

Professional Community Learning Practice and Self-Regulation Learning as A Predictive Factor in The Technological Pedagogical Content Knowledge among Teachers of Accounting Principles

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Abstract

According to the Malaysian Teaching Development Plan 2013-2025, 21st-century teachers must master is integrating technology into education. This research aims to explore the level of technological pedagogical content knowledge, professional learning community practice, and self-regulation learning among Accounting Principles teachers. This study also examined the relationships between professional learning community practice and self-regulation learning, and technological pedagogical content knowledge. It determined professional community learning practice and self-regulation learning as predictors of technological pedagogical content knowledge among Accounting Principles teachers. 100 Accounting Principles teachers from Kuala Lumpur were randomly chosen as survey respondents. This research is a questionnaire-based survey. The descriptive analysis reveals that the teachers of Accounting Principles have a high level of technological pedagogical content knowledge (mean=4.219, sd=.541), professional community learning practice (mean=3.096, sd=.439), and self-regulation learning (mean=4.868, sd=.594). According to correlation analysis, a significant association exists between professional learning community practice and self-regulation learning with technology pedagogical content knowledge. In conclusion, professional community learning practice and self-regulation learning a predictors factors in the pedagogical technology content knowledge among Accounting Principles teachers in Kuala Lumpur

Keywords: Technology Pedagogical Content Knowledge, Professional Learning Community Practice, Self-Regulation Learning, Teacher, Accounting Principles

Introduction

According to the Malaysian Teacher Standard, 21st-century teachers must constantly be knowledgeable and tech-savvy, and they must utilize pedagogy to match their learners to the subject's content. The Ministry of Education Malaysia provides numerous professional

development programs and information communication technology equipment to maintain the quality of teachers. Its goal is to increase teachers' ability to integrate the newest technology components, pedagogy, and subject knowledge into teaching and to learning. Cheah et al (2019) found that once professional development programs were introduced to teachers, their pedagogical technological understanding of material rose.

According to various studies, teachers' technological pedagogical content knowledge can be improved via professional learning community practice and self-regulation learning. According to Lee and James' research (2018), professional learning community practice may motivate teachers to use technology more in the classroom. While Samsilah et al (2006) study states that self-regulation learning allows a person to organize his learning process using self-appropriate methods. These two factors encourage continuous learning and have the potential to influence technological pedagogical content knowledge understanding.

As a result, this research was carried out to determine how professional learning community practice and self-regulation learning as practitioner factors would affect and increase the technological pedagogical content knowledge of Accounting Principles teachers in Kuala Lumpur.

Problem Statement

With the existence of the Covid 19 pandemic, numerous nations decided to shut schools, colleges, and institutions to prevent the spreading of the virus. The Malaysian Ministry of Education has taken similar action to address the Covid-19 issue. During the Movement Control Order (MCO) phase, teachers are crucial. Virtual classrooms or e-learning take the role of instruction and facilitation. The teacher can use any current methodology and program to educate his students in this virtual class.

According to Baharuldin et al (2019), technology is not just employed as a teaching tool. It has been utilized as a source of information that must be applied to issues taught in 21st-century education. It enables teachers to perform teaching and coaching correctly. This conclusion is also supported by Nurbaizura and Azizan (2020), which claim that technology helps teachers be more dynamic and imaginative in their teaching and coaching activities than traditional approaches.

Teachers face many problems while conducting virtual teaching and learning studies (König et al., 2020). Teachers of Accounting Principles are still less successful in communicating the substance of the topics presented during teaching and learning, according to the Arumugham and Sarimah's (2016)'s research. It's because the teacher's approach is inappropriate for their students.

Furthermore, according to Subramaniam and Izham's (2020) research, teachers still prefer to use static approaches such as "chalk and talk." This is reinforced by the Noormahanisa and Norasmah (2020), which found that Accounting Principles teachers still prefer to adopt teacher-centered approaches. This non-creative teaching method failed to attract students' interest.

Meanwhile, the researchers discovered that teachers' mastery of technological pedagogical content knowledge is still lacking. According to the Nordin and Ariffin research (2016), teachers could not translate teaching content due to a lack of mastery of the knowledge component of technological pedagogical content. The study by Rahayu and Wirza (2020); Khairul (2020) indicates that teachers still lack the technology and also don't use appropriate pedagogy during conducting MCO online learning.

Although the study of the technological pedagogical content knowledge has been studied by local researchers in mathematics, religion, and other technical education (Bahador et al., 2018; Omar et al., 2021). However, studies on professional learning community and self-regulation learning as a predictive factor on technological pedagogical content knowledge are still lacking in Accounting Principles teachers. As a result, this research should be carried out to use the results as reference material by the necessary parties.

