INVESTIGATING THE TECHNOLOGICAL PEDAGOGICAL CONTENT KNOWLEDGE (TPACK) OF EFL TEACHERS BASED ON SCHOOL STATUS AND TEACHERS STATUS AT SMA/MA OF PANGKEP REGENCY

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A THESIS

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The Writer,

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PEDOMAN TRANSLITERASI ARAB-LATIN

1. Konsonan

Daftar huruf bahasa Arab dan transliterasinya ke dalam huruf Latin dapat dilihat pada halaman berikut:

Huruf Arab	Nama	Huruf Latin	Nama
ا	Alif	tidak dilambangkan	tidak dilambangkan
ب	Ba	B	Be
ت	Ta	T	Te
ث	s\a	s\	es (dengan titik di atas)
ج	Jim	J	Je
ح	h}a	h}	ha (dengan titik di bawah)
خ	Kha	Kh	ka dan ha
د	Dal	D	De
ذ	z\al	z\	zet (dengan titik di atas)
ر	Ra	R	Er
ز	Zai	Z	Zet
س	Sin	S	Es
ش	Syin	Sy	es dan ye
ص	s}ad	s}	es (dengan titik di bawah)
ض	d}ad	d}	de (dengan titik di bawah)
ط	t}a	t}	te (dengan titik di bawah)
ظ	z}a	z}	zet (dengan titik di bawah)
ع	‘ain	‘	apostrof terbalik
ع	Gain	G	Ge
ف	Fa	F	Ef
ق	Qaf	Q	Qi
ك	Kaf	K	Ka
ل	Lam	L	El
م	Mim	M	Em
ن	Nun	N	En
و	Wau	W	We
ه	Ha	H	Ha
ء	Hamzah	’	Apostrof
ى	Ya	Y	Ye

Hamzah (ء) yang terletak di awal kata mengikuti vokalnya tanpa diberi tanda apa pun. Jika ia terletak di tengah atau di akhir, maka ditulis dengan tanda (’).

2. Vokal

Vokal bahasa Arab, seperti vokal bahasa Indonesia, terdiri atas vokal tunggal atau monoftong dan vokal rangkap atau diftong.

Vokal tunggal bahasa Arab yang lambangnya berupa tanda atau harakat, transliterasinya sebagai berikut:

Tanda	Nama	Huruf Latin	Nama
اَ	*fath}ah*	a	a
اِ	*kasrah*	i	i
اُ	*d}ammah*	u	u

Vokal rangkap bahasa Arab yang lambangnya berupa gabungan antara harakat dan huruf, transliterasinya berupa gabungan huruf, yaitu:

Tanda	Nama	Huruf Latin	Nama
ـَيْ	*fath}ah dan ya>'*	ai	a dan i
ـَوْ	*fath}ah* dan *wau*	au	a dan u

Contoh:

كَيْفَ : *kaifa*

هَوْ لَ : *haula*

3. *Maddah*

Maddah atau vokal panjang yang lambangnya berupa harakat dan huruf, transliterasinya berupa huruf dan tanda, yaitu:

Harakat dan Huruf	Nama	Huruf dan Tanda	Nama
ى َ... | ا َ...	*fath}ah* dan *alif* atau *ya>'*	a>	a dan garis di atas
ـِـــى	*kasrah* dan *ya>'*	i>	i dan garis di atas
ـُـو	*d}ammah* dan *wau*	u>	u dan garis di atas

مَاتَ : *ma>ta*

رَمَى : *rama>*

قِيْلَ : *qi>la*

يَمُوْتُ: *yamu>tu*

4. *Ta marbu>t}ah*

Transliterasi untuk *ta>' marbu>t}ah* ada dua, yaitu: *ta>' marbu>t}ah* yang hidup atau mendapat harakat *fath}ah, kasrah,* dan *d}ammah*, transliterasinya adalah [t]. Sedangkan *ta>' marbu>t}ah* yang mati atau mendapat harakat sukun, transliterasinya adalah [h]. Kalau pada kata yang berakhir dengan *ta>' marbu>t}ah* diikuti oleh kata yang menggunakan kata sandang *al-* serta bacaan

kedua kata itu terpisah, maka *ta>' marbu>t}ah* itu ditransliterasikan dengan ha (h).

