

Research on Influencing Factors of Practice Effect in Educational Practice Based on the Theory of Planned Behavior

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Abstract

This research investigates and analyzes students' own feelings during educational practice, and explores the relationship among variables such as attitude, subjective norm, perceived behavioral control, participation intention, and practice effect used PLS-SEM, based on the Theory of Planned Behavior. A survey was conducted upon 200 students from three universities, were selected based on purposive and random cluster sampling techniques. Research findings showed that attitude, subjective norm, perceived behavioral control, and participation intention have positive and significant effect on practice effect. Besides, attitude, subjective norm, and perceived behavioral control also showed positive and significant effect on participation intention. Furthermore, one sub-dimension of participation intention showed mediating effect for the relationship between attitude on the practice effect, and another sub-dimension of participation intention showed mediating effect in the relationship between subjective norm and practice effect, as well as perceived behavioral control and practice effect in educational practice. Through the in-depth research of the practice effect in educational practice, it can provide scientific basis for the reform and development of teacher education, so as to better train excellent teachers to meet the needs of modern education.

Keyword: Theory of Planned Behavior, Practice Effect, Educational Practice, PLS-SEM

Introduction

Educational practice has always been an important part of the teaching plan in universities, which is not only the basic embodiment of the principle of combining theory with practice, but also an important means to achieve the existing training goals of schools and meet social needs (Li, 2016). In recent years, with the further deepening of the reform of the teacher education system, the effect of students' educational practice is not obvious, which is not conducive to their personal confidence, learning motivation and career development, specifically as follows: students cannot get enough practical experience and ability

improvement, and when they encounter various challenges and difficulties that cannot be properly solved, students may feel frustrated and inferior, which affects their self-confidence. If the work content during the internship is not consistent with students' expectations, students may feel disappointed and frustrated, and then have doubts about their major, which will affect their learning enthusiasm and career development.

As the main body in the process of educational practice, students are the direct participants and beneficiaries. Therefore, it is necessary to find out the current situation and existing problems in educational practice from the perspective of students, according to their personal characteristics, practice environment, teaching state, etc. In terms of educational research, Cheon et al. (2012) investigated students' cognition of mobile learning in higher education through TPB (Ajzen, 1991) and pointed out that attitudes, subjective norm and behavioral control have a positive impact on their willingness to adopt mobile learning, providing valuable inspiration for improving students' acceptance of mobile learning. Dunn et al. (2018) provides support for the adequacy of TPB in predicting and understanding teachers' behavioral intentions for professional learning, which can be significantly predicted through PBC, subjective norm, and attitudes toward behavior. Lin et al. (2021) explored the current situation of students' knowledge sharing behaviors using digital learning platforms through TPB, and found that learning attitude and perceived behavior control had a significant impact on sustained intention. Therefore, the application of the TPB can help researcher better understand students' behavior and decision-making process, develop more effective teaching strategies and education plans, and improve students' learning effect and behavior performance. Consequently, the present research advances the structural model (showed in Figure 1) and corresponding hypotheses (showed in Figure 2):