Objectives of the Study

- i. to determine the level of technological pedagogical content knowledge, community practice of professional learning, and self-regulation learning among Accounting Principles teachers
- ii. to determine whether there is a relationship between professional learning community practice, self-regulation learning, and technological pedagogical content knowledge among Accounting Principles teachers.
- iii. to identify professional community learning practice and self-regulation learning as a predictive factor in the technological pedagogical content knowledge among Accounting Principles teachers

Scope of Study

The study's objective is to determine the level of technological pedagogical content knowledge, professional learning community practice, and self-regulation learning of Accounting Principles teachers. All Accounting Principles teachers in secondary school made up the research population. This research utilized a total of 100 teachers as samples. To establish the number and sample size, researchers used (Formula Cochran, 1977).

Literature Review

Technological Pedagogical Content Knowledge

Technological pedagogical content knowledge is a theoretical framework for illuminating and studying teachers' competence in using relevant technologies to improve teaching effectiveness (Koehler et al., 2009). Content and pedagogical technology expertise may help improve comprehension of complicated subjects, encourage collaboration among colleagues, and enhance teaching quality.

The government has launched VLE frog as an e-learning platform for teachers. VLE frog had been renamed as Google Classroom now. Teachers may share their teaching materials and approaches in text or video recordings with their students on the site. Teachers may use this platform to enhance and design new teaching approaches. It also attracts students to the subject (Ahmad, 2020).

Professional Learning Community Practices

Professional Learning Community Practice is an ongoing effort in schools to help teachers improve their teaching (pedagogy) (MOE, 2013). According to Dufour and Marzano, (2011), the professional learning community's approach positively impacted the school culture. It enabled teachers to improve their teaching and coaching abilities, ethics, and competency.

Much research has shown that the professional learning community approach has resulted in positive school culture (Chong et al., 2016; Zalina et al., 2020). Since 2013, the Malaysian Ministry of Education has performed professional learning community practice. In

2015, this program helped 598 low-performing teachers enhance their performance, professionalism, authority, and pedagogical abilities (Hassan et al., 2018).

The School Transformation Programme 2025 (TS25) is an initiative of the Ministry of Education Malaysia to improve the quality of teachers. 2500 SISC+ and SIPartners have been placed around the nation due to this initiative. They collaborate with the school to increase teacher quality via professional community learning practices (Madhavan et al., 2020). They are responsible for guiding all teachers on curriculum, assessment, and pedagogy, regardless of teaching experience, academic qualifications, or options. This program improves the teacher's ability to integrate technical, pedagogical, and teacher knowledge components into their teaching process (Yee et al., 2015).

Self-Regulation Learning

Self-regulation learning is a highly personal and flexible learning method tailored to each individual. Self-regulation learning allows the learning process to occur continuously. As a result, the teacher's expertise in subject and technology will constantly adapt and change to the appropriate circumstances. Most research on self-regulation learning focused on cognitive, meta-cognitive, and resource control techniques. Supportive cognitive meta may help teachers organize their learning and improve pedagogically and technical expertise (Huang & Lajoie, 2021; Michalsky & Kramarski, 2015).

A self-regulation learning research on innovative technology-integrated classrooms was done by Ng et al., in 2005. His study found a significant relationship between self-regulation learning and technological pedagogical content knowledge. Self-regulation learning and technology encourage interaction between teachers and students, promoting ongoing learning about the content and understanding of the subject being taught and the teacher's attitude toward technology.

Meanwhile, Chen and Jang (2019) examined the correlation between self-regulation learning and technological pedagogical content knowledge in secondary school teachers. Teachers' technological pedagogical content knowledge is still inadequate for self-regulation learning. From the findings of the studies discussed, it is clear that the practice of community professional learning and self-learning promotes continuous learning. Teachers who practice continuous learning will constantly improve their skills and knowledge to keep pace with the current changes. The professional learning community and self-learning community also positively impact school culture. The professional and self-learning communities allow teachers to improve their ability, integrity, and competence in teaching and facilitation. Thus, the practice of the professional learning community and self-regulation learning has a significant relationship with the technological pedagogical content knowledge.

Conceptual Framework of the Study

As shown in Figure 1, this research included two dependent variables and one non-dependent variable. Professional learning community practice and self-regulation learning are dependent variables. Technological pedagogical content knowledge is a non-dependent variable. The contribution of professional community learning practice and self-regulation learning to technology pedagogical content knowledge improves teacher self-sufficiency. This study's conceptual framework also analyzes how it improves teachers' quality.

