering to schedules, curriculum planning, academic research, teaching methods, classroom management, student discipline, community values, and other aspects.

Ayeni, et. al., (2020) proposed that effective communication within the organization and dignified treatment of teachers by principals can enhance coordination and improve teacher productivity. Inconsistent communication appears to hinder the improvement of teacher productivity. Teachers with high productivity are not only the transmitters of knowledge, but also the guides of students' all-round development. Excellent teachers have achieved high-quality teaching results. Teachers' own professional quality, flexible teaching methods and perfect classroom management level can cultivate high-quality and all-round development students. This result is consistent with the quality management theory, which holds that service quality is positively correlated with the quality of service providers (Dahlgard-Park, et. al., 2018). Similarly, Maslow's "human motivation theory" confirms the current findings. According to Brown (2011), teachers obtaining relevant academic certificates demonstrate their completion of high-quality professional learning, enabling them to explore professional practice standards. Schools should provide convenient development pathways for teachers to enhance their practice, ultimately boosting teacher productivity. After conducting empirical research on the working environment of teachers in 2018, Edo, et. al., found that a sufficiently relaxed working environment such as sunshine and moderate temperature make teachers feel comfortable and relaxed both physically and mentally. The spacious office and classroom create opportunities for special learning activities, thereby reducing the risk of teacher distraction and improving teacher productivity.

Table 4 illustrates the relationship between Incentive Mechanism and Work Engagement. The calculated r-values demonstrate a moderate positive correlation, and the resulting p-values were below the alpha level, indicating a highly significant relationship. This suggests that as the quality of the incentive mechanism improves, there is a corresponding increase in work engagement among participants. This is consistent with the views of most scholars. For example, Dan, et. al., (2020) pointed out, incentive mechanisms have a positive effect on the work participation of employees in any organizational team at any time, and internal incentive effects are more effective than persistence. External incentives mainly refer to economic rewards, while internal incentives include organizational identification, growth support, and job promotion

Table 4
Relationship Between Incentive Mechanism and Work Engagement

Salary and Benefits	r-value	p-value	Interpretation
Vigor	.364**	0.000	Highly Significant
Dedication	.390**	0.000	Highly Significant
Absorption	.388**	0.000	Highly Significant
Evaluation and Promotion			
Vigor	.436**	0.000	Highly Significant
Dedication	.436**	0.000	Highly Significant
Absorption	.404**	0.000	Highly Significant

Vocational Training			
Vigor	.415**	0.000	Highly Significant
Dedication	.402**	0.000	Highly Significant
Absorption	.373**	0.000	Highly Significant
Growth Support			
Vigor	.423**	0.000	Highly Significant
Dedication	.344**	0.000	Highly Significant
Absorption	.346**	0.000	Highly Significant
Cultural Atmosphere			
Vigor	.412**	0.000	Highly Significant
Dedication	.456**	0.000	Highly Significant
Absorption	.400**	0.000	Highly Significant

Legend: Significant at p -value < 0.01

Internal motivational measures within the organization instill a strong sense of value, pride, and recognition of employees' efforts. This sensation fosters a deeper love for their work, driving them to engage in their tasks with heightened enthusiasm. Wang (2007) proposed that the work engagement of university teachers comes from the motivating factors that satisfy the leading needs. The degree of satisfaction of the leading needs is reflected in the teacher's work engagement through their psychological perception. The higher the degree of satisfaction, the stronger the teacher's enthusiasm and dedication to work. His research showed that career development has the greatest effect on motivating teachers, and the psychological benefits brought by teacher career development and achievement motivation are playing an increasingly important role in the process of teacher dedication and absorption. The satisfaction of salary and benefits directly affects the investment of teachers in their work. Improving treatment, especially increasing fairness in distribution, will bring greater motivation to teachers and increase their enthusiasm for work. The internal environment of humanized organizational system and fair competition, as well as the harmonious cultural and organizational atmosphere, enable teachers to maximize their work engagement. The motivational factors that affect teacher work engagement include not only material incentives, but also non-material incentives such as achievement, autonomy and recognition, training, career development opportunities, and high-quality leadership. The work environment should be conducive to employees, giving them a sense of belonging and allowing them to fully immerse themselves in their work, feeling that time passes quickly. The relationship between these incentive measures and the work engagement and performance of teachers is significant (Yamoah, 2013).

