

A study on the impact of the occupational performance of teachers in adult education institutions on instructional satisfaction

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Abstract. This study treated adult in-service students of adult education institutions as the subjects and collected data through a questionnaire survey. This study conducted confirmatory factor analysis, and reliability analysis in order to develop questionnaire on "Occupational Performance of Teachers in Adult Education Institutions" and "Instructional Satisfaction in Adult Education Institutions". The collected data were analyzed to discuss the occupational performance and instructional satisfaction in adult education institutions, as well as the correlation between the two and their predictability. It is found that occupational performance and instructional satisfaction in adult education institutions are highly positively correlated and greatly predictable. It is therefore suggested that teachers in adult education institutions work actively to deliver their occupational performance so as to enhance instructional satisfaction and help students to achieve their learning objectives in an effective manner.

1 Introduction

1.1 Research motives

Adult students refer to learners who are above 18 years old, including post-adolescents, the middle-aged, and the elderly. They have more diverse and complex social backgrounds than do adolescent learners, and their reasons for education activities are very different from that of young students whose purpose is relatively simple, mainly for obtaining knowledge and skills and gaining a diploma and degree. With different social environments and physical and mental attributes and needs, adult learners participate in education activities in order to not just get a diploma and degree, but also to strengthen professional skills, enrich life knowledge and related skills, solve problems in life and work, pursue lifelong learning, make friends, expand interpersonal network, look for business partners, explore for customers, obtain a student identity for social welfare, kill time, etc. Compared with adolescent students, adult learners are confronted with gradually aging physiological functions, and so their abilities to absorb and respond to knowledge and skills are obviously poorer than those of young students. Nevertheless, according to ten years of experience for researchers in adult education, the older adult learners are, the better learning motivation they will gain and the more time and energy they will put into learning.

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To achieve teaching objectives, it is necessary for teachers engaged in adult education to understand the adult students' learning attributes, so as to design effective course contents, teaching methods, learning guidance, and assessment methods to help them to achieve their learning objectives. Nicknamed as Father of Adult Education, Knowles (1990) put forward seven steps of andragogy for helping adults to learn effectively: create a good learning atmosphere, build a joint planning mechanism (teachers and students design the training contents and implementation methods together), diagnose learning needs, set up plans and objectives, build a model of learning experience (think about methods for teaching and learning), guide learning activities with appropriate technology and teaching materials, assess learning outcomes, and re-diagnose new learning needs.

Teachers in adult education institutions should consider the following important enlightenments when planning learning activities: first, teachers should be learner-oriented, inspire learners on learning needs and responsibility, and encourage adults to establish self-directed learning habits; second, effective learning should be combined with adults' life experience and development tasks, so that the learners can have stronger motivation and better learning outcomes; third, to achieve effective learning, learners must participate in the design of learning activities, including goal setting, needs recognition, design of learning styles, etc.; fourth, the teacher plays a role as a learning partner, providing a learning environment and support for adults' learning; fifth and lastly, the adult education model is a dynamic process - that is to say, the seven principles form an alternate cycle. For instance, creating a good learning atmosphere not only is the first step, but also runs through the whole teaching process, just like the rest of the principles [18, 52].

If teachers in adult education institutions could grasp the following principles in the teaching process, then it will be helpful for maximizing teaching effects: understand attributes of adult learners, enhance adults' learning motivation, arrange appropriate learning environment, build a relaxing and comfortable learning atmosphere, set up learning groups, utilize adults' experience as important learning resources, adopt problem-centered learning structure, and employ evaluation methods suitable for adult learning; as for the curriculum planning of adult education, teachers should take into account adult learners' learning motivation, design flexible study hours catering to different student groups, and arrange convenient learning places to facilitate study of adult learners [1, 21, 44].

While primary and secondary school teachers have formal training programs for the implementation of professional teacher training, there is no formal training program for teachers in higher education institutions and in adult education institutions. There are obvious differences between adult education and child or teenager education. In addition to the minor differences between basic educational philosophies and principles, the interactive relationship between teachers and adult students, the needs and purpose of adults participating in the education activities, learning places, learning time, learning atmosphere, course topics and design, arrangement and implementation of teaching activities and so on are totally diverse from the case of adolescent students. In other words, teachers should not teach adult students in the same way they teach children or teenagers. Instead, they should plan curriculum and teaching according to learning features and needs of adult students, based on the principles of adaptive and differentiating teaching. Therefore, taking adult students participating in adult education activities as subjects, from the viewpoint of adult students, this study aims to understand the connotation of the occupational performance of teachers in adult education institutions, and whether they can meet the learning objectives and needs of adult students.

1.2 Research purposes

Based on the foregoing research motives, the research objectives are as follows.

- 1.2.1 To explore the connotation of the occupational performance of teachers and instructional satisfaction in adult education institutions.
- 1.2.2 To design questionnaires on the occupational performance of teachers and instructional satisfaction in adult education institutions.
- 1.2.3 To explore the influence that the occupational performance of teachers exerts on students' learning satisfaction in adult education institutions.

1.2.4 To draw a conclusion and propose suggestions according to the study results on how teachers in adult education institutions should deliver their occupational performance effectively so as to improve the instructional satisfaction of adult learners.

1.3 Research methods and process

Based on the literature review and analysis, this study first explored the connotation of the occupational performance of teachers and instructional satisfaction in adult education institutions, so as to design the first draft of the questionnaire on "Occupational Performance of Teachers in Adult Education Institutions" and "Instructional Satisfaction in Adult Education Institutions". Next, it took adult students participating in teaching activities of adult education institutions (including open university, community university, workers' university, university for the elderly, tribal university, and continuing education classes) as subjects to pilot test the questionnaire in order to improve the reliability and validity of the questionnaire. Afterwards, the formal questionnaire was designed to conduct the formal survey; after the survey, the collected data were analyzed with the method of descriptive statistics and inferential statistics to understand the subjects' attitudes toward teachers' occupational performance and instructional satisfaction, to realize the difference among subjects of different social variables on satisfaction with teachers' occupational performance and instructional satisfaction, and to analyze and discuss the correlation between teachers' occupational performance and instructional satisfaction. Lastly, this study draws a conclusion and puts forward feasible suggestions on how to improve teachers' occupational performance and instructional satisfaction.

