
Assessing Pedagogical Quality (PQ) Improvement via PLS-SEM and MGA Analysis of Demographic Variables in the Context of Online Higher Education for Adults of Xiangtan University, China

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Abstract

This paper explores key factors influencing adult learners' perceptions of Pedagogical Quality (PQ), namely Online Platform (OP), Management Mode (MM), Supervision System (SS), and Evaluation System (ES). Conducted through a comprehensive survey in online adult higher education, the study utilized Smart-PLS version 3 and employed the PLS-SEM method. Results indicate that PQ is positively and significantly influenced by OP, MM, SS, and ES. No moderating effects of socio-demographic characteristics were identified, including age, occupation, and motivation for enrollment. These demographic factors did not significantly impact the model. Consequently, the study suggests that these characteristics are not determinants within the examined model, providing implications for enhancing students' perceptions of pedagogical quality.

Introduction: This paper investigates the four most influential factors influencing adult learners' perceptions of Pedagogical Quality (PQ). These influential elements include the Online Platform (OP), the Management Mode (MM), the Supervision System (SS), and the Evaluation System (ES).

Methodology: This study's research methodology included the administration of a comprehensive survey to participants in online adult higher education. Using Smart-PLS version 4, the study employed the PLS-SEM method. While MGA was used for moderating effects testing of four relationships in the model.

Results and discussion/Themes and findings: Students' perceptions of pedagogical quality are positively and significantly influenced by Online Platform (OP), Management Mode (MM), Supervision System (SS), and Evaluation System (ES), according to the findings of this study. Notably, the current study did not uncover any moderating effects of socio-demographic characteristics on the proposed model.

The study assessed age, occupation, and enrollment motivation as demographic variables. Findings revealed no significant influence of these factors on the investigated model,

highlighting that these demographics are not significant determinants in the examined context.

Conclusion and/or recommendations: In light of these findings, the study offers germane implications and suggestions for enhancing students' perceptions of pedagogical quality.

Keywords

PLS-SEM, Online Platform (OP), Management Mode (MM), Supervision System (SS), and Evaluation System (ES), Pedagogical Quality (PQ).

Introduction

Currently, adult higher education in our nation is evolving with a network-centric pedagogical and administrative framework. Many institutions are adopting online instruction, leading to dedicated teaching management platforms. Despite progress, challenges persist in reforming online education for adults. This study comprehensively examines the current state of pedagogical quality to enhance teaching methodologies in adult higher education.

Literature review

Enhancing Pedagogical Quality (PQ) within the framework of reforming online adult higher education management is intricately tied to the enhancement of pedagogical competencies among the participating educators (Ramlawati, et al., 2018).

Regarding the Online Platform (OP), it encompasses three primary dimensions: the online course development system, the online teaching system, and the online learning system. This essentially pertains to the students' views on the advantages of being able to easily access learning materials and content offered through the specific online platform utilized for educational delivery in institutions (Cote & Millner, 2015). The overarching objective is to amplify learning outcomes.

In the context of Management Mode (MM), a holistic approach encompassing personnel management, system administration, and other related methodologies needs to be adopted. Management mode denotes the all-encompassing strategies and techniques employed to facilitate adult online education, encompassing aspects such as personnel oversight and system administration (Kara et al., 2019).

A Supervision System (SS) for online education should be in accordance with the school's policies, compliant with regulations, legally sound, and adaptable to evolving needs. The supervision system entails a structured framework through which online education is harmonized with institutional policies, ensuring compliance, legality, and responsiveness (Hasri et al., 2021).

Finally, the Evaluation System (ES) encompasses the evaluation and appraisal of instructional and learning outcomes. The evaluation system pertains to the process of

assessing teaching and learning outcomes within the context of online learning methods (Naibaho, 2020). The overarching objective is to continually enhance pedagogical quality.

Numerous sociodemographic factors wield significant moderating influence. Among these, age emerges as a particularly pivotal sociodemographic variable. Several studies employing structural equation modeling have recognized age as a moderator (Biswas et al., 2020; Fisher et al., 2021). The rationale behind age's potential as a valuable moderator lies in its capacity to precipitate shifts in attitudes, behavior, and perceptions, often accompanying the aging process. Consequently, age holds the potential to effectively moderate the impact of independent variables on the investigated dependent variable within this study, along with other sociodemographic moderators.