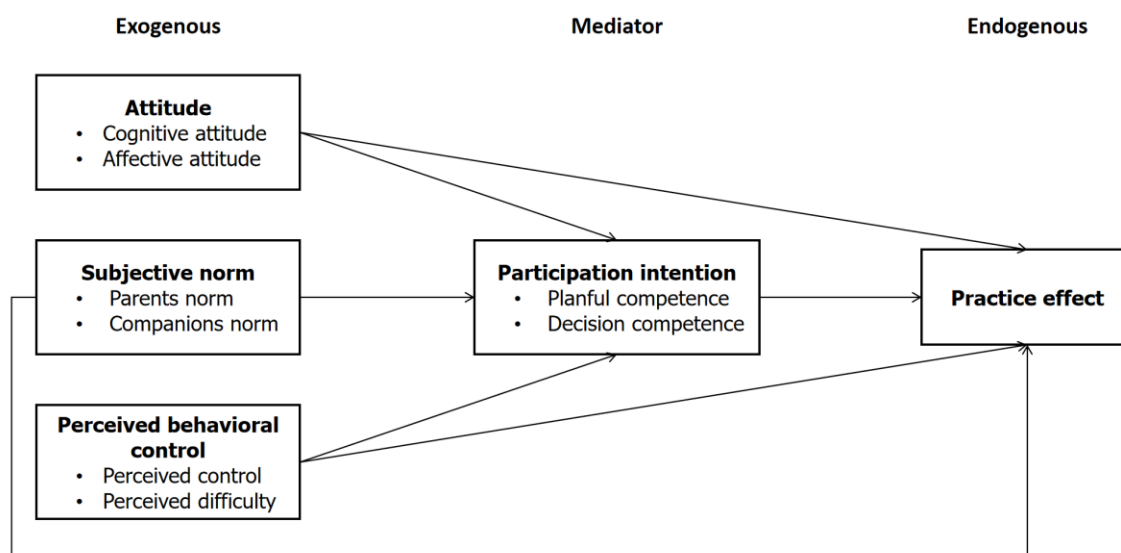


Figure 1 Conceptual framework for the structural model

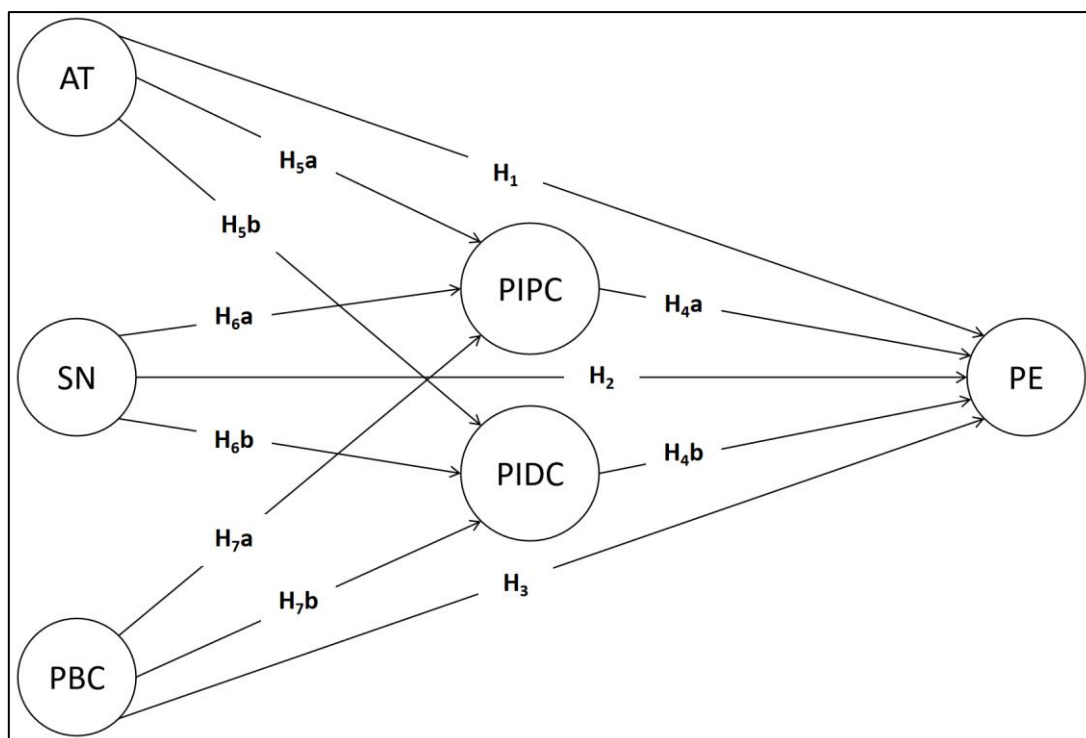


Figure 2 Proposed structural model

Note: AT = Attitude; SN = Subjective Norm; PBC = Perceived Behavioral Control; PIPC = Planful Competence, PIDC = Decision Competence, SE = Self-efficacy, PE = Practice Effect.

H₁: The attitude has a positive and significant effect on practice effect in educational practice.

H₂: The subjective norm has a positive and significant effect on practice effect in educational practice.

H₃: The perceived behavior control has a positive and significant effect on practice effect in educational practice.

H₄: The participation intention has a positive and significant effect on practice effect in educational practice.

H₅: The attitude has a positive and significant effect on participation intention in educational practice.

H₆: The subjective norm has a positive and significant effect on participation intention in educational practice.

H₇: The perceived behavior control has a positive and significant effect on participation intention in educational practice.

H₈: The participation intention mediates the relationship between attitude and practice effect in educational practice.

H₉: The participation intention mediates the relationship between subjective norm and practice effect in educational practice.

H₁₀: The participation intention mediates the relationship between perceived behavior control and practice effect in educational practice.

Literature Review

Practice effect

Although most students do not specify what effect they want to achieve in the practice process, they always have good expectations for the educational practice. Previous researches have shown that practice effect is affected by the internal and external factors, the internal factors include students' teaching ability, practice attitude, professional identity and personal quality, which have the potential to affect the effect of practice, while the external factors include the organizational form of practice, practice conditions, practice time, the ability of teachers and the students in the practice school (Zhen, et al., 2012; Wei & Shao, 2020; Yu, 2015; Wu, 2018; Wang & Jiang, 2019; Xie, et al., 2022;). In the current research, based on the actual research in educational practice, it is believed that the practice effect is the students' basic ability to engage in education and teaching through personal active learning and the promotion of external environment.

Attitude

As a prefactor of behavioral intention, attitude is the least controversial component in the TPB (Armitage & Conner, 2001), and is defined as a universal, persistent, and persistent evaluation of a person, place, or object (Solomon et al., 2014). Attitude is also a common and important concept in the study of social behavior, which is widely used in the related research of economy, management and education. Researchers have found that an individual's attitude toward things will affect their behavioral intention in relevant researches (Huang et al., 2017; Li et al., 2017; Fang & Zhai, 2018; Gardner, 2000; Wang & Yang, 2021; Li et al., 2022). The research on attitude involves a wide range of fields, research angles are more diverse, and its application has been further expanded. Attitude can be described as the degree of an individual's favorable or unfavorable evaluation of behavior, describes the psychological tendency expressed through positive or negative evaluation, and can be an effective predictor of educational practice. Therefore, in the current research, one of the goals is explicitly focused on the attitudes of students towards educational practices, and specifically refer to the relatively stable cognitive tendency and emotional experience of students in educational practice, include cognitive attitude and affective attitude.