1.4 Research structure

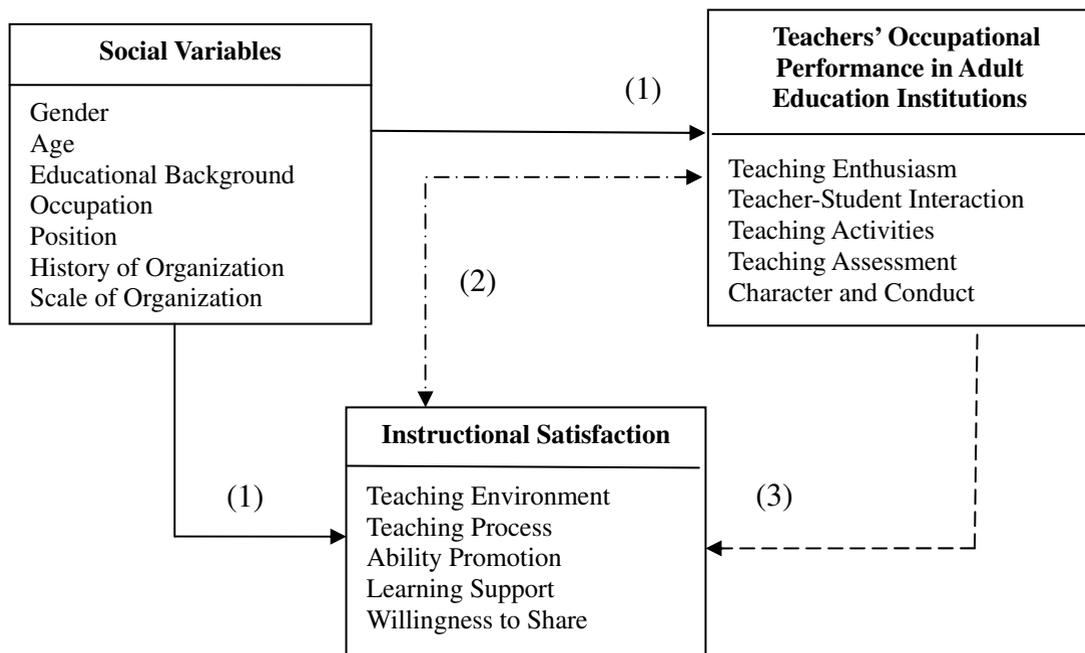


Figure 1. Statistical Analysis Structure, Source: Drawn by the Author.

As shown in Figure 1, the statistical analysis structure of this study includes exploring social variables, such as the adult student respondents' gender, age, educational background, occupation, positions, history of organization, and scale of organization. The study then took occupational performance of teachers in adult education institutions, such as teaching enthusiasm, teacher-student interaction, teaching activities, teaching assessment, and teachers' character and conduct, as independent variables.

Finally, this study took teaching environment, teaching process, ability promotion, learning support, willingness to share, and other learning satisfaction feelings as dependent variables. Through empirical research and inferential statistical analysis, this study explored the relation among the variables.

Statistical Analysis:

- (1) With T test and One-way ANOVA, to explore how different social background affects the occupational performance of teachers in adult education institutions and their cognition and feelings of instructional satisfaction.
- (2) With Pearson product-moment correlation, to explore the correlation and degree between the occupational performance and cognition and feelings of teachers' instructional satisfaction in adult education institutions.
- (3) With regression analysis, to find out the predictive power of the occupational performance on cognition and feelings of teachers' instructional satisfaction in adult education institutions.

2 Connotation of teachers' competency in adult education institutions and related research

Competency is derived from McClelland (1973) replacing intelligence with competency measurement as the prediction basis of personal success. The connotation of competency includes knowledge, skills, and cordiality, with external behaviors as the basis of measurement. In addition, it can also be distinguished as an individual's "possessed" ability, referring to possessing knowledge, emotions and skills, or abilities to "perform" - that is, successful implementation of a task with actual behavioral performance [24]. Cheng, Lin, and Cheng (2009) defined competency as the "ability to use knowledge, attitude and skills to perform work tasks, which was all the behavior, motivates and knowledge related to work success or failure" cited from [54]. Spencer and Spencer (1993) proposed the Iceberg Model, regarding competency being composed of five elements: skills, knowledge, self-concept, traits, and motives, among which, skills and knowledge are more explicit and easier to be trained, developed, and changed, similar to the part of the iceberg above the surface of the ocean, and thus they exhibit surface competency; while self-concept, traits, and motivations are relatively implicit and cannot easily be changed, like the part of the iceberg hidden under the surface, and thus they present implicit competency.

Shulman (1986) held that the required competency of the teaching profession includes 7 aspects: content knowledge, general pedagogical knowledge, curriculum knowledge, pedagogical content knowledge, knowledge of learners and their characteristics, knowledge of educational contexts, as well as knowledge of educational goals, purposes, values, philosophy, and history. Royer & Feldman (1984) stressed that the most important thing for a successful teacher is that he/she must genuinely love teaching, be patient, have acute awareness of students' needs, fully prepare for lectures, etc. The teacher must possess knowledge that the student is learning and developing his/her professional knowledge and further organize the knowledge and convey it to students; at the same time, the teacher must be capable of classroom management and adopt a multi-dimensional evaluation of students; in addition, the teacher must develop his/her latent traits, showing a professional image [16, 22, 43].

The competency requirements for teachers in adult education institution have common features with those for traditional teachers. Nonetheless, considering the adult students' diverse social background and learning needs, there should also be some special requirements, and when reflected on the quality of competency, there should be comprehensive quality merging together with ideology and morality, scientific and cultural knowledge, teaching activity characteristics, level of physical and mental development, ability, and personality traits, embodied in knowledge, ability, body and mind, character, methods, and so on. One should also emphasize the professional characteristics of teachers in adult education institutions, such as a good command of professional skills and rich work experience [20].

From the perspective of the course of its development, the teaching profession has advanced from the organizational development stage to the professional development stage. With special

characteristics of professional development, teachers in adult education institutions are geared for professional development. Teachers' professional development has gone through the external professional standard construction to individual independent development and is accompanied by improvements in various education systems and the development of a safeguard mechanism. Despite the variety of adult education objects, contents, and forms, adult education can still be evaluated from the following six aspects [5, 30]: (1) use of professional knowledge and skills, (2) possession of service concept and work ethic, (3) undertaking long-term professional training, (4) continuously seeking professional education for professional development, (5) entitlement to effective professional autonomy; and (6) forming a strong professional organization.

Professional teachers in adult education institutions are familiar with a series of procedures, such as plans, teaching, assessments, etc., and they can choose different teaching contents and methods according to different teaching objects so as to effectively manage the class, attract students' attention, and smoothly carry out teaching activities. They should also take appropriate actions in uncertain and complex teaching situations in order to successfully complete teaching tasks [13, 26]. With adults as their educational objects - who have a higher level of psychological maturity and a richer life experience - in order to interact and communicate with adult learners and give guidance in their learning, teachers in adult education institutions must have extensive knowledge in various fields, so as to meet the interests and developing needs of adult learners and to win admiration from adult learners. In addition, character, words and deeds, ideology, and moral sentiment of the teachers in adult education institutions all directly or imperceptibly influence their students. During work and interaction with students, teachers' excellent qualities, such as dedication, responsibility, enthusiasm, kindness, humility, self-discipline, democracy, justice, integrity, and willpower, are not only conducive to the teaching activities and development of students' body and mind, but also help teachers to act as a role model and play an exemplary role for adult students [10].