The exploration of gender as a moderator has also garnered extensive attention among researchers (Fisher et al., 2021).

Research Hypothesis

In sum, there are five research hypotheses in this study. They are:

H1: The online platform will have a significant positive effect on pedagogical quality improvement in online adult higher education management reformation.

H2: The management mode will have a significant positive effect on pedagogical quality improvement in online adult higher education management reformation.

H3: The supervision system will have a significant positive effect on pedagogical quality improvement in online adult higher education management reformation.

H4: The evaluation system will have a significant positive effect on pedagogical quality improvement in online adult higher education management reformation.

H5: There are moderating effects of socio-demographic characteristics on the proposed model in this study.

Methodology

This study employs a quantitative research design commonly utilized in model validation. Emphasizing participant anonymity, the survey underscores the researcher's responsibility to safeguard confidentiality and privacy. Opting for a quantitative approach enhances the likelihood of obtaining candid responses. The study will employ the PLS-SEM method for model measurement and testing.

By using A-priori Sample Size Calculator for Structural Equation Models (<https://www.danielsoper.com/statcalc/calculator.aspx?id=89>), with anticipated effect size:0.3, which is medium effect size, Desired statistical power level:0.8, Number of latent variables:5, Number of observed variables:24, as the total items, and Probability level:0.05, the results are shown in Figure below. The minimum Sample Size to detect effect is 150,

minimum Sample Size for model structure is 92 and recommended minimum Sample Size is 150. Thus, the sample used in this study is adequate.

Figure 1: Sampling result

The survey items that are used to measure the constructs of the model in this study are included below in Table 1 below. Table 2 shows the Cronbach’s Alpha value if item deleted. All values are above 0.7 indicating higher and stronger reliability indices. The reliability indices for all dimensions were above 0.7 and below 0.95. Thus, no issues of multi collinearity and auto collinearity occurred. This instrument is suitable for PLS-SEM analysis later in this study.

Table 1: Items in the Instrument of This Study.

Item number	Item	Reference
DV	Pedagogical Quality (PQ)	
1	To me, the pedagogical quality of adult education is very important.	Jing (2015)
2	Overall, I think the quality of online teaching for adult higher education in my institution is very good.	
IV1	Online Platform (OP)	
1	The online education platform is very responsive when using it with a good network.	Guan (2015) Li (2015)
2	The online education platform can support both computer and mobile (APP) learning.	
3	The platform is well laid out, and I have no trouble in finding the features I needed.	
4	The platform provides rich learning resources to meet my learning needs.	
IV2	Management Mode (MM)	
1	The professional courses offered by my institution are managed very well.	Dong (2012) Sun (2017)
2	The quality of videos of this he online education platform is in high quality, which can meet my learning needs.	
3	The teachers of the courses clearly explain the concepts and methods.	

4	Teachers are updating teaching content in a timely manner, introducing new trends and developments in the discipline, and linking theory with practice.	
5	After-school assignments given are very useful.	
6	There is a complete management guideline for my study that helps me to balance my work and life as a student in online adult higher education.	
IV3	Supervision System (SS)	
1	Teachers often ask questions by name during live online teaching.	
2	Teachers use various forms such as barrage, voice, chat box, WeChat and etc. to communicate with me in the process of online teaching.	
3	Teachers often organize and guide us to conduct online discussions in the process of online teaching.	
4	Teachers in the online education classroom have helped me to grasp the key points and to solve the difficulties faced.	Wang & Zhao (2016)
5	My teachers have carried out the mixed mode of online and offline teaching successfully	
6	I will actively use the online learning platform without urging or reminders of my teachers.	
IV4	Evaluation System (ES)	
1	I am very clear about your course objectives.	
2	Online education can well achieve the teaching objectives of the courses I have taken.	
3	Online adult higher education has given me the knowledge and skills I need.	Zeng & Deng (2014)
4	Online adult higher education can inspire me to learn.	
5	Online learning is very helpful for me to gain professional knowledge.	
6	I am willing to continue using the platform to learn.	