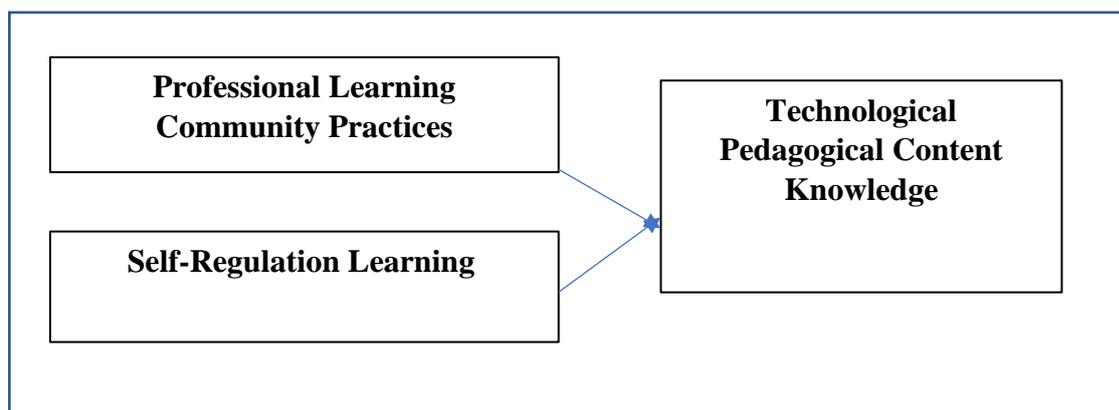


Figure 1 Study Conceptual Framework

Source: Combined Model TPACK (Mishra and Koehler, 2006; Model Hord, 1997; Model Teacher Self-Regulation Scale, 2009)

Methodology

This is a survey-based quantitative research study. As a result, a questionnaire will be utilized as a research tool or instrument. This survey collects data on facts, opinions, emotions, and desires (Konting, 2009) The participants in this pilot research were all Accounting Principles teachers who served in secondary schools. The sample for this research is 100 Accounting Principles teachers from Kuala Lumpur's Federal Territory. The researcher employed the Cochran formula to calculate the sample size (Cochran, 1991)

Professional learning community practice, self-regulation learning, and technology pedagogical content understanding were the three variables in this research. The questionnaire utilized in this research is divided into four sections: Section A includes demographic data such as gender, race, academic credentials, teaching experience, and career options. Section B focuses on Pedagogical Technology Knowledge Content. The content is assessed using 29 items adapted from Schmidt et al., (2009). Section C contains questions concerning professional community learning practices, calculated based on 52 items adapted from the Professional Learning Community- Revised (PLC-R) questionnaire instrument developed by (Olivier et al., 2009). Section D contains 40 self-regulation learning questions taken and adapted from the Teacher Self-Regulated Scale (TSRS) questionnaire instrument developed by (Capa-Aydin et al., 2009).

Study Findings

Descriptive analysis in Table 1 shows the value of the mean score of the level of pedagogical technological knowledge of the content of the teacher of Accounting Principles

Table 2

Mean Score level of Technological Pedagogical Content Knowledge of Teacher's Content Accounting Principles

Knowledge of Content Pedagogy Technology	Mean Score	SD	Level
I know how to solve technical problems related to my subject.	4.010**	0.541	High
I can quickly learn technology.	3.750	0.642	High
I'm constantly following new technological developments.	3.610	0.790	Moderate
I've always tamed myself with technology.	3.620	0.801	Moderate
I know about a variety of different technologies	3.350	0.757	Moderate
I have the necessary technical skills to use technology.	3.300	0.823	Moderate
I have enough opportunities to work with technological differences in my subject.	3.400	0.816	Moderate
I know the technology I can use for understanding and handling the subject of Accounting Principles	3.310	1.376	Moderate
I can choose technology that can improve the teaching approach in learning.	3.290	1.282	Moderate
I was able to choose technology that could improve my students' learning.	3.240	1.264	Moderate
My Teaching Education Program has allowed me to think deeply about how technology can affect my teaching approach in the classroom	4.000	0.636	High
I think critically about how to use technology in my class	3.950	0.626	High
I can adapt to the use of technology that I learned in different teaching activities	3.910	0.637	High
I can choose the technology to use in my class to improve what I teach, how I teach, and what students learn	3.940	0.600	High
I can teach lessons that fit by combining the content of Accounting Principles, technology, and teaching approaches	3.840	0.647	High
I can provide leadership in assisting the committee in coordinating the use of the content, technology, and learning approaches in my school	3.950	0.626	High
I can choose a technology that improves the content of the lesson.	3.970	0.594	High
I can teach by combining accounting, technology, and the appropriate teaching approach.	3.290	1.200	Moderate
I know how to solve technical problems related to my subject.	3.040*	1.118	Moderate
I can quickly learn technology.	3.610	0.764	Moderate
I'm constantly following new technological developments.	3.610	0.764	Moderate
I've always tamed myself with technology.	3.580	0.755	Moderate
I know about a variety of different technologies	3.520	0.745	Moderate