This study integrates other studies and discussions of relevant researchers [1, 4, 6, 15, 17, 19, 22], [23, 28, 31, 35, 38, 45], [46, 49], [54-56] on adult education and competency of teachers. This paper summarizes adult education institution teachers' competency into 5 aspects: teaching enthusiasm, teacher-student interaction, teaching activities, teaching assessment, and character and conduct, with a total of 25 competency items that are illustrated as follows.

A. Teaching Enthusiasm

- A-1. Energetic and vigorous
- A-2. Devoted to teaching
- A-3. Confident about teaching
- A-4. Aware of students' learning needs
- A-5. Innovative and motivated in the teaching profession

B. Teacher-Student Interaction

- B-1. Cheerful and humorous
- B-2. Able to create an interactive atmosphere in class
- B-3. Able to arouse students' learning motivation
- B-4. Open to students' suggestions and criticism
- B-5. Caring about and guiding students in life and study

C. Teaching Activities

- C-1. Fully prepared for teaching materials
- C-2. Logical and certain about teaching objectives
- C-3. Clear and articulate
- C-4. Able to quote extensively and give examples
- C-5. Vivacious and funny in teaching activities

D. Teaching Assessment

- D-1. Coordinate teaching assessment with teaching objectives
- D-2. Design appropriate assessment activities according to students' traits
- D-3. Adopt multi-dimensional assessment methods
- D-4. Able to assess and grade fairly
- D-5. Able to improve teaching according to assessment results

E. Character and Conduct

- E-1. Observe disciplines and fulfill responsibilities
- E-2. Set an example with own conduct
- E-3. Virtuous and speaking friendly
- E-4. Truthful in speech and firm in action
- E-5. Friendly and amiable

3 Connotation of student satisfaction and related research

Chang (2010) explained satisfaction as an internal state when individual motives (physical or psychological) drive behaviors to achieve the pursued goal, which are psychological feelings when the individual's desire is satisfied. Webster's unabridged dictionary (1997) defines satisfaction as a kind of feeling and state of mind after the desire fades away. Tough (1982) pointed out that student satisfaction is a kind of feeling or attitude towards learning activities, which results from learners' love for the learning activity, or in the process of learning their desire and needs are satisfied. Student satisfaction therefore can be used to explain the motives and results of learners to participate in the learning activities. Flammger (1991) defined student satisfaction as the fulfillment of demands and needs, as well as a feeling of enjoyment and satisfaction. Spence & Evans (1956) believed that everyone in different life phases have different learning needs and desires; if these needs and desires were realized, he/she would be satisfied; otherwise, he/she would feel dissatisfied and stop learning.

Lam & Wong's (1974) research suggested that if the learning content is in accordance with students' interests or needs, then it will improve student satisfaction; they also noted that the more intimate the teacher is to students and the more informal the interactions are between the teacher and students, the more satisfied the students feel about the teacher. Lin (1999) argued that the factors affecting student satisfaction are comprehensive. In addition to students' personal factors, teachers and the school can also exert an effect. His research summarized the factors affecting student satisfaction into the following aspects: (1) students' personal factors: students' background (such as gender, age, and educational background), personality, interests, inclination, participation motives, learning interests, experience, family background, self-concept, self-esteem, etc. are related to student satisfaction, (2) teachers' factors: teachers' professional intelligence, traits, teaching strategies, teaching behaviors, teaching methods, teaching contents, attitude toward students, teaching attitude, enthusiasm, etc. affect student satisfaction, (3) school's factors: school location, school-located downtown environment, learning environment, teaching facilities, administrative arrangement, transportation, etc. also affect student satisfaction.

Based on an opinion survey of learners at Evergreen School in Kaohsiung, Pai (1984) concluded that student satisfaction included 8 aspects: class places, curriculum, teachers' attitude in class, teaching methods, course contents, professional knowledge, expressive skills, and service attitude of school administrative staff. Tsai (1991) in his study of student satisfaction and its related factors of elderly learners divided students' satisfaction into two aspects: Evergreen School and students' learning outcomes; the aspect of Evergreen School includes course contents, teachers, hardware facilities and administrative measures; the aspect of students' learning outcomes includes entertainment, self-fulfillment, interpersonal relationship, and social adjustment.

Chen (1997) conducted a study on National Open University students and divided student satisfaction into teaching methods, course contents, learning outcomes, teacher-student interaction, peer relationship and support, etc. Conducting research on university extension education, Wang (1999) categorized educational service quality into five aspects: administrative support, physical facilities, curriculum design and teaching materials selection, teachers' qualities, and interactions. In his study of teacher-student interaction and student satisfaction in National Open University, Lin (2000) divided satisfaction into institutional support, upgrading education, teaching materials, and peer relationship. Chen (2003) explored student satisfaction of students from National Open University from five aspects: learning environment, administrative quality, teachers' quality and teaching attitudes, curriculum, and interpersonal relationship. Kao (2014) probed into student

satisfaction of adult learners about digital learning from five aspects: digital learning environment, teaching performance, ability improvement, learning resources support, and willingness to participate and share.

Based on the above review of student satisfaction variables, this paper takes five aspects to examine student satisfaction: teaching environment, teaching process, ability promotion, learning support, and willingness to share, for a total of 25 items of student satisfaction that are illustrated as follows.

A. Teaching Environment

- A-1. I am satisfied with the lighting equipment in the classroom.
- A-2. I am satisfied with ventilation and air-conditioning in the classroom.
- A-3. I am satisfied with the desks and chairs in the classroom, because they are comfortable.
- A-4. The teaching aids are in good condition and can satisfy my learning needs.
- A-5. The network and digital teaching system is easy to use and satisfies my learning needs.

B. Teaching Process

- B-1. I am satisfied with the teaching materials and lecture notes.
- B-2. I am satisfied with the teaching schedule.
- B-3. I am satisfied with the teacher's teaching attitude.
- B-4. I am satisfied with the teaching methods.
- B-5. I am satisfied with the teaching assessment.

C. Ability Promotion

- C-1. I become more interested in learning.
- C-2. The teacher gives me great help in life and work.
- C-3. The teacher enables me to control my schedule of life and work.
- C-4. The teacher teaches me better methods in learning and work.
- C-5. The teacher makes me improve my learning and work performance.

D. Learning Support

- D-1. The teacher's encouragement and support are the source of my learning motives.
- D-2. The learning climate created by the teacher helps me in learning.
- D-3. The teacher knows my learning status well and gives me timely tutorial.
- D-4. Emergency equipment is in good maintenance.
- D-5. Abnormal situations are under effective and quick control.