Table 2: Reliability Indices of the Dimensions

Reliability Statistics

Dimension	Cronbach's Alpha	N of Items
DV - PQ	.911	2
IV1 - OP	.932	4
IV2 - MM	.946	6
IV3 - SS	.952	6
Iv4 - ES	.951	6

Multigroup analysis (MGA) is a statistical method used to compare the means of multiple groups or populations. It is typically used in research studies to determine if there are significant differences in a particular variable or set of variables between different groups. The purpose of MGA is to identify any group differences, such as demographic or treatment effects, in order to better understand the underlying causes of the outcome being studied. In other words, it tests and compares the effect of every structural path across various groups (Aguinis et al., 2017; Ting, Fam, Hwa, Richard, & Xing, 2019).

Findings

Descriptive findings

Table 3 gives some information about the demographics of the participants, respectively, calculated in SPSS. No missing data is found.

Table 3: Demographic Information of the Study

Name	Missings	Mean	Median	Scale min	Scale max	Observed min	Observed max	Standard deviation	Excess kurtosis	Skewness
age	0	-	2	1	4	1	4	0.997	-1.044	0.108
job	0	-	3	1	7	1	7	1.79	-0.866	0.353
reason	0	-	4	1	7	1	7	1.94	-1.143	0.121
item1	0	2.211	2	1	5	1	5	1.18	0.113	0.969
item2	0	2.169	2	1	5	1	5	1.18	0.111	0.972
item3	0	2.188	2	1	5	1	5	1.196	0.312	1.077
item4	0	2.172	2	1	5	1	5	1.2	0.16	1.007
item5	0	2.188	2	1	5	1	5	1.225	0.09	1.005
item6	0	2.195	2	1	5	1	5	1.22	0.228	1.066
item7	0	2.195	2	1	5	1	5	1.233	0.094	1.023
item8	0	2.237	2	1	5	1	5	1.225	0.12	1.021
item9	0	2.16	2	1	5	1	5	1.203	0.012	0.97
item10	0	2.183	2	1	5	1	5	1.205	0.202	1.034

item11	0	2.179	2	1	5	1	5	1.196	0.165	1
item12	0	2.129	2	1	5	1	5	1.197	0.18	1.052
item13	0	2.157	2	1	5	1	5	1.172	0.184	1.003
item14	0	2.176	2	1	5	1	5	1.211	-0.024	0.953
item15	0	2.164	2	1	5	1	5	1.199	0.138	1.009
item16	0	2.206	2	1	5	1	5	1.182	0.05	0.93
item17	0	2.239	2	1	5	1	5	1.201	0.158	0.996
item18	0	2.195	2	1	5	1	5	1.207	0.003	0.944
item19	0	2.204	2	1	5	1	5	1.236	0.081	1.006
item20	0	2.213	2	1	5	1	5	1.211	0.124	0.996
item21	0	2.172	2	1	5	1	5	1.2	0.22	1.043
item22	0	2.195	2	1	5	1	5	1.189	0.137	1.001
item23	0	2.174	2	1	5	1	5	1.203	0.341	1.101
item24	0	2.258	2	1	5	1	5	1.244	-0.033	0.962

Table 4 below depicts the measurement model of this study. In this research, the factor outer loadings between items and their underlying constructs calculated by Smart-PLS version 3 showed that each item had an indicator loading that was greater than 0.707 and with significant value smaller than 0.050. As shown in table 4 below, all of the factor loadings of the items to corresponding constructs are above 0.7 and significant (p-value < 0.05) which are excellent. Hence, the measurement model has indicator reliability.

Outer Loadings

Table 4: The Model with Outer Loadings

	ES	MM	OP	PQ	SS
ES1	0.852				
ES2	0.853				
ES3	0.872				
ES4	0.865				
ES5	0.879				
ES6	0.862				
MM1		0.861			
MM2		0.846			
MM3		0.872			
MM4		0.872			
MM5		0.873			
MM6		0.865			
OP1			0.890		
OP2			0.869		

OP3			0.870		
OP4			0.887		
PQ1				0.917	
PQ2				0.915	
SS1					0.850
SS2					0.860
SS3					0.855
SS4					0.841
SS5					0.860
SS6					0.857