Subjective Norm

Subjective norm is one of the important variables in social psychology. From the perspective of psychology, the behavior and attitude of the central figure of the group or most of the group members will psychologically exert a certain degree of pressure on the members of the group, and then have an impact on the behavior of the members. In the areas of consumption, education, diet, sleep and business competition, many scholars have found that subjective norm can influence people's actual behavior (Ybarra & Trafimow, 1998; Torben et al., 2004; Kaushik et al., 2018; Pozzi et al., 2021; Kervenoael et al., 2021; Shirvani et al., 2021). Under the cultural background of China's collective society, it is meaningful to research the influence of individual subjective norm on their behavioral intention. For educational practice, a prescribed learning behavior, and specific student groups, the subjective norm refer to the influence of significant others' attitudes toward educational practice on students' educational practice. And the significant others here refer to students' parents and companions.

Perceived Behavioral Control

Perceived behavioral control (PBC) is an important concept in psychology and behavioral science, especially within the TPB. At the beginning of the TPB, Ajzen & Madden (1986) defined perceived behavioral control as "the possible degree of difficulty that an individual perceives to perform a certain behavior." Chan & Fishbein (1993) pointed out in their research that "whether it is within the control" and "whether it is difficult or easy" reflect different concepts of perceived behavioral control. Research in fields such as consumption, management, innovation, and learning show that PBC can significantly affect the formation of individual behavior intentions and behaviors (Kefu, 2013; Sun et al., 2016; Desmidt et al., 2021; Majeed et al., 2021). In this research, PBC refers to the perception of the controllable scope and the ease or difficulty of participation in educational practice. This perception may impact students' participation intentions and the effectiveness of their practice, and it includes both perceived control and perceived difficulty (Trafimow et al., 2002).

Participation Intention

The idea that behavior depends heavily on intention is by no means new. Behavioral intention is a tendency that an individual wants to take a specific behavior, which has a certain degree of predictive effect on the individual's behavior. In fact, behavioral intention based the TPB have been widely used to research teacher education, e.g. teachers' decision making using educational technology (Cheon et al., 2012), teachers' interpersonal behavior in the classroom (Pelletier & Sharp, 2009), predicting science teachers' intentions (Zint, 2002), and the influence of teacher behavior on students' learning outcomes (Hein, 2012). As a practical teaching activity, educational practice requires students to have solid theoretical knowledge and basic practical experience, as well as good communication and cooperation skills. Researches found that behavioral intention has a great impact on learning behavior, and strong behavioral intention is the subjective reason for undergraduate' more effective learning behavior. Students may show an active learning attitude, actively participate in various learning activities, and reflect on their learning results in time, which is very important for improving learning ability and learning effect (Xu, 2014; Feng et al., 2023). Behavioral intention is the possibility of influencing an individual's decision to undertake or whether to undertake a particular future action. In the current research, participation intention can accurately predict students' actual behavior in educational practice, refers to the playful competence and decision competence.

Based on the TPB (Ajzen, 1991), through the research of the influencing factors of practice effect in educational practice, mainly explore the relationship of attitudes, subjective norm, perceived behavioral control, participation intention, self-efficacy, and practice effect, and provides targeted suggestions for universities and students to further improve the effectiveness of educational management and education results.

Research Methodology

Samples

The study focuses on undergraduates who have attended educational practice from three universities in Shaanxi Province, China. Initially, 60 students were sampled to validate the questionnaire. Subsequently, 200 students were selected through purposive sampling and random sampling, who have finished the educational practice. The sample comprised 151 males and 49 females.

Table 1

Demographic information of participants (n = 200)

| | | |
|------------|--------|-----|
| Gender | Male | 151 |
| | Female | 49 |
| University | SNU | 65 |
| | XYNU | 80 |
| | PHU | 55 |

Instruments

Informed by prior studies, this research project employs an 11-step Semantic Differential Scale (from 0 = strongly disagree to 10 = strongly agree). Unlike the Likert scale, the 11-point semantic difference scale performs better than the 5-point and 7-point Likert scales in terms of unidimensionality and normality, providing more sensitive perception and higher reliability (Alwin, 1997; Leung, 2011). In addition, the survey was conducted for intellectually sound and sensitive university students who were capable of self-rating scores using the 11-point semantic difference scale (Gulo, 1966).

The specific instruments were composed of five sub-scales, with a total of 33 items, including 9 items of attitude, 5 items of subjective norm, 5 items of perceived behavioral control, 6 items of participation intention, and 8 items of practice effect, which are comprehensively presented in Table 2.

Table 2

Research Instrumentation

| NO. | Items | Reference |
|--|---|--------------------|
| Attitude | | |
| Dimension 1: Cognitive attitude | | |
| 1. | Educational practice is useful for my career. | Abun et al. (2021) |
| 2. | Educational practice is important for enriching my knowledge. | |
| 3. | Educational practice should be indispensable in my professional training. | |
| 4. | Educational practice should be arranged to all students. | |
| 5. | Educational practice is useful for every student. | |
| Dimension 2: Affective attitude | | |
| 6. | Educational practice is interesting. | Abun et al. (2021) |
| 7. | Educational practice is enjoyable. | |
| 8. | Educational practice excites me. | |
| 9. | Educational practice gives me a great feeling. | |
| Subjective Norm | | |
| Dimension 1: Parents norm | | |
| 1. | My parents believe it's important for me to attend educational practice. | PISA2012 |
| 2. | My parents believe that educational practice is important for my career. | |