E. Willingness to Share

- E-1. I am willing to introduce the school's services to others.
- E-2. I have introduced the school's services to others.
- E-3. If others seek advice from me, I will give priority to introducing my school.
- E-4. I will tell others about the advantages of my school.
- E-5. I feel proud when introducing my school to others.

4 Design of questionnaires on the occupational performance of teachers and instructional satisfaction in adult education institutions

The questionnaires on the occupational performance of teachers and on the instructional satisfaction in adult education institutions are designed based on a comprehensive analysis of relevant literature. Questions for the questionnaire were then designed, and after specialist validity, construct validity and reliability, and use of statistical analysis methods, the questionnaire was finalized.

4.1 Methods used in the design of the questionnaire

Through a literature review and analysis, this study summarized and edited the first draft of the questionnaires on the occupational performance of teachers and on instructional satisfaction in adult

education institutions. The questionnaire adopts a five-point Likert Scale: “strongly agree” for 5 points, “agree” for 4 points, “medium” for 3 points, “disagree” for 2 points, and “strongly disagree” for 1 point. Adult education practitioners, scholars, and experts who conduct studies on adult education were invited as reviewers of the first draft of the questionnaire. In terms of adult education practitioners, two senior teachers were invited from each of the adult education institutions of National Open University, Community University, University of Aboriginal Tribes in Kaohsiung, and Workers’ University, for a total number of 8; as for scholars and experts conducting studies on adult education, a total of 7 scholars and experts were invited from Open University of Kaohsiung, National Pingtung University, National Kaohsiung Normal University, National Chung Cheng University, National Chi Nan University, Chang Jung Christian University, and Aletheia University, for a total of 15 experts who reviewed the first draft of the questionnaire.

After review of the first draft by the experts, the pilot test of the questionnaire was carried out. A total of 200 questionnaires were handed out and 186 were collected, and based on the collected questionnaire data, its validity and reliability were established. The validity of this study is based on the factor analysis of Structural Equation Modeling (SEM) by LISREL software. One of the most important characteristics of SEM analysis is that it must be based on certain theories - SEM is a statistical technique used to verify the applicability of a prior theoretical model [11]. Researchers must give a clear explanation about the content and character of the latent variables at the beginning of the measurement, or they must provide a specific theoretical basis and have set up the model of corresponding observed variables earlier. Analysis of the test is for proving the applicability of the factor structure proposed at an early phase. In addition to improving the measurement equipment, this procedure can be used to test the effectiveness of the structure and also can be used in the verification of the theoretical framework. Thus, SEM analysis is also known as confirmatory factor analysis (CFA) [12, 53].

Questionnaires on the occupational performance of teachers and instructional satisfaction in adult education institutions have a strong theoretical foundation and model. Therefore, the validity analysis of the questionnaire adopts LISREL software to conduct SEM confirmatory factor analysis, so as to understand the factor model of internal construct. The reliability analysis of this study carried out Cronbach's α analysis with SPSS software, so as to understand the internal consistency at all levels.

4.2 Results of questionnaires on teachers’ occupational performance and student satisfaction in adult education institutions

The questionnaires were designed to cover the contents through expert validity analysis, after reserving 10 parts of the first draft, issuing a total of 50 questions, correcting some words in the questions, and consolidating some questions,. After SEM analysis and Cronbach's α analysis of the questionnaire, the results are as follows.

4.2.1 Questionnaires on teachers’ occupational performance in adult education institutions

The questionnaires were designed to cover the contents through expert validity analysis, after reserving 5 parts of the first draft, issuing a total of 25 questions on teaching enthusiasm, teacher-student interaction, teaching activities, teaching assessment, character and conduct, correcting some words in the questions, and consolidating some questions,. After SEM analysis and Cronbach's α analysis of the questionnaire, the results are as follows.

4.2.1.1 SEM Analysis of questionnaires on teachers’ occupational performance in adult education institutions

Through SEM analysis with LISREL software and with a large number of questions, it is impossible to present all the results and a relational graph. However, the analysis report lists the degrees of

freedom and chi-square statistics of the overall model, among which the degrees of freedom are 2043, chi-square value is 11171.83, and P value is 0.0, indicating that there are differences between the hypothesis model and the observed value. In addition, the other goodness-of-fit index NFI, NNFI, and CFI are all over 0.95, indicating the good condition of each question and structural dimension. Factor loadings for the questions in each part are as follows.

- (1) Factor loadings for each question in the part of teaching enthusiasm, from A-1 to A-5, are 0.53, 0.57, 0.53, 0.49, and 0.53.
- (2) Factor loadings for each question in the part of teacher-student interaction, from B-1 to B-5, are 0.55, 0.64, 0.61, 0.62, and 0.61.
- (3) Factor loadings for each question in the part of teaching activities, from C-1 to C-5, are 0.53, 0.58, 0.52, 0.55, and 0.55.
- (4) Factor loadings for each question in the part of teaching assessment, from D-1 to D-5, are 0.57, 0.52, 0.51, 0.53, and 0.50.
- (5) Factor loadings for each question in the part of character and conduct, from E-1 to E-5, are 0.60, 0.54, 0.58, 0.53, and 0.56.

4.2.1.2 Cronbach's α analysis

- (1) For reliability in the overall teaching enthusiasm, the α value is 0.85, indicating that there is a certain degree of internal consistency for teachers' teaching enthusiasm in adult education institutions. In addition, the correlation values of each question and for all questions in the dimension are above 0.56, showing that there is high internal consistency in each dimension.
- (2) For reliability in the overall student-teacher interaction, the α value is 0.86, indicating that there is a certain degree of internal consistency for student-teacher interaction in adult education institutions. In addition, the correlation values of each question and for all questions in the dimension are above 0.60, showing that there is high internal consistency in each dimension.
- (3) For reliability in the overall teaching activities, the α value is 0.86, indicating that there is a certain degree of internal consistency for teaching activities in adult education institutions. In addition, the correlation values of each question and for all questions in the dimension are above 0.63, showing that there is high internal consistency in each dimension.
- (4) For reliability in the overall teaching assessment, the α value is 0.85, indicating that there is a certain degree of internal consistency for teaching assessment in adult education institutions. In addition, the correlation values of each question and for all questions in the dimension are above 0.57, showing that there is high internal consistency in each dimension.
- (5) For reliability in the overall character and conduct, the α value is 0.86, indicating that there is a certain degree of internal consistency for character and conduct of teachers in adult education institutions. In addition, the correlation values of each question and for all questions in the dimension are above 0.60, showing that there is high internal consistency in each dimension.

Nunnally (1978) believed that an α value above 0.7 shows high reliability cited from [53]. Therefore, based on the Cronbach's α analysis on reliability, the questionnaire has high reliability and consistency.

To summarize, this study retained 5 dimensions and questions of the questionnaire on the occupational performance of teachers in adult education institutions. This questionnaire was then used as the formal survey questionnaire to explore the overview of the occupational performance of teachers in adult education institutions in teaching enthusiasm, teacher-student interaction, teaching activities, teaching assessment, and character and conduct.