Internal Consistency Reliability and Convergent Validity Analysis

Besides, construct internal consistency reliability is an indicator of how well and to what extent the indicators of one construct measure that construct (Herzog & Tonchia, 2014). In other words, construct internal consistency shows that the items are measuring the same thing. Cronbach's alpha is a measure used to assess the internal consistency or internal reliability of a set of scales or test items (calculated in Smart-PLS version 3 in this study). In the other words, the reliability of any given measurement refers to the extent to which it is a consistent measure of a concept, and Cronbach's alpha is one way of measuring the strength of that consistency (Urbach & Ahlemann, 2010). The higher amount of α indicates the items have more shared covariance and probably measure the same underlying concept. According to Gefen et al. (2011), in order to check internal consistency, the value of Cronbach's α statistics for exploratory research should be more than 0.6 and for confirmatory research (i.e., CFA) should be more than 0.7. In addition, in CFA and SEM, internal consistency can be checked by composite reliability (CR) and should be more than 0.7 (Urbach & Ahlemann, 2010). The values of Cronbach's α and CRs are shown in Table 5. As shown in Table 5, all values of Cronbach's α and CRs are greater than 0.7 so the measurement model has internal consistency reliability.

Table 5: The Results of Internal Consistency Reliability and Convergent Validity Analysis

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
ES	0.932	0.932	0.946	0.746
MM	0.933	0.933	0.947	0.748
OP	0.902	0.902	0.931	0.773
PQ	0.808	0.808	0.912	0.839
SS	0.926	0.926	0.942	0.729

The results of both Model with Outer Loadings and Related P- Values as well as the results of Internal Consistency Reliability and Convergent Validity Analysis have confirmed that the instrument developed in this study is of no question. Therefore, the measurement model is of standard, and this instrument can be used for assessment of structural model.

Assessment of Structural Model

Table 6 below shows the Assessment of Structural Model of this study. According to table 6 below, the path coefficients between all constructs are significant (p -value < 0.01). The results show that all the independent variables have significant and positive effect on dependent variable.

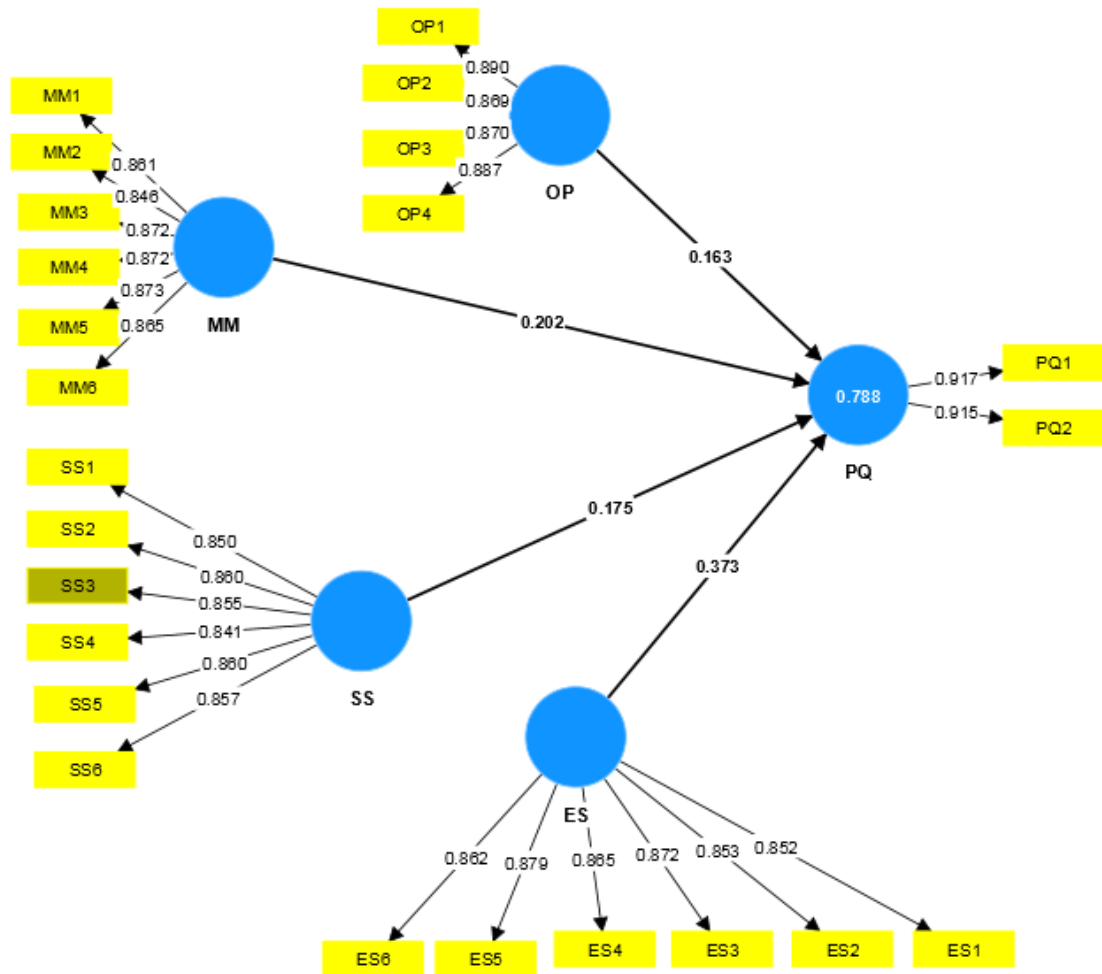
Table 6: Assessment of Structural Model: Path coefficients between all construct