Contoh:

رَوْضَـةُ الأَطْفَالِ : *raud}ah al-at}fa>l*
اَلْـمَـدِيْـنَـةُ اَلْـفَـاضِـلَـةُ : *al-madi>nah al-fa>d}ilah*
اَلْـحِـكْـمَـةُ : *al-h}ikmah*

5. *Syaddah* (*Tasydi>d*)

Syaddah atau *tasydi>d* yang dalam sistem tulisan Arab dilambangkan dengan sebuah tanda *ta¨di>d* (ـّ), dalam transliterasi ini dilambangkan dengan perulangan huruf (konsonan ganda) yang diberi tanda *syaddah*.

Contoh:

رَبَّـنَا : *rabbana>*
نَـجَّيْـنَا : *najjaina>*
اَلْـحَـقُّ : *al-h}aqq*
نُعِّـمَ : *nu"ima*
عَـدُوٌّ : *'aduwwun*

Jika huruf ى ber-*tasydid* di akhir sebuah kata dan didahului oleh huruf *kasrah* (ـِـيّ), maka ia ditransliterasi seperti huruf *maddah* menjadi i>.

Contoh:

عَـلِـيٌّ : 'Ali> (bukan *'Aliyy* atau *'Aly*)
عَـرَبِـيٌّ : 'Arabi> (bukan *'Arabiyy* atau '*Araby*)

6. Kata Sandang

Kata sandang dalam sistem tulisan Arab dilambangkan dengan huruf ال (*alif lam ma'arifah*). Dalam pedoman transliterasi ini, kata sandang ditransliterasi seperti biasa, al-, baik ketika ia diikuti oleh huruf *syamsiyah* maupun huruf *qamariyah*. Kata sandang tidak mengikuti bunyi huruf langsung yang mengikutinya. Kata sandang ditulis terpisah dari kata yang mengikutinya dan dihubungkan dengan garis mendatar (-).

Contoh:

اَلشَّـمْـسُ : *al-syamsu* (bukan *asy-syamsu*)
اَلزَّلْـزَلَـةُ : *al-zalzalah* (*az-zalzalah*)
اَلْـفَـلْسَـفَةُ : *al-falsafah*
اَلْـبِـلَادُ : *al-bila>du*

7. *Hamzah*

Aturan transliterasi huruf hamzah menjadi apostrof (') hanya berlaku

bagi hamzah yang terletak di tengah dan akhir kata. Namun, bila hamzah terletak di awal kata, ia tidak dilambangkan, karena dalam tulisan Arab ia berupa alif.

Contoh:

تَـأْمُـرُوْنَ : *ta'muru>na*
اَلـنَّـوْعُ : *al-nau'*
شَـيْءٌ : *syai'un*
أُمِـرْتُ : *umirtu*

8. Penulisan Kata Arab yang Lazim digunakan dalam Bahasa Indonesia

Kata, istilah atau kalimat Arab yang ditransliterasi adalah kata, istilah atau kalimat yang belum dibakukan dalam bahasa Indonesia. Kata, istilah atau kalimat yang sudah lazim dan menjadi bagian dari perbendaharaan bahasa Indonesia, atau sering ditulis dalam tulisan bahasa Indonesia, atau lazim digunakan dalam dunia akademik tertentu, tidak lagi ditulis menurut cara transliterasi di atas. Misalnya, kata al-Qur'an (dari *al-Qur'a>n*), alhamdulillah, dan munaqasyah. Namun, bila kata-kata tersebut menjadi bagian dari satu rangkaian teks Arab, maka harus ditransliterasi secara utuh. Contoh:

Fi> Z{ila>l al-Qur'a>n
Al-Sunnah qabl al-tadwi>n

9. *Lafz} al-Jala>lah* (الله)

Kata "Allah" yang didahului partikel seperti huruf *jarr* dan huruf lainnya atau berkedudukan sebagai *mud}a>f ilaih* (frasa nominal), ditransliterasi tanpa huruf hamzah.