I have the necessary technical skills to use technology.	3.550	0.809	Moderate
I have enough opportunities to work with technological differences in my subject.	3.630	0.774	Moderate
I know the technology I can use for understanding and handling the subject of Accounting Principles	3.140	1.064	Moderate
I can choose technology that can improve the teaching approach in learning.	3.440	0.857	Moderate
I was able to choose technology that could improve my students' learning.	3.620	0.789	Moderate
My Teaching Education Program has allowed me to think deeply about how technology can affect my teaching approach in the classroom	3.150	1.048	Moderate
Overall	4.219	.541	High

The mean score for each question on the Technological Pedagogical Content Knowledge of Accounting Principles teacher in the Federal Territory of Kuala Lumpur is shown in Table 1. The greatest mean score value of the teacher's evaluation is indicated with **, while the lowest mean score value of the teacher's assessment is marked with *, as shown in table 1. The mean interpretation is based on the respondent's mean score from Rusinah & Sudirman's (2003) descriptive analysis. Overall, the level of technological pedagogical content knowledge of teachers of the Federal Territory of Kuala Lumpur Accounting Principles is the highest, with a mean score of 4.219.

Table 2

Mean Score for Professional Learning Community Practice for Accounting Principles Teachers

Professional Learning Community Practice Dimensions	Mean Score	SD	Level
Shared and supportive leadership	3.093	.517	High
Sharing of values, mission, and vision	3.133	.468	High
Collective learning and application	3.152	.430	High
Sharing personal practices	3.079	.478	High
Supporting conditions	3.047	.451	High
Overall	3.096	.439	High

Table 2 illustrates the value of the mean score of the level of practice of the professional learning community of the Accounting Principles teacher using descriptive analysis. The study of the mean score shows that the collective teaching dimension and teacher application of the Federal Territory of Kuala Lumpur Accounting Principles is the highest at mean=3.152, followed by the value sharing dimension, mission, and vision (mean=3.133) and the the shared and supportive leadership dimensions (mean=3.093). The fourth-highest mean score (3.079) is for personal practice sharing. In contrast, the supporting state dimension has the lowest mean score of 3.047. Overall, the mean score of the teacher's professional learning community principles in the Federal Territory of Kuala Lumpur is at a high level of 3.096.

Table 3

Mean Score of Each Item in Professional Learning Community Practice of Accounting Principles Teacher

Professional Learning Community Practices	Mean Score	SD	Level
Shared and supportive leadership			
Teachers are consistently involved in discussions and decision-making on most issues at school	3.090	0.552	High
The principal takes into account all views/opinions of teachers in decision making	2.980	0.738	Moderate
Teachers can quickly get important information	3.150	0.575	High
The principal is proactive and consistently provides support	3.190	0.581	High
Teachers are always allowed to make changes	3.210**	0.591	High
Principals share responsibility and reward innovations made	3.060	0.664	High
Principals act democratically with teachers through power-sharing and authority	2.960	0.695	Moderate
Leadership is encouraged and nurtured among teachers	3.210**	0.591	High
Decisions are made through committees and cross-field relations	3.100	0.595	High
Stakeholders share responsibility and accountability in pupil learning without showing authority and authority	2.910*	0.637	Moderate
Teachers use a variety of data sources to make decisions about teaching and learning	3.160	0.545	High
Sharing of values, mission, and vision			
The collaboration process exists when building value sharing among teachers	3.260**	0.505	High
The values shared by teachers support the norms of behavior in decision-making on teaching and learning	3.220	0.484	High
Teachers share a vision of developing schools focused on pupil learning	3.240	0.474	High
Decisions are made in line with the values, vision, and mission of the school	3.260**	0.525	High
The collaboration process exists when building a shared vision among teachers	3.170	0.604	High
School goals focus more on pupils' learning than on achieving scores and test grades	2.850*	0.757	Moderate
School policies and programs are in line with the school's vision	3.160	0.526	High
Stakeholders (e.g., parent and teacher associations) are actively involved in setting high expectations for improving pupil achievement	2.920	0.677	Moderate
Data used to determine actions to achieve the shared vision	3.120	0.556	High
Collective learning and application			