	Path Coefficients	P values	Explained Variance (R2)
ES -> PQ	0.373	0.000	0.788
MM -> PQ	0.202	0.002	
OP -> PQ	0.163	0.003	
SS -> PQ	0.175	0.004	

Graphic Representation of the Model

Besides, as shown in figure 4 below and table 6 above, the explained variance of all the constructs (r square is equal to 0.788 which means 78.8% of the variance in the dependent variable construct can be explained by its predictors which shows all the independent variables are having a substantial effect on the dependent variable in this study, namely SPE.

Figure 1: The Graphic Representation of the Model with Path Coefficients, and Explained Variance



Hypotheses Testing

With the confirmation of Structural Model assessment results and the high value of r square as shown in figure 4 and table 6 above, hypotheses testing of this study can be carried out. Table 7 below shows the major findings on the hypotheses testing of this study.

Table 7: Hypotheses Testing

Hypothesis	Relationships	T value	P values	Decision	95% CILL	95% CIUL
H1	ES -> PQ	6.109	0.000	Accepted	0.253	0.494
H2	MM -> PQ	3.109	0.002	Accepted	0.076	0.332
H3	OP -> PQ	2.953	0.003	Accepted	0.054	0.269
H4	SS -> PQ	2.871	0.004	Accepted	0.058	0.292

For hypothesis 1, t value is 6.109. No zero value is between 95% CI LL and 95%CI UL. Hence, the hypothesis 1 is accepted. For hypothesis 2, t value is 3.109. No zero value is

between 95% CI LL and 95%CI UL. Hence, the hypothesis 2 is accepted. For hypothesis 3, t value is 2.953. No zero value is between 95% CI LL and 95%CI UL. Hence, the hypothesis 3 is accepted. For hypothesis 4, t value is 2.871. No zero value is between 95% CI LL and 95%CI UL. Hence, the hypothesis 4 is accepted. The results of the study highlighted the positive relationships of the students towards tasks in blended learning courses. As such, the four hypotheses confirmed in this study were:

H1: The online platform has a significant positive effect on pedagogical quality improvement in online adult higher education management reformation.

H2: The management mode has a significant positive effect on pedagogical quality improvement in online adult higher education management reformation.

H3: The supervision system has a significant positive effect on pedagogical quality improvement in online adult higher education management reformation.

H4: The evaluation system has a significant positive effect on pedagogical quality improvement in online adult higher education management reformation.

MGA testing

Moderator 1: age

The samples are divided into two groups: 21 and below and above 21. Permutation multigroup analysis is run. No significant difference is found.

	Original (21 and below)	Original (21 above)	Original difference	Permutation mean difference	2.5%	97.5%	Permutation p value
ES	0.948	0.945	0.003	0.000	-0.015	0.015	0.630
MM	0.948	0.946	0.002	0.000	-0.014	0.016	0.714
OP	0.928	0.935	-0.006	0.000	-0.018	0.020	0.516
PQ	0.918	0.906	0.012	0.001	-0.027	0.029	0.424
SS	0.943	0.940	0.003	0.000	-0.016	0.016	0.676

Moderator 2: Occupation

The samples are divided into two groups: employee and employers. Permutation multigroup analysis is run. No significant difference is found.