| | | |
|--|---|-----------------------|
| 3. | My parents like educational practice. | |
| Dimension 2: Companions' norm | | |
| 4. | Most of my friends do well in educational practice. | PISA2012 |
| 5. | Most of my friends work hard at educational practice. | |
| Perceived Control perceived | | |
| Dimension 1: Perceived control | | |
| 1.* | My plans hardly ever work out, so planning only makes me unhappy. | You et al. (2011) |
| 2. | When I make plans, I am almost certain I can make them work. | |
| Dimension 2: Perceived difficulty | | |
| 3.* | The educational practice is very difficult to finish | Wall et al. (2014) |
| 4.* | The educational practice is very complicated. | |
| 5.* | The educational practice is difficult for me | |
| Participation intention | | |
| Dimension 1: Planful competence | | |
| 1. | I take a lot of care before choosing. | Code (2020) |
| 2. | I try to be clear about my objectives before choosing. | |
| 3. | I like to consider all of the alternatives. | |
| Dimension 2: Decision competence | | |
| 4. | I feel confident about my ability to make decisions. | Code (2020) |
| 5. | I think that I am a good decision maker. | |
| 6. | The decisions I make turn out well. | |
| Practice effect | | |
| 1. | I can effectively predict, prevent and control classroom risks. | Meng Han (2022) |
| 2. | I have the ability to guide the school sports club activities. | |
| 3. | I can master and use various teaching methods and skills to form my own teaching style. | |
| 4. | I can coordinate the order of students' entry and exit in group activities such as recess practice and sports meeting. | |
| 5. | I have the knowledge and ability to deal with emergencies in classroom teaching quickly. | |
| 6. | I have the ability to assist PE teachers in planning and organizing group activities such as recess exercises, big recess activities and sports meetings. | |
| 7. | I can master the timing and skill of whistling. | |
| 8. | I can manage classroom teaching effectively and maintain orderly physical education classroom order. | |

Note: * Negative item

Pilot study

In the pilot study, SPSS 29.0 software was utilized to carry out exploratory factor analysis (EFA) to improve the reliability and validity of the questionnaire and to remove unnecessary items. The specific criteria were as follows: explained cumulative variance ($\geq 50\%$), sphericity Bartlett's test ($p < 0.500$), Kaiser-Meyer-Olkin test (> 0.600), commonality (≥ 0.300), and eigenvalues (≥ 1.000); (Barrett and Morgan, 2005; Hair et al., 2016; Pallant, 2011). Items with

Cronbach's alpha lower than 0.600 were deleted (Hair et al., 2014, 2017). Upon completion of this process, the preliminary findings suggested that the questionnaire displayed strong reliability and validity, with every retained item satisfying these stipulated conditions. The outcome for each individual scale has been compiled and presented in Table 3.

Table 3
Results of Pilot Study

| Scale | Cronbach's alpha | KMO | Sphericity Bartlett test | Cumulative variance explained | The smallest items communalities | Eigenvalues |
|----------------------|------------------|-------|--------------------------|-------------------------------|----------------------------------|-------------|
| Cognitive attitude | 0.868 | 0.839 | 0.000 | 62% | 0.557 | ≥ 1.00 |
| Affective attitude | 0.845 | 0.827 | 0.000 | 71% | 0.651 | ≥ 1.00 |
| Parents norm | 0.786 | 0.648 | 0.000 | 64% | 0.557 | ≥ 1.00 |
| Companions norm | 0.638 | 0.637 | 0.010 | 71% | 0.679 | ≥ 1.00 |
| Perceived control | 0.695 | 0.692 | 0.000 | 83% | 0.834 | ≥ 1.00 |
| Perceived difficulty | 0.806 | 0.668 | 0.000 | 75% | 0.676 | ≥ 1.00 |
| Planful competence | 0.790 | 0.712 | 0.000 | 73% | 0.704 | ≥ 1.00 |
| Decision competence | 0.784 | 0.693 | 0.000 | 73% | 0.653 | ≥ 1.00 |
| Practice effect | 0.911 | 0.901 | 0.000 | 65% | 0.522 | ≥ 1.00 |

Data Collection and Data Analysis

In April 2023, a survey was conducted among all students using the online questionnaire survey platform (i.e., Sojump), following a thorough explanation by instructors. A total of 210 questionnaires were returned in the formal survey conducted, of which 200 were valid, resulting in a validity rate of 95%. To mitigate common method bias (CMB), researchers took preventive measures. Not only was the survey conducted anonymously, but the items were also randomized and attempts were made to obscure the intended meaning of each item as much as possible. Evidently, the outcomes show that structures exhibit validity in Table 3.

Data were analyzed using Partial Least Squares (PLS) with SmartPLS 4 software, and outliers were removed prior to analysis. To assess the structure and measurement model, the PLS method proposed by Hair et al. (2017) was used for structural equation modeling (SEM). Finally, following Hair et al. (2017), the standard PLS algorithm was applied with 5000 bootstraps to calculate the estimated significance levels for hypothesis testing.

Research Results

Measurement Model

Following the recommendations of Hair et al. (2017), a two-step approach was used in this study. The first step is to test and assess the convergent validity and reliability. Convergent validity is obtained when the model meets the following criterias: Firstly, the loadings for all variables should ideally equal or exceed 0.700 (Hair et al., 2014). However,

items below 0.70 should only be considered for removal from the weighing when removing them results in an increase in composite reliability, and items presence was lower than 0.70, whereas those with loadings below 0.400 were consistently discarded according to Hair et al. (2017). Secondly, the composite reliability exceeded the 0.700 threshold proposed by Gefen et al. (2000). Subsequently, the average variance extracted (AVE) should exceed 0.500 (Fornell and Larcker, 1981). Ultimately, after deleting items with loadings below 0.700, the constructed model met all the requirements, as shown in Table 4, Figure 3.