4.2.2 Questionnaire on student satisfaction in adult education institutions

The questionnaires were designed to cover the contents through expert validity analysis, after reserving 5 parts of the first draft, issuing a total of 25 questions on teaching environment, teaching process, ability promotion, learning support, and willingness to share, correcting some words in the

questions, and consolidating some questions. After SEM analysis and Cronbach's α analysis of the questionnaire, the results are as follows.

4.2.2.1 SEM analysis of questionnaires on instructional satisfaction in adult education institutions

Through SEM analysis with LISREL software and with a large number of questions, it is impossible to present all the results and a relational graph. However, the analysis report lists the degrees of freedom and chi-square statistics of the overall model, among which the degrees of freedom are 395, chi-square value is 2930.37, and P value is 0.0, indicating that there are differences between the hypothesis model and the observed value. In addition, the other goodness-of-fit index NFI, NNFI, and CFI are all over 0.95, indicating the good condition of each questions and structural dimensions. Factor loadings for questions in each part are as follows.

- (1) Factor loadings for each question in the part of teaching environment, from A-1 to A-5, are 0.56, 0.56, 0.58, 0.55, and 0.51.
- (2) Factor loadings for each question in the part of teaching process, from B-1 to B-5, are 0.61, 0.58, 0.61, 0.56, and 0.63.
- (3) Factor loadings for each question in the part of ability promotion, from C-1 to C-5, are 0.53, 0.56, 0.52, 0.54, and 0.55.
- (4) Factor loadings for each question in the part of learning support, from D-1 to D-5, are 0.58, 0.59, 0.60, 0.62, and 0.57.
- (5) Factor loadings for each question in the part of willingness to share, from E-1 to E-5, are 0.57, 0.60, 0.55, 0.58, and 0.56.

4.2.2.2 Cronbach's α analysis on questionnaire on instructional satisfaction in adult education institutions

- (1) For reliability in the overall teaching environment, the α value is 0.87, indicating that there is a certain degree of internal consistency for teaching environment in adult education institutions. In addition, the correlation values of each question and for all questions in the dimension are above 0.66, showing that there is high internal consistency in each dimension.
- (2) For reliability in the overall teaching process, the α value is 0.86, indicating that there is a certain degree of internal consistency for teaching process in adult education institutions. In addition, the correlation values of each question and for all questions in the dimension are above 0.64, showing that there is high internal consistency in each dimension.
- (3) For reliability in the overall ability promotion, the α value is 0.83, indicating that there is a certain degree of internal consistency for ability promotion in adult education institutions. In addition, the correlation values of each question and for all questions in the dimension are above 0.61, showing that there is high internal consistency in each dimension.
- (4) For reliability in the overall learning support, the α value is 0.85, indicating that there is a certain degree of internal consistency for learning support in adult education institutions. In addition, the correlation values of each question and for all questions in the dimension are above 0.63, showing that there is high internal consistency in each dimension.
- (5) For reliability in the overall willingness to share, the α value is 0.85, indicating that there is a certain degree of internal consistency for willingness to share in adult education institutions. In addition, the correlation values of each question and for all questions in the dimension are above 0.64, showing that there is high internal consistency in each dimension.

Nunnally (1978) believed that an α value above 0.7 shows high reliability cited from [53]. Therefore, based on the Cronbach's α analysis on reliability, the questionnaire has high reliability and consistency.

To summarize, this study retained 5 dimensions and questions for the questionnaire on the instructional satisfaction in adult education institutions. This questionnaire was used as the formal survey questionnaire to explore the overview of cognition and feelings of adult learners about teaching environment, teaching process, ability promotion, learning support, and willingness to share.

5 Research results

After completing the design of the formal Questionnaires on Occupational Performance of Teachers and on the Instructional Satisfaction in Adult Education Institutions, this study adopted the cluster random sampling method, extracting 800 subjects to conduct the questionnaire survey and collecting 674 effective questionnaires. The study then conducted descriptive statistics, T test, One-way ANOVA, regression analysis, etc. The analysis results are stated below.

5.1 Descriptive statistics

5.1.1 Gender

Among the effective samples, 301 are male (44.7%); 373 are female (55.3%).

5.1.2 Age

The majority of the respondents are ages 21 to 40, for a total of 344 people (51.0%); the second largest group is ages 41 to 60, for a total of 278 people (41.2%).

5.1.3 Educational background

The majority of the respondents are high school graduates, with a total number of 328 people (48.7%); followed by graduates of junior college or university, for a total of 222 people (32.9%).

5.1.4 Occupation

The majority of the respondents work in industrial and commercial services, with a total of 345 people (51.2%); followed by civil servants (including soldiers, government workers, teachers, police, firefighters, etc.), for a total of 216 people (32.0%).

5.1.5 Positions

Most of the samples are employees, for a total of 502 people (74.5%); followed by department managers, for a total of 86 people (12.8%); in addition, 86 of the respondents are heads of their company (12.8%).

5.1.6 History of organization

The majority of 264 people are from organizations with over 21 years of history (39.2%); followed by 176 people from organizations with a history of less than 5 years (26.1%); in addition, 150 people are from organizations with a history of 11 to 20 years (22.3%); while 84 people are from organizations with a history of 6 to 10 years (12.5%).

5.1.7 Scale of organization

The majority of the sample, 309, are from organizations with less than 50 employees (45.8%); followed by 226 people from organizations with over 201 employees (33.5%).

5.2 Current situation of the occupational performance of teachers and instructional satisfaction of adult learners in adult education institutions

Tables 1 and 2 lists the statistics of the average number and standard deviation at all levels concerning the current situation of teachers' occupational performance and adult learners' student satisfaction in adult education institutions. Table 1 shows that the average number for the performance of teachers in adult education institutions is above 4.50, indicating high performance. Table 2 shows that the average number for adult learners' student satisfaction is above 4.50, indicating a high degree of student satisfaction.

Table 1. Average Number and Standard Deviation of Teachers' Performance in Adult Education Institutions.

Items of Teachers' Performance in Adult Education Institutions	Average Number	Standard Deviation	Number of Questions
Teaching Enthusiasm	4.63	0.56	5
Teacher-Student Interaction	4.67	0.58	5
Teaching Activities	4.66	0.55	5
Teaching Assessment	4.62	0.59	5
Character and Conduct	4.67	0.55	5
Overall Performance	4.65	0.56	25

N=674

Table 2. Average Number and Standard Deviation of Adult Learners' Student Satisfaction.