Table 5 shows the association between Incentive Mechanism and work productivity. The computed r -values suggest a moderate positive correlation, and the resulting p -values were below the alpha level. This indicates a significant relationship and suggests that as the incentive mechanism improves, work productivity also increases. The above table shows that the reasonable incentive mechanism of colleges and universities provides strong support for the development of teachers' productivity. Many scholars have also put forward the views consistent with this study. For example, Adu (2015) believed that the productivity of teachers depends on the opportunities provided by organizations for their personal growth, career development, achievement, responsibility, recognition, rewards, and participation in training. Through research, it has been found that organizations in the field of education must recognize the individual needs and incentive systems of teachers, all of which are the main internal driving forces for improving teacher productivity.

Table 5
Relationship Between Incentive Mechanism and Work Productivity

Salary and Benefits	r-value	p-value	Interpretation
Personal Productivity	.356**	0.000	Highly Significant
Academic Productivity	.366**	0.000	Highly Significant
Curriculum Planning and Instruction	.361**	0.000	Highly Significant
Classroom Management Productivity	.327**	0.000	Highly Significant
Social Productivity	.322**	0.000	Highly Significant

Evaluation and Promotion			
Personal Productivity	.394**	0.000	Highly Significant
Academic Productivity	.357**	0.000	Highly Significant
Curriculum Planning and Instruction	.380**	0.000	Highly Significant
Classroom Management Productivity	.378**	0.000	Highly Significant
Social Productivity	.425**	0.000	Highly Significant
Vocational Training			
Personal Productivity	.414**	0.000	Highly Significant
Academic Productivity	.466**	0.000	Highly Significant
Curriculum Planning and Instruction	.368**	0.000	Highly Significant
Classroom Management Productivity	.379**	0.000	Highly Significant
Social Productivity	.465**	0.000	Highly Significant
Growth Support			
Personal Productivity	.335**	0.000	Highly Significant
Academic Productivity	.394**	0.000	Highly Significant
Curriculum Planning and Instruction	.449**	0.000	Highly Significant
Classroom Management Productivity	.447**	0.000	Highly Significant
Social Productivity	.322**	0.000	Highly Significant
Cultural Atmosphere			
Personal Productivity	.392**	0.000	Highly Significant
Academic Productivity	.380**	0.000	Highly Significant
Curriculum Planning and Instruction	.383**	0.000	Highly Significant
Classroom Management Productivity	.382**	0.000	Highly Significant
Social Productivity	.419**	0.000	Highly Significant

Legend: Significant at $p\text{-value} < 0.01$

The organization has improved the classroom management ability and academic research productivity of teachers through employee training, and the good working environment provided by the organization has a positive promoting effect on the social productivity of teachers. The education department has invested in the software and hardware of universities, improved salaries, benefits, and social status of teachers, enhanced their professional pride in teaching, and motivated teachers at all levels to pursue teaching and academic productivity (Lecturer, 2013). Xiong, et. al., (2023) proposed that the school should improve teachers' teaching skills through training and special seminars for young teachers, and actively hold various teaching competitions, in which teachers can make up for their teaching skills through competitions. This kind of growth support for young teachers promotes the improvement of teachers' various teaching abilities. The rationality of the school promotion and professional title evaluation mechanism not only improves the enthusiasm of teachers' scientific research and innovation, but also supports the development of teachers' teaching productivity.