Table 4
Evaluation of Measurement Model

| Scale | Cronbach's alpha | Composite reliability (rho_a) | Composite reliability (rho_c) | Average variance extracted (AVE) |
|-------|------------------|-------------------------------|-------------------------------|----------------------------------|
| ATCA | 0.884 | 0.884 | 0.915 | 0.683 |
| ATAA | 0.854 | 0.855 | 0.901 | 0.695 |
| SNPN | 0.756 | 0.757 | 0.860 | 0.672 |
| SNCN | 0.669 | 0.670 | 0.858 | 0.751 |
| PBCPC | 0.770 | 0.773 | 0.897 | 0.813 |
| PBCPD | 0.828 | 0.829 | 0.897 | 0.744 |
| PIPC | 0.838 | 0.841 | 0.903 | 0.755 |
| PIDC | 0.824 | 0.837 | 0.894 | 0.738 |
| PE | 0.930 | 0.932 | 0.943 | 0.672 |

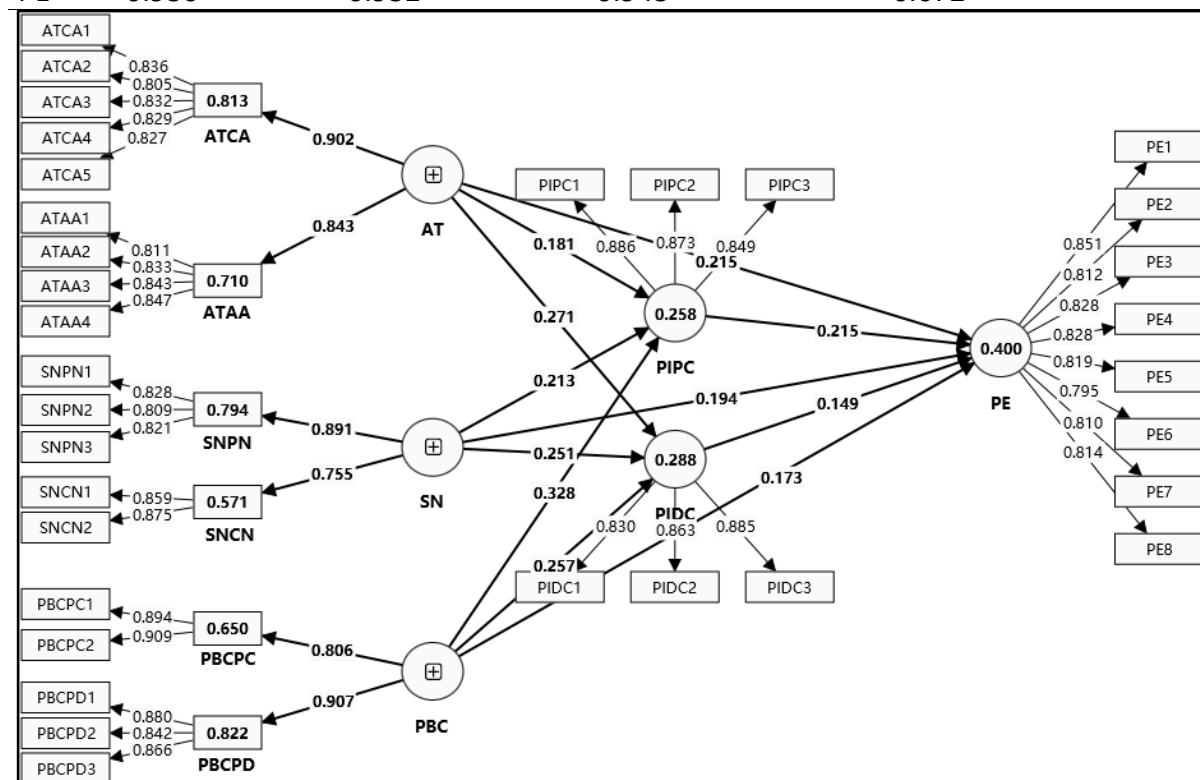


Figure 3 PLS-path analysis of path coefficients and R² values (n = 200).

Note: measurement model framework with AT, SN and PBC as second-order construct

Discriminant validity

In the follow-up phase, we used the Heterotrait-Monotrait Ratio (HTMT) criterion proposed by Henseler et al. (2015) to assess discriminant validity. As suggested by Kline

(2011), discriminant validity is considered established when the value is below the 0.90 threshold. In our research model, the HTMT values ranged from 0.114 to 0.601 (depicted in Table 5), indicating that discriminant validity was satisfied. The evaluations conducted validated the convergent validity, reliability, and discriminant validity of the model.