Contoh:

دِيـْنُ اللهِ *di>nulla>h* بِـاللهِ *billa>h*

Adapun *ta>' marbu>t}ah* di akhir kata yang disandarkan kepada *lafz} al-jala>lah*, ditransliterasi dengan huruf [*t*]. Contoh:

هُـمْ فِيْ رَحـْـمَةِ اللهِ *hum fi> rah}matilla>h*

10. Huruf Kapital

Walau sistem tulisan Arab tidak mengenal huruf kapital (*All Caps*), dalam transliterasinya huruf-huruf tersebut dikenai ketentuan tentang penggunaan huruf kapital berdasarkan pedoman ejaan Bahasa Indonesia yang berlaku (EYD). Huruf kapital, misalnya, digunakan untuk menuliskan huruf awal nama diri (orang, tempat, bulan) dan huruf pertama pada permulaan kalimat. Bila nama diri didahului oleh kata sandang (al-), maka yang ditulis dengan huruf kapital tetap huruf awal nama diri tersebut, bukan huruf awal kata sandangnya. Jika terletak pada awal kalimat, maka huruf A dari kata sandang tersebut menggunakan huruf

kapital (Al-). Ketentuan yang sama juga berlaku untuk huruf awal dari judul referensi yang didahului oleh kata sandang al-, baik ketika ia ditulis dalam teks maupun dalam catatan rujukan (CK, DP, CDK, dan DR). Contoh:

Wa ma> Muh}ammadun illa> rasu>l

Inna awwala baitin wud}i'a linna>si lallaz\i> bi Bakkata muba>rakan

Syahru Ramad}a>n al-laz\i> unzila fi>h al-Qur'a>n

Nas}i>r al-Di>n al-T{u>si>

Abu>> Nas}r al-Fara>bi>

Al-Gaza>li>

Al-Munqiz\ min al-D}ala>l

Jika nama resmi seseorang menggunakan kata Ibnu (anak dari) dan Abu> (bapak dari) sebagai nama kedua terakhirnya, maka kedua nama terakhir itu harus disebutkan sebagai nama akhir dalam daftar pustaka atau daftar referensi. Contoh:

Abu> al-Wali>d Muh}ammad ibn Rusyd, ditulis menjadi: Ibnu Rusyd, Abu> al-Wali>d Muh}ammad (bukan: Rusyd, Abu> al-Wali>d Muh}ammad Ibnu)
Nas}r H{a>mid Abu> Zai>d, ditulis menjadi: Abu> Zai>d, Nas}r H{a>mid (bukan: Zai>d, Nas}r H{ami>d Abu>)

a.s.	=	*'alaihi al-sala>m*
H	=	Hijrah
M	=	Masehi
SM	=	Sebelum Masehi
l.	=	Lahir tahun (untuk orang yang masih hidup saja)
w.	=	Wafat tahun
QS …/…: 4	=	QS al-Baqarah/2: 4 atau QS A<li 'Imra>n/3: 4
HR	=	Hadis Riwaya

ABSTRACT

Name : Achmad Sochabat
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Title : Investigating the Technological Pedagogical Content Knowledge (TPACK) of EFL Teachers Based on School Status and Teachers Status at SMA/MA of Pangkep Regency

This study aims to describe the implementation and understanding of TPACK (Technological Pedagogical Content Knowledge) among English teachers in high schools (SMA/MA) in Pangkep Regency, focusing on differences based on teacher status and school status. TPACK is a framework that integrates three core components content knowledge, pedagogical knowledge, and technological knowledge required by teachers to teach effectively in the digital era.

A quantitative approach with a survey design was employed in this study, involving 58 English teachers from various SMA/MA in Pangkep Regency, consisting of 34 public schools and 10 private schools. Data were collected using a questionnaire measuring TPACK dimensions and information regarding teacher status (certified and non-certified) and school status (public or private).