Teachers work together to find knowledge, skills, and strategies and apply them to their tasks	3.150	0.520	High
Flexibility exists among teachers and reflects their commitment to developing the school	3.100*	0.577	High
Teachers plan and work together to find solutions to meet the various needs of pupils	3.210**	0.498	High
Sharing personal practices			
Opportunities exist for teachers to agitate colleagues and open up improvement spaces	3.180	0.593	High
Teachers give feedback to their colleagues about teaching practices	3.180	0.539	High
Teachers share ideas and opinions informally to improve students' learning	3.170	0.533	High
Teachers collaboratively analyze pupil assignments to share and improve teaching practices	3,000*	0.603	Moderate
Opportunities to become mentors and coaches exist in this school	3.240**	0.553	High
Teachers and colleagues have the opportunity to apply to learn and share the effectiveness of their teaching practices	3.160	0.507	High
Teachers always share pupils' assignments to guide school development	3.130	0.525	High
Supporting conditions			
A loving culture exists among teachers and pupils and is built based on trust and respect	3.230	0.529	High
A culture of mutual trust and respect exists when taking risks	3.160	0.507	High
Excellent achievements are consistently recognized and celebrated in this school	3.250**	0.520	High
Teachers and stakeholders together inculcate a school culture that loves change on an ongoing basis	3.030	0.658	High
Relationships founded based on honesty and respect between teachers allow the revision of other teachers' data to improve teaching and learning	3.140	0.551	High
Discussion time is allocated to teachers to facilitate collaborative work	3.020	0.619	High
Timetable design promotes collective learning and sharing of teaching practices	2.860	0.711	Moderate
Financial resources are always at hand for professional development	2.690*	0.734	Moderate
Technological resources and teaching aids are always available in this school	2.830	0.604	Moderate
Expertise resources are always available to support continuous learning	2.920	0.631	Moderate
The school environment is always clean, attractive, and pleasant	3.120	0.573	High

The difference in the staff and the department's position does not preclude the collaboration between the teacher.	3.150	0.575	High
The school's communication system supports the flow of information between fellow teachers	3.170	0.533	High
The school communication system supports the flow of information to the entire school community, the District Education Office, parents, and the school community	3.050	0.479	High
Data is well maintained and stored to facilitate access for teachers	3.080	0.563	High
OVERALL	3.096	.439	High

Table 3 shows the findings for each item in the professional learning community practice of teachers in the Federal Territory of Kuala Lumpur Accounting Principles based on a single dimension. Based on table 3, the greatest mean score of the teacher's evaluation is denoted by **, while* indicates the lowest mean score value. Rusinah and Sudirman's descriptive study provided the basis for the mean interpretation .

Descriptive analysis in Table 4 shows the value of the mean score of the teacher's self-regulation learning level of the Federal Territory of Kuala Lumpur Accounting Principles based on each factor

Table 4

Mean Score of Self-Regulation Learning Factor for Accounting Principles Teachers

Self-Regulation Learning Factor	Mean Score	SD	Level
Goal Setting Factor	4.957	.586	High
Help-Seeking Factor	4.783	.789	High
Intrinsic Interest Factor	5.086	.713	High
Mastery Goal Orientation Factor	5.045	.773	High
Performance Goal Orientation Factor	4.280	1.048	Moderate
Self-evaluation Factor	4.925	.698	High
Self-instruction Factor	4.988	.656	High
Self-reaction Factor	4.922	.700	High
Emotional Control Factor	4.852	.654	High
Overall	4.868	.594	High

The descriptive analysis in Table 6 shows the value of the mean score of the level of self-regulation learning of teachers of the Federal Territory of Kuala Lumpur Accounting Principles based on each factor. The mean score analysis showed that the intrinsic interest factor had the highest mean score of 5.086 for teachers of the Federal Territory of Kuala Lumpur Accounting Principles. Next is followed by the mastery goal orientation factor (mean=5.045), self-instruction factor (mean=4.988), goal setting factor (mean=4.957), self-evaluation factor (mean=4.925), self-reaction factor (mean=4.922) and emotional control factor (mean=4.852). Two self-regulation learning factors with the lowest mean score are the help-seeking factor and performance goal orientation factor, which are the mean values of 4.783 and 4.280. Overall, the mean score of the teacher's self-regulation learning level of the Federal Territory of Kuala Lumpur Accounting Principles is at a high level of 4.868.