Table 5
Htmt Values

| | ATCA | ATAA | SNPN | SNCN | PBCPC | PBCPD | PIPC | PIDC | PE |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|
| ATCA | | | | | | | | | |
| ATAA | 0.605 | | | | | | | | |
| SNPN | 0.114 | 0.137 | | | | | | | |
| SNCN | 0.198 | 0.164 | 0.522 | | | | | | |
| PBCPC | 0.299 | 0.215 | 0.196 | 0.236 | | | | | |
| PBCPD | 0.211 | 0.314 | 0.119 | 0.219 | 0.601 | | | | |
| PIPC | 0.316 | 0.310 | 0.320 | 0.337 | 0.436 | 0.444 | | | |
| PIDC | 0.346 | 0.457 | 0.387 | 0.336 | 0.410 | 0.397 | 0.393 | | |
| PE | 0.431 | 0.371 | 0.381 | 0.386 | 0.473 | 0.380 | 0.520 | 0.487 | |

Structural Model

In the initial stage of hypothesis testing, the structural model was first assessed for covariance and all predictor constructs met the criteria, specifically, the variance inflation factor (VIF) ranged between 1.246 and 1.442, which exceed 1 but below 5, indicating very satisfactory reliability (Hair et al., 2017). Secondly, the results do not indicate multicollinearity issues and support formability, and the calculated weights for each dimension exceeded the suggested threshold of 0.100 as shown in Figure 3 (Hair et al., 2017). Next, as suggested by Hair et al. (2017), a bootstrap program with a resampling rate of 5000 was used to obtain Beta coefficients, p values, t values, and the corresponding bootstrap confidence intervals. The analytical process used the critical values for a one-tailed t test: 1.645 (significance level < 0.05), 2.327 (significance level < 0.01), and 3.092 (significance level < 0.001) as described by Hair et al. (2017). Table 6 and Table 7 show the results of significant effects and mediating effects. Therefore, hypotheses H1–H7 are supported.

Table 6
Significance Relevance For the Direct Effects

| Ha | Relationship | Path Coefficient (Standard β) | Std. Dev. | p Values | 95% Confidence Intervals | Effect Size, f^2 | Decision |
|-----------------|--------------|--------------------------------------|-----------|------------|--------------------------|--------------------|-----------|
| H ₁ | AT → PE | .228 | .075 | .002* | [0.077,0.368] | .063 | Supported |
| H ₂ | SN → PE | .203 | .079 | .010* | [0.046,0.351] | .046 | Supported |
| H ₃ | PBC → PE | .147 | .068 | .032* | [0.014,0.283] | .025 | Supported |
| H _{4a} | PIPC → PE | .208 | .079 | .009* | [0.055,0.365] | .057 | Supported |
| H _{4b} | PIDC → PE | .159 | .072 | .027* | [0.017,0.303] | .031 | Supported |
| H _{5a} | AT → PIPC | .181 | .084 | .030* | [0.018,0.342] | .040 | Supported |
| H _{5b} | AT → PIDC | .271 | .059 | .000** | [0.153,0.384] | .093 | Supported |
| H _{6a} | SN → PIPC | .213 | .066 | .001* | [0.082,0.342] | .052 | Supported |
| H _{6b} | SN → PIDC | .251 | .066 | .000** | [0.119,0.381] | .085 | Supported |
| H _{7a} | PBC → PIPC | .328 | .071 | .000** | [0.185,0.465] | .127 | Supported |
| H _{7b} | PBC → PIDC | .257 | .065 | .000** | [0.127,0.382] | .080 | Supported |

Note: *. This has met the significance level ($p < .05$); Bootstrapping (n=5000);
Ha=Alternative Hypothesis; AT= Attitude, SN= Subjective Norm, PBC= Perceived Behavioral Control, PIPC = Planful Competence, PIDC = Decision Competence, PE = Practice Effect.

Table 7
Bootstrapping Result for the Mediating Effects

| Ha | Relationship | Indirect Effect (Standard β) | Std. Error | t Values | p Values | 95% Confidence Intervals | Decision |
|------------------|--------------|-------------------------------------|------------|------------|------------|--------------------------|------------------------------|
| H _{8a} | AT→PIPC→PE | .038 | .022 | 1.746 | .081 | [0.002,0.086] | No mediating effect |
| H _{8b} | AT→PIDC→PE | .043 | .022 | 1.972 | .049* | [0.004,0.090] | Has partial mediating effect |
| H _{9a} | SN→PIPC→PE | .044 | .021 | 2.107 | .035* | [0.009,0.091] | Has partial mediating effect |
| H _{9b} | SN→PIDC→PE | .040 | .021 | 1.895 | .058 | [0.004,0.086] | No mediating effect |
| H _{10a} | PBC→PIPC→PE | .068 | .032 | 2.122 | .034* | [0.015,0.139] | Has partial mediating effect |
| H _{10b} | PBC→PIDC→PE | .041 | .022 | 1.867 | .062 | [0.004,0.089] | No mediating effect |

Note: *. This has met the significance level ($p < .05$); **. This has met the significance level ($p < .01$); Bootstrapping (n = 5000)
Ha=Alternative Hypothesis; AT= Attitude, SN= Subjective Norm, PBC= Perceived Behavioral Control, PIPC = Planful Competence, PIDC = Decision Competence, PE = Practice Effect.

R² value and Q² value

According to Hair et al. (2017), the coefficient of determination (R^2) is determined by the square correlation between the actual value and the predicted value of a specific endogenous structure or dependent variable to measure the predictive accuracy of the model. R^2 can vary from 0 to 1, with higher values denoting higher predictive accuracy. A strong R^2 value is considered to be 0.75, moderate 0.50 and weak 0.25. In current research, the obtained R^2 were as follows: planful competence = 0.258, decision competence = 0.288, practice effect = 0.400 (as shown in Figure 3). This shows that the data have good prediction accuracy.