Standard Deviation of Adult Learners' student satisfaction	Average Number	Standard Deviation	Number of Questions
Teaching Environment	4.58	0.61	5
Teaching Process	4.65	0.57	5
Ability Promotion	4.61	0.59	5
Learning Support	4.58	0.61	5
Willingness to Share	4.65	0.60	5
Overall student satisfaction	4.61	0.59	25

N=674

5.3 Variance analysis of teachers' occupational performance and instructional satisfaction in adult education institutions with social background variables

5.3.1 Variance analysis on gender

Comparing between males' and females' occupational performance and student satisfaction in adult education institutions with the T test shows that they have significant differences in satisfaction about teaching enthusiasm ($T=2.44$, $P=0.01$), teacher-student interaction ($T=2.75$, $P=0.01$), teaching activities ($T=2.06$, $P=0.04$), teaching assessment ($T=2.29$, $P=0.02$), character and conduct ($T=2.45$, $P=0.01$), and overall performance of teachers ($T=2.52$, $P=0.01$), with males having a higher average than females for each factor. There are also differences in ability promotion ($T=2.12$, $P=0.03$), learning support ($T=2.26$, $P=0.02$), and overall student satisfaction ($T=2.01$, $P=0.04$), with males having a higher average than females for each factor.

5.3.2 Variance analysis on age

Using One-way ANOVA to compare student satisfaction of different age groups in adult education institutions, the statistics suggest that there are significant differences among different age groups in their feelings for teaching enthusiasm ($F=2.52$, $P=0.03$), teacher-student interaction ($F=3.04$, $P=0.01$),

and teaching assessment ($F=2.32$, $P=0.04$). Further multiple comparisons and analysis show that the age group from 41 to 60 has profound feelings about teaching enthusiasm, teacher-student interaction, teaching assessment, and other performances and has the highest average among all the age groups, indicating that this age group has a better cognitive feeling in teachers' occupational performance.

After further multiple comparisons and analysis on different cognitions of student satisfaction about ability promotion ($F=2.52$, $P=0.04$), learning support ($F=2.30$, $P=0.04$), and willingness to share ($F=3.04$, $P=0.01$), it is found that learners aged between 41 and 60 have the deepest feelings for ability promotion, learning support, and willingness to share, and that they also have a higher average in each factor than any other age groups, indicating that learners of this age group have a better cognitive feeling in student satisfaction.

5.3.3 Variance analysis on educational background

Using One-way ANOVA to compare student satisfaction of learners in adult education institutions with different educational background, the statistics suggest that there are significant differences in their feelings for teaching enthusiasm ($F=2.50$, $P=0.03$) and teacher-student interaction ($F=2.42$, $P=0.03$). Further multiple comparisons and analysis show that graduates from junior high school and primary school have profound feelings about teaching enthusiasm and teacher-student interaction, and that they have a higher average than graduates of other educational levels, indicating that graduates from junior high school and primary school have a better cognitive feeling in teachers' occupational performance.

After further multiple comparisons and analysis on different cognitions of student satisfaction about ability promotion ($F=2.52$, $P=0.04$) and willingness to share ($F=3.02$, $P=0.02$), it is found that graduates from junior high school and primary school have the deepest feelings for ability promotion and willingness to share, and that they also have a higher average in each factor than any other graduate groups, indicating that graduates from junior high school and primary school have a better cognitive feeling in student satisfaction.

5.3.4 Variance analysis on occupation

Using One-way ANOVA to compare student satisfaction of learners in adult education institutions with different occupations, the statistics suggest that there are significant differences in their feelings for teaching enthusiasm ($F=4.63$, $P=0.001$), teacher-student interaction ($F=2.92$, $P=0.02$), teaching activities ($F=4.41$, $P=0.002$), teaching assessment ($F=4.28$, $P=0.002$), character and conduct ($F=3.05$, $P=0.02$), and teachers' performance ($F=4.04$, $P=0.003$). Further multiple comparisons and analysis show that learners from the manufacturing industry and civil servants (including soldiers, government workers, teachers, police, firefighters, etc.) have a significantly higher average than learners working in information technology industry in teaching enthusiasm and teaching assessment. Learners from the manufacturing industry have a significantly higher average than learners working in the information technology industry in teaching activities and teachers' overall performance. Therefore, learners working in the information technology industry have a lower satisfaction about teachers' occupational performance in adult education institutions.

After further multiple comparisons and analysis on different cognitions of student satisfaction about teaching environment ($F=6.36$, $P=0.000$), teaching process ($F=5.54$, $P=0.000$), learning support ($F=4.93$, $P=0.001$), willingness to share ($F=4.17$, $P=0.002$), and overall student satisfaction ($F=4.91$, $P=0.001$), it is found that learners from the manufacturing industry and civil servants have the deepest feelings for teaching environment, teaching process, learning support, willingness to share, and overall student satisfaction, and that they also have a higher average in each factor than learners from the industrial and commercial services and information technology industry. The results also indicate that learners from the manufacturing industry and civil servants have a higher student satisfaction, while learners from the industrial and commercial services and information technology industry have a lower satisfaction.

5.3.5 Variance analysis on positions

Using One-way ANOVA to compare student satisfaction of adult learners in different positions, the statistics suggest that there are significant differences in their feelings for teaching enthusiasm ($F=2.52$, $P=0.04$), teaching activities ($F=2.42$, $P=0.04$), and teachers' overall performance ($F=2.41$, $P=0.04$). Further multiple comparisons and analysis show that department managers and heads of their company have a higher average in teaching enthusiasm, teaching activities, and teachers' overall performance than average staff, indicating that the average staff have less profound feelings about teachers' occupational performance.

After further multiple comparisons and analysis on different cognitions about teaching environment ($F=2.52$, $P=0.04$), learning support ($F=2.42$, $P=0.04$), willingness to share ($F=2.52$, $P=0.04$), and overall student satisfaction ($F=2.50$, $P=0.04$), it is found that department managers and the heads of their company have a significantly higher average than the average staff in teaching environment and willingness to share the deepest feelings for ability promotion, learning support, and willingness to share. This indicates that the average staff have lower cognition about student satisfaction.

5.3.6 Variance analysis on organization history

Using One-way ANOVA to compare feelings of adult learners working in organizations with different history about teachers' performance and student satisfaction different positions, the statistics suggest that there are significant differences in their feelings for teaching enthusiasm ($F=3.15$, $P=0.03$), teacher-student interaction ($F=4.25$, $P=0.006$), teaching activities ($F=2.76$, $P=0.04$), teaching assessment ($F=2.86$, $P=0.04$), and teachers' overall performance ($F=3.15$, $P=0.03$). Further multiple comparisons and analysis show that learners from organizations with a history above 21 years have an obviously higher average than learners from organizations with a history of less than 5 years in teaching enthusiasm, teacher-student interaction, and teachers' overall performance. This indicates that learners from organizations with a history of less than 5 years have less profound feelings about teachers' occupational performance.