The results of the analysis indicated that there were no significant differences in TPACK understanding between certified and non-certified teachers, as evidenced by a significance value of > 0.05. Similarly, school status had minimal influence on the optimal implementation of TPACK in the teaching process, with a significance value of < 0.05 except TPK aspect 0.024. These findings are expected to provide recommendations for educational policies and professional development programs for English teachers in the region to enhance technology-based teaching quality.

Keywords: *TPACK, Teacher Status, School Status.*

ABSTRAK

Nama : Achmad Sochabat
NIM : 2220203879102015

Judul Tesis : Menginvestigasi Teknologi pedagogi dan pengetahuan konten (TPACK) guru bahasa asing berdasarkan status sekolah dan status guru di SMA/MA di Kabupaten Pangkep

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Penelitian ini bertujuan untuk mendeskripsikan pemahaman dan implementasi TPACK (Technological Pedagogical Content Knowledge) pada guru Bahasa Inggris di SMA Kabupaten Pangkep, dengan fokus pada perbedaan berdasarkan status guru dan status sekolah. TPACK merupakan kerangka yang menggabungkan tiga komponen utama, yaitu pengetahuan konten, pengetahuan pedagogik, dan pengetahuan teknologi, yang diperlukan oleh seorang guru untuk mengajar secara efektif di era digital.

Penelitian ini menggunakan pendekatan kuantitatif dengan desain survei, yang melibatkan 58 guru Bahasa Inggris dari berbagai SMA/MA di Kabupaten Pangkep sebagai sampel yang terdiri dari 34 sekolah negeri dan 10 sekolah swasta. Data dikumpulkan menggunakan kuesioner yang mengukur dimensi TPACK, serta informasi mengenai status guru (sertifikasi dan non-sertifikasi) dan status sekolah (negeri ataupun swasta).

Hasil analisis menunjukkan bahwa tidak ada perbedaan level yang signifikan dalam pemahaman TPACK antara guru dengan status sertifikasi maupun non-sertifikasi dengan nilai signifikansi > 0.05. Selain itu, status sekolah juga tidak terlalu berpengaruh terhadap seberapa optimal implementasi TPACK dalam proses pembelajaran dengan rata-rata dengan nilai signifikansi < 0.05 kecuali aspek TPK < 0.024 . Temuan ini diharapkan dapat memberikan rekomendasi bagi kebijakan pendidikan dan program pengembangan profesional bagi guru Bahasa Inggris di daerah tersebut untuk meningkatkan kualitas pembelajaran yang berbasis teknologi.

Kata kunci: *TPACK, Status Guru, Status Sekolah.*

تجريد البحث

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موضوع الرسالة : التحقيق في معرفة المحتوى التربوي التكنولوجي (TPACK) لدى معلمي اللغة الإنجليزية كلغة أجنبية (TPACK) بناءً على حالة المدرسة وحالة المعلمين في المدرسة المتوسطة العالية والمدرسة العالية في منطقة بانجكيب

تهدف هذه الدراسة إلى وصف فهم وتطبيق المعرفة بالمحتوى التربوي التكنولوجي (TPACK) بين معلمي اللغة الإنجليزية كلغة أجنبية في المدرسة المتوسطة العالية والمدرسة العالية في منطقة بانجكيب، مع التركيز على الاختلافات القائمة على حالة المعلم وحالة المدرسة. تُعدّ المعرفة بالمحتوى التربوي التكنولوجي والمعارف التربوية والمعارف التكنولوجية إطار عمل يجمع بين ثلاثة مكونات رئيسية، وهي المعرفة بالمحتوى والمعرفة التربوية والمعرفة التكنولوجية التي يحتاجها المعلم للتدريس بفعالية في العصر الرقمي.