As Stone (1974) points out, Q^2 is a criterion for predicting correlation, and Henseler and Fassott (2009) also highlight its utility in evaluating the predictive power of research models. Q^2 evaluated the predictive validity of the model using a blindfold procedure by partial least squares (PLS). Q^2 value greater than zero indicates that the exogenous structure has a predicted correlation with the endogenous structure, where 0.02 is weak, 0.15 is moderate, and 0.35 is strong (Hair et al., 2011). The Q^2 results (planful competence = 0.183, decision competence = 0.204, practice effect = 0.274) indicate that the model has excellent predictive relevance.

Discussion

The influence of educational practice on educational management is multifaceted, involving not only the organization and management of educational practice, but also the support of educational managers to interns and tutors. Educational practice is both a challenge and an opportunity for educational management, is committed to improving the quality of education and student development, and has a special place in the entire pre-service teacher education. In the field of educational practice research, many studies have been carried out in the aspects of management and organization, preparation, implementation, summary and evaluation of educational practice, but there is no in-depth research on the behavior of students in the process of participating in educational practice. However, students' own problems, such as practice attitude, frustration ability, adaptability to the new environment and family factors, all affect the educational practice effect, greatly hinder the improvement of students' teaching skills, which is the basic quality of qualified teachers, and are not conducive to students' career development and lifelong growth. To solve the above problems, this research is from the perspective of students based on the TPB, explore the relationship between attitude, subjective norm, perceived behavioral control, participation intention, and practice effect in educational practice.

The Direct Effect of Attitude, Subjective Norm, Perceived Behavioral Control, And Participation Intention On Practice Effect

Researcher discovered that attitude, subjective norm, perceived behavioral control, and two of sub-dimensions participation intention (i.e., planful competence and decision competence) all have positive and significant effect on practice effect in educational practice. Firstly, according to the results, when the students' attitude is high, their practice effect in educational practice is also found to be high, which is supported by the research findings carried out by Zhu & Zhang (2010), Li (2014), and Shi (2023). The attitude toward educational practice can affect the practice effect directly, and the positive, responsible and open attitude can significantly improve the teaching ability and overall performance of students, while also laying a solid foundation for their future careers as teachers.

Secondly, the positive and significant relationship indicates that when students possess high subjective norm, they showed greater practice effect. With the previous research, Zeichner & Conklin (2008), Mohammed et al. (2017), and Yuan et al. (2020) were also exploring how teacher education programs influence teacher learning and development through subjective norm, emphasizing how students can improve teaching effectiveness through subjective norm during their educational practice. Given the collectivist tendencies of Chinese culture, the recognition, expectation and performance of important others (such as parents and companions) will have an impact on students' participation in educational practice, which determines the level of students' self-standards and expectations in educational practice, and then affects the practice effect.

Thirdly, with the evidence obtained in current research, researcher agreed with the perceived behavioral control not only has an impact on a person's intention to perform a behavior but also on the performance of the behavior (Ajzen, 2002). The literature provides theoretical and empirical support for understanding how perceived behavior control plays a role in educational practice. By enhancing the perceived behavior control of students, their practice performance and practice effect can be significantly improved. And finally, according to the empirical evidence in current research, all two sub-dimensions (i.e., planful competence and decision competence) shown positive and significant effect on practice effect in educational practice, which agreed the planful competence have an impact on achieving learning goals (Kitsantas et al., 2009). Meanwhile, researcher also agreed with the decision competence is of guiding significance in the implementation of educational practice (Simon, 1997). Therefore, improving these two competences can significantly improve the overall practice effect in educational practice and students' career development, which is also what universities need to pay attention to in future decision-making and management.

The Direct Effect Of Attitude, Subjective Norm, and Perceived Behavioral Control on Participation Intention

Furthermore, recent scholarly investigations also have established that attitude, subjective norm, and perceived behavioral control all have positive and significant effect on two of sub-dimensions participation intention (i.e., planful competence and decision competence) in educational practice. These results indicate the higher the attitude, the greater is the students' planful competence and their decision competence, which also support the research of Kagan (1992), Guskey (2002), Eccles & Wigfield (2002), and Cote & Vierimaa (2014). These can help to understand how attitudes affect students' planful competence in educational practice and how teaching plans and practices can be improved by adjusting attitudes, as well as encourage students to have more confidence and patience when facing challenges and difficulties, and to take more positive and effective actions when facing decisions.

According to the results, when the students' subjective norm is high, their planful competence and decision competence in educational practice is also found to be high. Roberts & Treasure (2012) and Cote & Vierimaa (2014) came to the same conclusion in their research. Therefore, understanding and harnessing the influence of subjective norm can help educators better support students in developing and executing effective plans, making and implementing effective decisions.

In addition, perceived behavioral control also show positive and significant effect towards two of the sub-dimensions of participation intention (planful competence and decision competence) in educational practice. These results also clearly indicate that the higher the perceived behavioral control, the greater is the students' planful competence and decision competence. In previous research, Hagger et al. (2002) had provided how perceived behavioral control affects students' planning ability, point that student with high perceived behavioral control are more confident in the face of decision making.