Lazear (2018) pointed out that, in addition to monetary incentives, some non-monetary incentives and incentives that favor teachers' interests can encourage teachers to support current organizations and stimulate their internal motivation. This is because some higher education teachers focus more about social rewards than just financial benefits. Ubah (2023) believed that school climate factors such as monetary incentives, teaching resources, relationships, school friendship, fair recognition of talented people, and opportunities for self-expression and development; create incentives for productivity. The findings also reaffirmed that collaboration and engagement in decision making will inspire strong morale and productivity.

Table 6
Relationship Between Work Engagement and Work Productivity

Vigor	r-value	p-value	Interpretation
Personal Productivity	.384**	0.000	Highly Significant
Academic Productivity	.508**	0.000	Highly Significant
Curriculum Planning and Instruction	.478**	0.000	Highly Significant
Classroom Management Productivity	.402**	0.000	Highly Significant
Social Productivity	.464**	0.000	Highly Significant

Dedication			
Personal Productivity	.378**	0.000	Highly Significant
Academic Productivity	.409**	0.000	Highly Significant
Curriculum Planning and Instruction	.409**	0.000	Highly Significant
Classroom Management Productivity	.465**	0.000	Highly Significant
Social Productivity	.434**	0.000	Highly Significant
Absorption			
Personal Productivity	.442**	0.000	Highly Significant
Academic Productivity	.352**	0.000	Highly Significant
Curriculum Planning and Instruction	.347**	0.000	Highly Significant
Classroom Management Productivity	.382**	0.000	Highly Significant
Social Productivity	.365**	0.000	Highly Significant

Legend: Significant at p -value < 0.01

Table 6 displays the relationship between work engagement and work productivity. The calculated r -values suggest a moderate positive correlation between the two variables. Additionally, the resulting p -values were found to be below the predetermined alpha level, indicating statistical significance. This means that there was significant relationship exists and implies that the more that they are engaged, the more that they are productive. This result is the same as the vast majority of studies.

Hanaysha (2016) conducted an online survey of the collected data in Malaysia. The results showed that the three dimensions of work input (vigor, dedication and absorption) have a positive impact on employee productivity ($p < 0.05$). The energy component of work engagement is important. The more energy employees invest in their work, the greater their contribution to productivity. Vitality seems to be the most important factor in work engagement and performance. Christensen (2020) believed that due to the tendency of resource support, teachers' absorption for academic productivity far exceeds their enthusiasm for teaching. Abdelwahed (2023) studied the relationship between work engagement and productivity of employees in higher education institutions. After analysis, it was found that work engagement (vigor, dedication, and absorption) has a significant positive impact on productivity, and work engagement encourages them to fulfill their intellectual and psychological commitments to the organization. Teachers who are engaged in work possess strong professional qualities and constantly learn new knowledge. Secondly, teachers who are engaged in work pay more attention to the individual development of students, focusing on their personality, interests, and potential. In addition, teachers who are dedicated to their work are more passionate and motivated in education and teaching.

On the other hand, some studies has shown that work engagement is not easily too high, high participation is not always conducive to improve work efficiency, but may cause health problems, moderate work engagement will improve work efficiency; it is necessary to determine the optimal level of work participation (Imamura, et. al., 2016). Abdulrahman, et. al., (2022) believed that work engagement seriously affects employee productivity, and the company must take measures to improve employee engagement. In his research report, he put forward several suggestions for improving productivity: (1) the organization should set up a special department to understand employees' participation and happiness in work; (2) to provide sufficient living resources for employees as far as possible, and (3) the organization should conduct two-way communication with employees to increase their sense of participation.