After further multiple comparisons and analysis on different cognition about teaching environment ($F=6.68$, $P=0.000$) and overall student satisfaction ($F=3.06$, $P=0.04$), it is found that learners from organizations with a history between 6 and 10 years and a history above 21 have the most profound feelings about teaching environment and overall student satisfaction, and that they have a higher average than learners from organizations with a history between 11 and 20 years, indicating that learners from organizations with a history between 11 and 20 years have lower cognition about student satisfaction.

5.3.7 Variance analysis on organization scale

Using One-way ANOVA to compare feelings of adult learners working in organizations with different scale about teachers' performance and student satisfaction of different positions, the statistics suggest that there are significant differences in their feelings for teaching enthusiasm ($F=2.82$, $P=0.04$), teacher-student interaction ($F=5.04$, $P=0.002$), teaching activities ($F=2.67$, $P=0.04$), character and conduct ($F=2.88$, $P=0.04$), and teachers' overall performance ($F=3.14$, $P=0.03$). Further multiple comparisons and analysis show that learners from organizations with more than 201 employees have an obviously higher average than learners from organizations with less than 50 employees and organizations with employee numbers between 101 and 200 in teacher-student interaction and teachers' overall performance. This indicates that learners from small- and medium-sized organizations with less than 50 employees and organizations with employee numbers between 101 and 200 have less profound feelings about teachers' occupational performance.

After further multiple comparisons and analysis on different cognitions about learning support ($F=3.14$, $P=0.04$) and overall student satisfaction ($F=3.06$, $P=0.04$), it is found that there is no

significant difference in cognition about student satisfaction among learners from organizations with different scales.

5.4 Analysis on item management performance and organizational performance

After Person product-moment correlation analysis, Table 3 lists the statistics of the correlation coefficients of the factors in teachers' occupational performance and learners' student satisfaction in adult education institutions. The results indicate that there is a highly positive correlation (correlation coefficients are all above 70) between factors and the overall condition for teachers' occupational performance and learners' student satisfaction - that is, the better teachers' occupational performance is, the higher the degree of student satisfaction is.

Table 3. Person Product-Moment Correlation Analysis on Project Management Performance and Organizational Performance.

Correlation Coefficients		Factors of student satisfaction					
		Teaching Environment	Teaching Process	Ability Promotion	Learning Support	Willingness to Share	Student Satisfaction
Factors of Teachers' Performance in Adult Education Institutions	Teaching Enthusiasm	.733***	.828***	.780***	.818***	.769***	.837***
	Teacher-Student Interaction	.733***	.793***	.762***	.801***	.714***	.811***
	Teaching Activities	.746***	.817***	.767***	.797***	.737***	.824***
	Teaching Assessment	.771***	.847***	.795***	.827***	.742***	.849***
	Character and Conduct	.758***	.835***	.758***	.780***	.738***	.825***
	Teachers' Performance	.787***	.867***	.813***	.847***	.778***	.872***

***p<.001 N=674

5.5 Regression analysis on the predictive power of teachers' occupational performance on student satisfaction

5.5.1 Predictive power analysis on teaching environment

Table 4. Predictive Power Analysis of Teachers' Performance Factors on Teaching Environment.

	Unstandardized Coefficient		Standardized Coefficient	t	Significance	Multicollinearity Statistics	
	Estimated value of B	Standard error	Beta distribution			Tolerance	VIF
(Constant)	0.38	0.08		4.10	0.00		
Teachers' Performance	0.28	0.06	0.28	5.68	0.00	0.31	3.15
Teacher-Student Interaction	0.27	0.05	0.23	3.65	0.00	0.18	4.14
Dependent variable: Teaching Environment							
Rsquare :0.63							

This study used step-wise multiple regression to analyze the effects of teachers' performance factors on teaching environment. As shown in Table 4, with teaching environment as the criterion variable, teacher-student interaction ($T=5.68$, $P=0.00$) and overall teachers' performance ($T=3.65$, $P=0.00$) reached a significant level ($T=3.44$, $P=0.00$; $T=5.46$, $P=0.00$). Teacher-student interaction exerts the largest effect on teaching environment, and the next is overall teachers' performance. The standardized regression coefficients of the two independent variables are positive, signifying that they have positive effects on teaching environment. In the aspect of tolerance, the variance inflation factor values are between 2 and 3, which are under 5 and less than the evaluation index value of 10, indicating little multicollinearity of regression equation.

5.5.2 Predictive power analysis on teaching process

This study used step-wise multiple regression to analyze the effects of teachers' performance factors on teaching process. As shown in Table 5, with teaching process as the criterion variable, among overall teachers' performance ($T=5.67$, $P=0.00$), teacher-student interaction ($T=3.64$; $P=0.00$), and teaching activities ($T=3.58$, $P=0.00$), overall teachers' performance exerts the largest effect on teaching process, and the next is the teacher-student interaction. The standardized regression coefficients of the three independent variables are positive, signifying that they have positive effects on teaching process. In the aspect of tolerance, the variance inflation factor values are between 2 and 3, which are under 5 and less than the evaluation index value of 10, indicating little multicollinearity of regression equation.

Table 5. Predictive Power Analysis of Teachers' Performance Factors on Teaching Process.

	Unstandardized Coefficient		Standardized Coefficient	t	Significance	Multicollinearity Statistics	
	Estimated value of B	Standard error	Beta distribution			Tolerance	VIF
(Constant)	0.38	0.09		4.20	0.00		
Teachers' Performance	0.28	0.05	0.28	5.67	0.00	0.32	3.16
Teacher-Student Interaction	0.27	0.06	0.23	3.64	0.00	0.20	4.15
Teaching Activities	0.21	0.04	0.21	3.58	0.00	0.20	4.16
Dependent variable: Teaching Process							
Rsquare :0.66							

5.5.3 Predictive power analysis on ability promotion

This study used step-wise multiple regression to analyze the effects of teachers' performance factors on ability promotion. As shown in Table 6, with ability promotion as the criterion variable, among overall teachers' performance ($T=5.85$, $P=0.00$), teacher-student interaction ($T=3.85$; $P=0.00$), teaching activities ($T=3.58$, $P=0.00$), and character and conduct ($T=3.21$, $P=0.00$), overall teachers' performance exerts the largest effects on ability promotion, and the next is the teacher-student interaction. The standardized regression coefficients of the four independent variables are positive, signifying that they have positive effects on ability promotion. In the aspect of tolerance, the variance inflation factor values are between 2 and 3, which are under 5 and less than the evaluation index value of 10, indicating little multicollinearity of regression equation.

Table 6. Predictive Power Analysis of Teachers' Performance Factors on Ability Promotion.