	Original (employee)	Original (employer)	Original difference	Permutation mean difference	2.5%	97.5%	Permutation p value
ES	0.930	0.934	-0.004	0.000	-0.020	0.019	0.697
MM	0.932	0.933	-0.001	0.000	-0.020	0.021	0.925
OP	0.901	0.903	-0.002	-0.001	-0.030	0.030	0.891

PQ	0.805	0.813	-0.008	-0.001	-0.070	0.067	0.827
SS	0.924	0.927	-0.003	0.000	-0.022	0.023	0.790

Moderator 3: Motivation in taking the online courses

The samples are divided into two groups: internal and external motivation. Permutation multigroup analysis is run. No significant difference is found.

	Original (internal motivation)	Original (external motivation)	Original difference	Permutation mean difference	2.5%	97.5%	Permutation p value
ES	0.946	0.946	0.000	0.000	-0.016	0.015	0.994
MM	0.946	0.948	-0.002	0.000	-0.016	0.015	0.752
OP	0.931	0.932	-0.001	0.000	-0.019	0.019	0.928
PQ	0.917	0.910	0.007	0.000	-0.030	0.028	0.652
SS	0.938	0.945	-0.007	0.000	-0.018	0.016	0.403

No moderating effects of socio-demographic characteristics were observed in this study's proposed model. Tested factors, including age, occupation, and motivation for taking online courses, revealed that these demographic variables did not significantly influence the studied model.

Discussion and conclusion

The study has confirmed that Online Platform (OP), Management Mode (MM), Supervision System (SS), and Evaluation System (ES) have significant positive effects on pedagogical Quality of adult online learners. Therefore efforts have to be done on these four factors in enhancing the level of perception of pedagogical quality among the students.

Current study intensifies that an online platform is often related to: (a) suppliers, (b) customers, (c) complementary service providers, as well as to (d) product categories and (e) channels (Broekhuizen et al, 2021). It is through the online platform that online learning is offered and carried out. Therefore, the perceptions on the online platform highly affects the perception on the pedagogical quality improvement. Efforts in ensuring the quality of online learning platform is taken care of, constant communication with the students are essential. Actions to Feedback on continuous improvement have to be taken. Online platforms can have a significant impact on the quality of education by providing access to a wide range of educational resources, facilitating communication and collaboration between students and teachers, and allowing for more personalized and flexible learning experiences. Additionally, online platforms can provide tools for teachers to track student progress, provide feedback, and adapt their instruction to better meet the needs of their students. However, the impact of online platforms on pedagogical quality improvement may vary depending on the platform, how it is used, and the specific context in which it is implemented.

As highlighted by Kara et al (2019), there are many challenges faced by adult learners in distance education. Among them is management mode. Well managed administration is found to be supporting for enhancing the level of perception on pedagogical quality. Thus, efforts in ensuring the quality of management mode include having constant communication with the learners, providing managerial supports to the learners, activating the functions of advisory services, taking consideration of feedback from students representatives on managerial supports, and etc. The management mode in education can have a significant impact on the quality of instruction and student learning outcomes. A more centralized management approach, where decisions are made at the top level and implemented by lower level administrators, can lead to a lack of autonomy and ownership among teachers, which can negatively impact their motivation and commitment to improving instruction. In contrast, a more decentralized management approach, where decision-making is distributed among teachers and administrators, can foster a sense of ownership and accountability among educators, leading to more effective and sustainable improvements in instruction and student learning.

While the importance of supervision comes to the fore when adults learners are doing online learning. The concept of supervision in the distance education process and the emerging e- supervision concept have been discussed by Vaiz et al (2020) in details. Hence, suggestions include enhancing functions of supervisory supports, constant monitoring of supervisory system, providing channels of reports pertaining to issues of supervisory services, taking actions in solving issues pertaining to supervisory problems, providing training for supervisory staff and students on their right of having proper supervisory supports, and etc. Supervision in education can have a positive impact on pedagogical quality improvement by providing teachers with feedback and support to improve their teaching practices. Supervision can take on various forms, such as formal evaluations, observations, mentoring, and coaching. It can help teachers to identify areas for improvement, stay current with best practices and technology, and reflect on their own teaching methods. Furthermore, a good supervision system can be a tool for professional development, and can also help to create a culture of continuous learning and improvement within a school or district.