Table 7

Proposed Faculty Development Plan to Enhance the Incentive Mechanisms, Work Engagement and Work Productivity

Key Result Areas Objective	Strategies/Activities	Key Performance Indicator	Persons Involved
I Incentive Mechanisms 1.1 Salary and Benefits Objective: Ensure the quality of life of teachers and improve their satisfaction.	1. The basic rights and needs of teachers should be the central focus of schools, such as salaries, benefits, and reasonable paid leave. 2. Provide working meals or meal allowance for teachers. 3. Establish a performance system based on teaching, competition and scientific research achievements.	Teachers are paid at or more than 20% of the local average income. Teachers are 90% satisfied with their salaries and benefits.	School Administrators, School Heads, Human Resource and Development Office, Guidance Counselors, Teachers
II Work Engagement 2.1 Dedication	Provide continuous development opportunities for teachers	In the evaluation system, 90% of the	School Administrators, School Heads,

Incentive mechanisms, work engagement, and productivity of higher education teachers in China

Objective: Enhance teachers' professional pride.	establish a harmonious, positive work atmosphere and pleasant working environment; 3.establish a reward and recognition system to encourage outstanding performance among teachers.	students believe that teachers demonstrate a spirit of dedication in their teaching.	Teachers
2.2 Absorption Objective: Improve teachers' work efficiency and work investment, improve the teaching effect	Organizations should improve teachers' treatment, reduce the pressure on teachers, provide training and promotion opportunities, and establish incentive mechanisms. Teachers make clear their work goals, cultivate self-confidence, and control their self-awareness without being affected by the outside world or emotions.	Teachers are paid at or more than 20% of the local average income.	School Administrators, School Heads, Guidance Counselors, Teachers
III Productivity 3.1 Academic Productivity Objective: Make teachers master effective teaching skills, improve the ability to train students.	1.The school regularly holds teacher training and seminars, covering topics such as the school's teaching objectives, teaching tasks, subject knowledge integration, etc. 2.Teaching reflection is normalized and managed to prompt teachers to identify issues and seek methods for improvement in a timely manner.	Positive feedback from students reached 98%; 90% of students achieved excellent, and teachers' professional development participation reached 95%.	School Administrators, School Heads, Human Resource and Development Office, Teachers

4. Conclusion and recommendations

Teachers are generally satisfied with the incentive mechanism of the school, and the salary structure, promotion system and teacher development of the training are more in line with the personal development needs of teachers. Higher education teachers approach their work with great enthusiasm, feeling energized and often deeply engaged in their tasks, while demonstrating a willingness to embrace any challenges that arise. College educators are very satisfied with their work productivity, which encompasses personal productivity, classroom management skills, curriculum planning, and community service capabilities. There is a significant positive correlation between the three variables of incentive mechanism, work input and productivity, indicating that the more reasonable the incentive mechanism, the more teachers invest to work, the more productive there are. Establishing and implementing reasonable incentive mechanisms can improve the work engagement and work productivity of higher education teachers. School administrators may set up assessment indicators according to the actual work of teachers and evaluate teachers' performance with objective results, and introduce diversified evaluation methods, and formulate perfect rules and operating procedures to strengthen the openness and transparency of the evaluation results. Administrators may design more training and research activities, establish an effective evaluation system, and provide guidance and support for teachers' professional growth.

College teachers may clarify their own job responsibilities, improve their own knowledge and professional ability, enhance their social service ability, and constantly reflect on and improve their own educational practice. At the basic level, improve work efficiency, such as by attending training and seminars, training, developing innovation and critical thinking, scientific writing, information and communication technology use, etc. Fair and reasonable benefits may be offered to teachers for them. Improving teachers' benefits includes: raising teachers' salary level, increasing teachers' welfare benefits, such as medical insurance, pension, occupational annuity, etc., and increasing teachers' vacation time. School leaders may establish clear, quantifiable school goals; provide the support and resources needed for teacher development; create a tutorial system; and establish a learning-and growth-oriented work environment. A further study on other demographic variables may be conducted to understand what demographic profiling affects work engagement and productivity of teachers. Other variables such as performance and job satisfaction may be used for follow-up studies to further understand the effect of teachers development. Develop reasonable and effective salary and reward system; provide regular teaching training and professional development activities; encourage faculty to conduct reflective teaching activities; provide faculty with professional development resources; and give faculty certain teaching autonomy. Through these measures to stimulate the enthusiasm of faculties and work enthusiasm, improve the work input and work efficiency.

5. References

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