	Unstandardized Coefficient		Standardized Coefficient	t	Significance	Multicollinearity Statistics	
	Estimated value of B	Standard error	Beta distribution			Tolerance	VIF
(Constant)	0.38	0.08		4.00	0.00		
Teachers' Performance	0.33	0.05	0.28	5.85	0.00	0.32	3.16
Teacher-Student Interaction	0.28	0.06	0.23	3.85	0.00	0.23	4.15
Teaching Activities	0.22	0.04	0.21	3.58	0.00	0.21	4.17
Character and Conduct	0.21	0.04	0.21	3.21	0.00	0.20	4.18
Dependent variable: Ability Promotion							
Rsquare :0.67							

5.5.4 Predictive power analysis on learning support

This study used step-wise multiple regression to analyze the effects of teachers' performance factors on learning support. As shown in Table 7, with learning support as the criterion variable, among overall teachers' performance ($T=3.55$, $P=0.00$), teaching enthusiasm ($T=4.45$; $P=0.00$), and teaching assessment ($T=3.79$, $P=0.00$), teaching enthusiasm exerts the largest effects on learning support, and the next is overall teachers' performance. The standardized regression coefficients of the three independent variables are positive, signifying that they have positive effects on ability promotion. In the aspect of tolerance, the variance inflation factor values are between 2 and 3, which are under 5 and less than the evaluation index value of 10, indicating little multicollinearity of regression equation.

Table 7. Predictive Power Analysis of Teachers' Performance Factors on Learning Support.

	Unstandardized Coefficient		Standardized Coefficient	t	Significance	Multicollinearity Statistics	
	Estimated value of B	Standard error	Beta distribution			Tolerance	VIF
(Constant)	0.38	0.09		4.63	0.00		
Teachers' Performance	0.28	0.05	0.23	3.55	0.00	0.23	4.12
Teaching Enthusiasm	0.33	0.06	0.28	4.45	0.00	0.21	3.15
Teaching Assessment	0.22	0.04	0.21	3.79	0.00	0.24	4.13
Dependent variable: Learning Support							
Rsquare :0.70							

5.5.5 Predictive power analysis on willingness to share

This study used step-wise multiple regression to analyze the effects of teachers' performance factors on willingness to share. As shown in Table 8, with willingness to share as the criterion variable, among overall teachers' performance ($T=7.39$, $P=0.00$), teacher-student interaction ($T=4.11$, $P=0.00$), and teaching enthusiasm ($T=3.88$; $P=0.00$), overall teachers' performance exerts the largest effects on willingness to share, and the next is teacher-student interaction. The standardized regression

coefficients of the three independent variables are positive, signifying that they have positive effects on willingness to share. In the aspect of tolerance, the variance inflation factor values are between 2 and 3, which are under 5 and less than the evaluation index value of 10, indicating little multicollinearity of regression equation.

Table 8. Predictive Power Analysis of Teachers' Performance Factors on Willingness to Share.

	Unstandardized Coefficient		Standardized Coefficient	t	Significance	Multicollinearity Statistics	
	Estimated value of B	Standard error	Beta distribution			Tolerance	VIF
(Constant)	0.38	0.08		4.70	0.00		
Teachers' Performance	0.33	0.06	0.26	7.39	0.00	0.22	3.12
Teacher-Student Interaction	0.24	0.05	0.23	4.11	0.00	0.23	4.11
Teaching Enthusiasm	0.22	0.04	0.21	3.88	0.00	0.24	4.13
Dependent variable: Willingness to Share							
Rsquare :0.63							

5.5.6 Predictive power analysis on overall student satisfaction

This study used step-wise multiple regression to analyze the effects of teachers' performance factors on overall student satisfaction. As shown in Table 9, with overall student satisfaction as the criterion variable, among overall teachers' performance (T=9.71, P=0.00), teacher-student interaction (T=5.85, P=0.00), and teaching activities (T=3.87; P=0.00), overall teachers' performance exerts the largest effects on overall student satisfaction, and the next is teacher-student interaction. The standardized regression coefficients of the three independent variables are positive, signifying that they have positive effects on overall student satisfaction. In the aspect of tolerance, the variance inflation factor values are between 2 and 3, which are under 5 and less than the evaluation index value of 10, indicating little multicollinearity of regression equation.

Table 9. Predictive Power Analysis of Teachers' Performance Factors on Overall Student Satisfaction.

	Unstandardized Coefficient		Standardized Coefficient	t	Significance	Multicollinearity Statistics	
	Estimated value of B	Standard error	Beta distribution			Tolerance	VIF
(Constant)	0.37	0.08		4.22	0.00		
Teachers' Performance	0.34	0.07	0.26	9.71	0.00	0.22	3.12
Teaching Enthusiasm	0.27	0.05	0.25	5.85	0.00	0.23	3.32
Teaching Assessment	0.22	0.04	0.21	3.87	0.00	0.24	4.13
Dependent variable: overall student satisfaction							
Rsquare :0.73							

6 Conclusion and suggestions

According to the results herein, in terms of different social variables for teachers' performance in adult education institutions, this study suggests that teachers should pay attention to female learners, young

and senior learners, learners with medium and higher degrees, learners working in the industrial and commercial services industry and information technology industry, learners working in organizations, learners working in organizations with a shorter history, and learners working in small- and medium-sized organizations. Teachers should learn about students' learning needs and objectives, design adaptive curriculum and teaching activities, and strengthen teaching enthusiasm, teacher-student interaction, teaching activities, teaching assessment, and character and conduct, so as to improve student satisfaction over the teaching environment, teaching process, ability promotion, learning support, and willingness to share. There is an obvious positive correlation between teachers' occupational performance and student satisfaction in adult education institutions, while at the same time overall teachers' occupational performance exerts positive predictive power on all aspects of student satisfaction. Therefore, it is indeed a challenge for teachers in adult education institutions to teach adult learners from various and complex social backgrounds and to effectively tailor the teaching methods to meet each learner's learning needs.

This study believes that teachers in adult education institutions can play a role like a "ferryman", encouraging, assisting, and leading adult learners to steer their ship of learning to become a competent captain roaming in the sea of knowledge. Teachers should instruct adult learners to set up learning objectives in a self-directed manner and to obtain the knowledge and skills that they need. In conclusion, teachers in adult education institutions should participate in learning activities to improve their competency, strengthen performance analysis and application, train design patterns, improve teaching methods, strengthen human resource development, study adult education theories, principles of learning outcomes assessment, and information and knowledge on industry overview, train skills in needs analysis, motivation and reward theory teaching, teacher-student interaction, effective listening and communication, and problem analysis and solving, improve their ability at creating a teaching atmosphere, and lastly compile and present teaching materials and information feedback. Teachers in adult education institutions should develop enthusiasm for teaching, patience, willingness to share, positive thinking, and inclusiveness, display good performance in enthusiasm, interaction with students, teaching assessment, and character and conduct, and adopt adaptive and diverse teaching methods, so as to improve adult learners' satisfaction towards the teaching environment, teaching process, ability promotion, learning support, and willingness to share and to maintain a sustainable management of adult education institutions and achieve the educational objective of lifelong learning.

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