The Mediating Effect of Participation Intention Between Attitude and Practice Effect in Educational Practice

Besides direct effect between latent variables, current research has discovered prominent findings in exploring the role of sub-dimensions of participation intention as the mediator in the relationship between attitude and practice effect in educational practice. According to the result, one sub-dimension of the participation intention that is the planful competence has insignificant mediating effect in the relationship between attitude and practice effect. In consistent with previous research, when complex and complicated operations are conducted in the face of ambiguity, individuals struggle to choose the optimal course of action. Planful competence enables individuals to comprehend the link between action and performance, therefore reducing the effects of misdirected effort (Delmar & Shane, 2004; Linden et al., 2021).

Conversely, another sub-dimension of the participation intention that is the decision competence has partial mediating effect in the relationship between attitude and practice effect. The social cognitive theory (Bandura, 1991), self-efficacy theory (Maddux, 1995) and theory of planned behavior (Ajzen, 1991) also support the view that decision competence is the mediating factor of behavior outcome. These theories suggest that an individual's intrinsic abilities, such as decision competence, influence the relationship between attitudes and behavioral outcomes.

The mediating effect of participation intention between subjective norm and practice effect in educational practice

Consistent with the relevant researches, subjective norm indirectly affects the performance of behaviors through behavioral intentions (Ajzen, 1991), and Yuan et al. (2020) also found that subjective norm have a significant positive impact on students' learning behaviors, that is, parents' and companions' emphasis on learning will prompt students to have more learning behaviors.

Based on the result, planful competence appeared to be one of the sub-dimensions of participation intention which has partial mediating effect in the relationship between subjective norm and practice effect in educational practice. The results revealed that the students who feel higher expectations are generally more inclined to develop detailed training plans to meet those expectations. while the students with strong planning ability are more likely to perform well in practice and get better results. This means that planful competence not only directly influences practice effect but also enhances the impact of subjective norm on participation intention, which in turn affects practice effect.

Conversely, another of the sub-dimensions of participation intention (decision competence) showed insignificant mediating effect on the practice effect in educational practice. This shows that the decision competence is not the main factor affecting the practice effect in educational practice. In educational practice, the influence of decision competence on students is complex and multifaceted, especially in the face of various challenges encountered in the practice process. The insignificant mediating effect does not necessarily mean that the role of decision competence is insignificant, but suggests that we need to further explore the mechanism of its action in specific situations.

The mediating effect of participation intention between perceived behavioral control and practice effect in educational practice

In addition, another objective is to investigate the mediating effect of participation intention in the relationship between perceived behavioral control and practice effect in educational practice. Perceived behavioral control is a core concept in the TPB (Ajzen, 1991), which involves an individual's perception of their ability to control a specific behavior. According to the result, only one sub-dimension of the participation intention that is the planful competence has partial mediating effect in the relationship between perceived behavioral control and practice effect. The results show that when students feel they can effectively control the various tasks and challenges of their educational practice, their planful competence generally improve. This enhanced sense of perceived behavioral control allows students to better develop and execute plans.

Conversely, another of the sub-dimensions of participation intention (decision competence) showed insignificant mediating effect in the relationship between perceived behavioral control and practice effect in educational practice. This also shows that the decision competence may not be the main mediating variable between perceived behavioral control and practice effect, or its role may be limited in the specific educational practice context. This does not necessarily mean that the role of decision competence is not significant, but that its role is more limited in the specific educational practice context and needs to be further explored.

Conclusion

The theory of planned behavior (Ajzen, 1991) in current research were shown to be able to support the hypothesised structural model. Based on the results of Structural Equation Model (SEM) path model analysis, the current research finds that students' attitude, subjective norm, perceived behavioral control and two sub-dimensions of participation intention (planful competence and decision competence) have positive and significant effects on the practice effect in educational practice. Furthermore, current research has also discovered that students' attitude, subjective norm and perceived behavioral control have positive and significant effects on the two sub-dimensions of participation intention (planful competence and decision competence) in educational practice. As for the mediator, one sub-dimension of participation intention that is the decision competence showed a mediating effect for the relationship between attitude on the practice effect in educational practice, and another sub-dimension of participation intention that is the planful competence showed mediating effect for the relationship between subjective norm and perceived behavioral control on the practice effect in educational practice. The researcher would like to point out that students, as the subject of educational practice, should be paid enough attention. Under

the dual background of teacher education and China's educational reform, only students with a positive attitude, correct subjective norm, accurate perceptual behavior control, strong participation intention, and high self-efficacy can input into educational practice and obtain the better practice effect.

From the perspective of students who participate in educational practice, the results of this research can more comprehensively understand the influencing factors of practice effect in educational practice, mainly exploring how participation intention mediates the relationship between attitude and practice effect, subjective norm and practice effect, perceived behavioral control and practice effect in educational practice. The problems found through the research can provide theoretical support and practical suggestions for the educational practice, and education administrators can better adjust and improve education policies so as to promote the improvement of teacher education quality, further promote educational curriculum reform, and make the commission educational management targeted and effective.

Educational practice plays an important role in the influence of educational policy, the cultivation and selection of talents, the professional development of teachers, and the leadership of educational administrators. This research combed and expanded the existing literature, proposed the structural model contributes to the theoretical and modeling development of the latent constructs of practice effect in educational practice. In terms of research methodology, current research findings contribute to adding empirical evidence to the literature relevant to educational practice, particularly with regard to structural equation modeling (SEM). The research results have important implications for the educational practice, which can not only optimize the implementation, but also provide a solid foundation for students' career development and urge researchers to find possible ways to improve the practice effect in educational practice. And it is helpful to improve the teaching quality of the school, cultivate outstanding educational professionals, and enrich the educational resources and experience.

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