Lastly, evaluation is “an activity to collect, analyzes, and presents information about a particular object under study, and the results can be used for consideration in making a decision. The definition is also strengthened by the opinion states that evaluation is an activity to collect data, data analysis and presentation data to be information about a particular object under study so that the results can be used to make decisions” (Nadeak et al,2021). The data collected is deemed to be useful for pedagogical quality improvement. Thus, relevant suggestions include monitoring the fairness in evaluation system, allowing communication and feedback on evaluation system, having constant improvement of evaluation system, exploring latest methods on evaluation system, linking research outcomes in improving evaluation system, and etc. An evaluation system can also have a positive impact on pedagogical quality improvement by providing a framework for assessing and measuring the effectiveness of teaching practices. The evaluation system can be used to identify areas for improvement and to recognize and reward good teaching. Evaluation can take on various forms, such as self-reflection, peer evaluations, student evaluations, and formal evaluations by administrators. It can also be used as a tool for

professional development, by giving teachers feedback on their teaching and helping them to set goals for improvement.

In sum, table 8 below summarizes the efforts and suggestions in upholding the four aspects that will bring positive effects on the perceptions on pedagogical Quality. These efforts should be implemented in making sure that the level of perceptions on pedagogical Quality is heightened.

Table 8: Efforts and suggestions in upholding the four aspects that will bring positive effects on career adapt abilities

Factor		Efforts and suggestions
1	Online Platform (OP)	constant communication with the students are essential. Actions to Feedback on continuous improvement have to be taken. providing access to a wide range of educational resources, facilitating communication and collaboration between students and teachers
2	Management Mode (MM)	having constant communication with the learners, providing managerial supports to the learners activating the functions of advisory services, taking consideration of feedback from students representatives on managerial support foster a sense of ownership and accountability among educators
3	Supervision System (SS)	enhancing functions of supervisory supports, constant monitoring of supervisory system, providing channels of reports pertaining to issues of supervisory services, taking actions in solving issues pertaining to supervisory problems, providing training for supervisory staff and students on their right of having proper supervisory support create a culture of continuous learning and improvement
4	Evaluation System (ES)	monitoring the fairness in evaluation system, allowing communication and feedback on evaluation system, Having constant improvement of evaluation system, exploring latest methods on evaluation system,

		linking research outcomes in improving evaluation system take on various forms, such as self-reflection, peer evaluations, student evaluations, and formal evaluations by administrators
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There are no moderating effects of socio-demographic characteristics on the proposed model in this study. The tested demographic factors include age, occupation and motivation in taking the online courses. This suggests that the study found that demographic factors such as age, occupation and motivation in taking the online courses did not have a significant impact on the proposed model being studied. It implies that the proposed model is not affected by these demographic factors. Hence, further are needed to confirm this finding and to determine if there are any other factors that may have an impact on the proposed model. Additionally, it is important to note that the study may have limitations and the findings should be interpreted with caution.

There are some limitations in this study and some future suggestions are proposed in tackling these limitations. Similar as prior studies, current study also prone with some limitations. First, data collected through convenience sampling method which might be restrict generalizability of results. For future studies, large samples and with stratified sampling method can be employed to increase the generalizability of the findings.

Second, there were only four factors involved only in this study. For future studies, more determinants can be added in producing a more fruitful understanding for developing a better and comprehensive model which includes a multitude of factors in determining the enhancing the level of perception on pedagogical quality among the students.

Third, current study taken only the effects of four selected independent variables on the dependent variable. Moderators and mediators that will affect the relationships studied in this study should be considered for future studies in order to yield greater understanding on the effects of these moderators and mediators on the relationships studied.

Fourth, this study employed basic method of PLS-SEM in the assessment process. Future study should employ other more advanced techniques in PLS-SEM analysis, such as assessing the common method variance (construct level correction), using multi-group analysis (MGA) in evaluating the moderating factors effecting the relationships and etc.

In conclusion, this study has verified that Online Platform (OP), Management Mode (MM), Supervision System (SS), and Evaluation System (ES) have significant positive effects on the perceptions of pedagogical quality among the students. Thus, instructors have to ensure that various strategies and suggestions pertaining to the vital four factors examined in this study should be carried out as to well prepared the students by enhancing their level of perception on pedagogical quality as a whole.

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