Table 5

Mean Score of Each Item in Teacher Self-Regulation Learning of Accounting Principles Teacher

Self-Regulation Learning Factor	Mean Score	SD	Level
Goal Setting Factor			
While preparing for classes, I identify goals to be achieved by students.	5.060**	0.664	High
While preparing for classes, I decide on the teaching strategy appropriate for the topic.	5.000	0.667	High
While preparing classes, I take student characteristics into consideration	4.980	0.696	High
Before teaching, I decide on how to assess my students.	4.890*	0.618	High
While preparing for classes, I take available resources into consideration.	4.920	0.614	High
While I am preparing for classes, I take students' needs into account.	4.890	0.665	High
Help-Seeking Factor			
I ask for help from my colleagues when I encounter problems that I cannot solve.	4.850**	0.999	High
While preparing for classes, I get help from my colleagues when needed.	4.710*	0.946	High
I discuss my positive and negative experiences with my colleagues after teaching	4.790	0.795	High
Intrinsic Interest Factor			
I like the teaching profession	5.160	0.801	High
It makes me happy to see my students learn.	5.270	0.679	High
I am proud of working as a teacher	5.320**	0.790	High
I have been interested in the teaching profession since my childhood.	4.710*	1.076	High
I'm full of enthusiasm every time I start class.	4.970*	0.846	High
Mastery Goal Orientation Factor			
It is essential to be a successful teacher to improve teacher learning.	5.060**	0.814	High
It is essential to be a successful teacher for professional self-satisfaction.	5.060	0.827	High
It is essential to become a successful teacher for self-development	5.030	0.870	High
It is essential to be a successful teacher to better prepare my students for life	5.030**	0.822	High
Performance Goal Orientation Factor			
It is essential to become a successful teacher to get a promotion.	4.180	1.258	Moderate
It is essential to be a successful teacher to get appreciation from parents.	4.160	1.229	Moderate
It is essential to be a successful teacher to be loved by my students	4.710**	1.047	High

It is essential to be a successful teacher to strengthen my position.	4.200	1.198	Moderate
It is essential to become a successful teacher to please the school administrator.	4.150*	1.274	Moderate
Self-evaluation Factor			
I learn from the mistakes I made in class.	5.020	0.791	High
At the end of the teaching, I try to determine whether I have met my goals or not.	5.030**	0.731	High
I use student feedback to improve my teaching.	4.880	0.879	High
When assessing myself at the end of the lesson, I compared my performance with previous years.	4.770*	0.839	High
Self-instruction Factor			
I direct myself to use time effectively	4.940	0.776	High
If the strategies I have used do not work, I utilize alternative strategies	5.050**	0.730	High
I pay attention to students' facial expressions during teaching	5.010	0.732	High
During teaching, I adapt my instructional strategies based on students' needs.	4.950*	0.672	High
Self-reaction Factor			
I feel good about myself when everything goes according to the plan	5.110**	0.764	High
Realizing that I am successful encourages me to learn more.	5.060	0.750	High
I get upset when I am negatively evaluated in my profession	4.820	0.936	High
The realization that I am not successful worries me.	4.700*	1.010	High
Emotional Control Factor			
I stay calm when faced with a problem	4.760*	0.818	High
When a problem occurs in class, I first try to calm it down	4.840	0.662	High
When I feel bad in a situation, I try to think positively.	5.010**	0.718	High
When I encounter a problem, I take a deep breath.	4.870	0.787	High
I do not panic when a problem occurs during teaching.	4.780	0.871	High
OVERALL	4.868	.594	High

Table 5 shows the mean score for each item in the self-regulation learning of Accounting Principles teachers in the Federal Territory of Kuala Lumpur. Based on table 5, the greatest mean score of the teacher's evaluation is denoted by **, while* indicates the lowest mean score value. Rusinah and Sudirman (2003)'s descriptive study provided the basis for the mean interpretation.

The alpha Cronbach value for each variable was excellent in the pilot research. Table 6 shows the alpha Cronbach's coefficients, which are 0.958 for Technological pedagogical content knowledge, 0.982 for professional learning community practice, and 0.946 for self-regulation learning.

Table 6

The Value of Alpha Cronbach Instruments Review

Variable	Code	Item Bill	Alpha Value
Technological pedagogical content knowledge	B1-B29	29	.958
Professional learning community practice	C1-C52	52	.982
Self-regulation learning	D1-D40	40	.946

In conclusion, the alpha Cronbach value of this research's questionnaire items ranged from 0.946 to 0.982. This indicates a high level of trust and is suitable for actual research. The value of the alpha Cronbach coefficient nearing 1.00, according to Coakes et al., (2008), suggests that the items on a scale are measuring the same thing. This number indicates that the items of an instrument are very reliable. The value of the alpha Cronbach coefficient utilized in this research is calculated using Lim, (2007)'s trust index classification, as shown in Table 7.

Table 7

Classification of Reliability of Instruments Based on Alfa Value

Reliability Level	The Reliability Suspect
Very Good	0.90 or so
Good	0.80 – 0.89
Medium	0.60 – 0.79
Doubtful	0.40 – 0.59
Rejected	0.00 – 0.39

Source: Lim (2007)

Discussion

Based on the findings of pilot studies conducted on teachers in the Federal Territory of Kuala Lumpur, the first objective is to determine the level of technological pedagogical content knowledge, the practice of the professional learning community, and the learning of self-regulation among teachers of the Accounting Principles.

According to the Malaysian Education Development Plan 2013-2025, the Ministry of Education has succeeded in enhancing the quality of teachers by analyzing the findings. The concept of pedagogy and how to integrate technology into the curriculum of academic programs has been highlighted by all Institutes of Teacher Education or universities. Before becoming a teacher, the teacher was exposed to technology pedagogical content knowledge (Kariki et al., 2017; Raman, 2014; Tay, 2017). This is supported by research by Blankley et al (2019) that claims that all Accounting Principles teachers have mastered the fundamentals of technology use. As a result, students' coursework for Principles of Accounting subjects must be completed using computer software, and it counted into Sijil Peperiksaan Menengah.

The study's research showed that teachers' Accounting Principles professional learning community practice at a high level of 3.096. Abdullah et al (2012); Shuib & Yunus (2018) all found similar results. This is due to the Ministry of Education Malaysia's attempts to promote this practice at the school level as part of the Malaysian Education Development Plan 2013-2025. The Teacher Education Division has been doing so since 2011.

The study showed that collaborative learning and application had the highest mean value among teachers in the Federal Territory of Kuala Lumpur Accounting Principles. This demonstrates the Ministry of Education's achievement in implementing the School

Transformation Programme 25 (TS25). This program suppresses the collaborative culture in schools. As a result, a culture of teacher learning predominates in many schools. This demonstrates how teachers work together to analyze, improve, and share information, pedagogy and material, and technology integration abilities in the subject with their colleagues. As a result, this research validates the findings of Ismail et al (2018); ALRwaythi and AL-Otaibi (2020), which claim that knowledge, pedagogy, and technical abilities have all improved due to cooperation. According to Abdul Majid, (2016) research, this culture has also enhanced students' success due to increased teacher quality.

According to the study, leadership shared and supported dimensions, and the mission, vision, and value-sharing dimensions had the most outstanding mean value. These results support Abd Rahman (2021)'s research. TS25 encourages an informative leadership approach that fosters the development of competent, visionary leaders and a pleasant school atmosphere. As a result, the teacher will constantly be directed by the administrator to increase the technological pedagogical content knowledge. Administrators also always encourage teachers to use technology in the classroom. As a result, these results support the Andin et al., (2019) research, which found that school administrators influence school learning culture change.

Furthermore, the findings of this research are consistent with those of Zuraidah (2009) and Sujirah and Zuraidah (2014) in which administrators always share their authority and include teachers in setting the school's vision. As a result, the teacher understands the school's goal, values, and vision. The close relationship between administrators and teachers encourages teamwork and makes it easier to achieve the mission and vision. According to Dufour and Eaker, (1998), the effectiveness of vision can motivate teachers to work as a team, encourage collaboration among teachers, and advance the school.

The study's findings show that the overall level of teacher self-regulation learning had a high mean value. According to the results, the teacher is enthusiastic about his job and proud of himself as a teacher. Intrinsic interest may help teachers realize their potential and enjoy their work. This is shown in the (Efendi et al., 2018). Most of the teachers involved in the study are an option in Accounting. They teach the subject under their specialty. As a result, they are proud and interested in their job. They will always explore the knowledge of pedagogical technology and new content to better their teaching. This corresponds to Siti Hajar and Suguneswary's (2016) findings.

The findings of this research back up the findings of Kunst et al (2018); Samsiah and Khalip (2019) study, which found that the mastery goal orientation factor with a very high mean value in self-regulation learning. This means that the Accounting Principles teacher engaged in the research always completes their responsibilities. As a result, the Accounting Principles teacher will continue to enhance his skills and knowledge to meet the objectives stated.

The Pearson correlation analysis determined a relationship between professional learning community practice, self-regulation learning, and technological pedagogical content knowledge among Accounting Principles teachers. The analysis of the study showed a value of $p < 0.00$. According to Table 8, this result suggests a moderate relationship between all three variables.

Table 8

Correlation Analysis of Professional learning community practice And Self-Regulation Learning on Technological pedagogical content knowledge Among Teacher's Accounting Principles

	Sum of Squares	Df	Mean square	F	Sig
Regression	11.880	2	5.940	33.703	.000 ^b
Residual	17.096	97	.176		
Total	28.976	99			

The results of the inference analysis revealed a significant positive relationship between professional learning practice and self-regulation learning with knowledge of pedagogical technology content of the Accounting Principles teacher. Professional community learning practice accounted for 0.374 of the total, whereas self-learning accounted for just 0.036. (Table 9). Findings that back up Chen and Jang's (2019) findings, namely that teachers find it difficult to understand technological pedagogical content knowledge through self-regulation learning. It is still difficult to combine all three components, namely knowledge, pedagogy, and technology, in subjects taught through self-regulation learning.

Table 9

Regression Analysis of Professional community learning practice And Self-Regulation Learning of Pedagogical Technology Knowledge Content among Teacher's Accounting Principles

Forecaster	B	Default Error	Beta	T	Sig	R ²	Contribution
Professional Learning Community Practices	.575	.121	.467	4.757	0.000	0.410	41.0
Self-Regulation Learning	.218	.089	.239	2.436	0.000		
Constants	1.379	0.365	1.379	3.775	0.017		

In this research, professional community learning practice and self-learning contribution to pedagogical technology content knowledge among Accounting Principles teachers was just 41.0 percent. Other variables still impact 59.0 percent of the population. The finding shows that professional community learning practice contributed more to technological pedagogical content knowledge compared to self-regulation learning. The results of this research back up Chen and Jang (2019); Koh et al (2017), indicating that professional learning community practice helps increase pedagogical technological knowledge of teacher content and become a qualified teacher. Besides, the Malaysian Ministry of Education emphasizes professional learning communities in schools above self-regulation learning, and most Malaysian schools employ professional community learning (Chong et al., 2016).

Summary

In general, the study is carried out for the purpose of identifying the level of knowledge of the pedagogical technology of the content, the practice of the professional learning community, and the learning of the self-regulation of the teacher of Accounting Principles. The study also looked at what is the difference in the level of pedagogical technological knowledge of the

content of teachers' Accounting Principles based on teaching experience. Further in-depth this study also identifies the relationship between the two dependent variables with non-dependent variables i.e. between content pedagogical technology knowledge and professional learning community practice and teacher self-regulation learning.

This study was conducted using the quantitative method of using questionnaires to obtain the necessary data. A total of 100 Accounting Principles teachers from the Federal Territory of Kuala Lumpur were selected to be the respondents in this study. This study was guided by the conceptual framework of the TPACK Model, Hord Model, and Zimmerman Model. Statistical frequency, mean, and deviation of the standard, percentage, and Pearson correlation were used in answering all the questions in this study.

The findings of the results of the study for the overall level of knowledge of pedagogical technology content, professional learning community practice, and teacher self-regulation learning were high, i.e. the mean values were 4.219, 3.096, and 4.868. respectively. This finding shows that there is a moderate correlation relationship between the three variables and the value $r = 0.410$, $p < 0.00$.

In conclusion, the findings show that all Malaysian schools have implemented the professional learning community practice. The School Transformation Programme (TS25) has provided all school employees with an understanding of the importance of this practice to achieve the PPPM's goal. As a result, these findings support the findings of (Ansawi and Pang, 2017; Zheng and Cheng, 2018). Andin et al (2019) claim that forming an appropriate professional learning community is one of the initiatives for improving teacher quality based on current educational trends and developments. This approach encourages teachers to continuous learning and collaborate, and it has the potential to increase teacher quality in terms of technological pedagogical content knowledge (Lee & James, 2018). Therefore, very reasonable action has been taken by MOE in introducing professional community learning practices to all schools. Although the study's findings show that self-regulation learning has a limited impact, it may increase technological pedagogical content knowledge (Kramarski & Michalsky, 2010) Thus, self-regulation learning and professional learning community practice are predictors of technological pedagogical content knowledge. As a result, teachers strongly encourage professional learning communities and self-regulation learning to improve their pedagogical technology content knowledge.

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