استخدمت هذه الدراسة منهجًا كميًا بتصميم استقصائي شمل 58 معلمًا للغة الإنجليزية من مختلف المدارس المتوسطة العالية والمدارس العالية في منطقة بانجكيب كعينة تتكون من 34 مدرسة حكومية و10 مدارس خاصة. جُمعت البيانات باستخدام استبيان يقيس أبعاد TPACK، بالإضافة إلى معلومات عن حالة المعلم الذي يملك شهادة تربوية والمعلم الذي لا يملكها وحالة المدرسة عامة أو خاصة.

أظهرت نتائج التحليل أنه لم يكن هناك فرق كبير في مستوى فهم TPACK بين المعلمين الحاصلين على شهادة وغير الحاصلين على شهادة مع قيمة دلالة > 0.05. بالإضافة إلى ذلك، لا تؤثر حالة المدرسة أيضًا بشكل كبير على كيفية تنفيذ TPACK على النحو الأمثل في عملية التعلم بمتوسط قيمة دلالة < 0.05 باستثناء جانب TPK > 0،024. من المتوقع أن تقدم النتائج توصيات للسياسات التعليمية وبرامج التطوير المهني لمعلمي اللغة الإنجليزية في المنطقة لتحسين جودة التعلم القائم على التكنولوجيا.

الكلمات الرائسية: TPACK، حالة المعلم، حالة المدرسة..

CHAPTER I

INTRODUCTION

A. *Background of the Research*

In the digital era, schools face challenges in using technology to enhance learning. Despite technology becoming an integral part of students' daily lives, its use in education often remains limited and suboptimal. Teachers frequently find it challenging to integrate technology in ways that genuinely enhance the teaching and learning process. Designing and implementing learning experiences by maximizing the use of technology has become an urgent need nowadays.[1]

The independent curriculum requires teachers to adapt and improve their teaching skills with technology, this curriculum is designed to give schools and teachers in determining teaching methods that suit the needs of their students. An important aspect of the Independent Curriculum is the use of technology as a tool to enhance the learning process. Teachers are expected to understand and integrate technology to create more engaging and learning experiences for students. The need for technology integration in the teaching and learning process has became as an isntrument of technological advancements. [2] The use of technology in the classroom enables EFL teachers to manage the teaching and learning process

[1] C. Nantha, et.al. Enhancing ICT Literacy and Achievement: A TPACK-Based Blended Learning Model for Thai Business Administration Students. Educ. Sci., 14, 455. https:// doi.org/10.3390/educsci14050455 (2024)

[2] A. Sulaimani, P. Sarhandi & M. Buledi. Impact of CALL in-House Professional Development Training on Teachers' Pedagogy: An Evaluative Study. Cogent Education, *4*(1), 1–12. (2017*)*.

efficiently[3]. Most experts argue the majority of scholars feel that technology has been an essential part of education[4]. Considering how important technology is, it is clear that EFL teachers should be able to use it effectively when teaching English.

In theory, proper use of technology in teaching offers many benefits if used correctly such as. Firstly, it is possible that children may receive education from teachers in a way that is more effective, affordable, and of high quality. Secondly, when it comes to using computers as learning tools, technology provides instructors and students with support and additional resources[5]. Finally, it is worth noting that technology-based teaching and learning can play an important role in enhancing the learning process. After considering all that has been discussed so far, it seems clear that incorporating technology into the educational process could be beneficial, yet its implementation often faces various challenges that hinder effective teaching.

Teachers face various obstacles in integrating technology into teaching such as a lack of deep understanding of how to integrate technology with teaching methods.[6] Additionally, infrastructural limitations, such as unequal access to

[3] M. G. Chamorro & L. Rey. Teachers' Beliefs and the Integration of Technology in the EFL Class Las Creencias De Los Profesores De Inglés Sobre La Integración De La Tecnología En La Clase. Colombian Journal for Teachers of English, (October), 51–72. Retrieved from https://files.eric.ed.gov/fulltext/EJ1128086.pdf .(2013).

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[5] C. M. H. Jorge,et. al. Use of the ICTs and the Perception of E-Learning Among University Students: A Differential Perspective According to Gender And Degree Year Group. Interactive Educational Multimedia, 7, 13-28. (2003).

[6] P. Mishra & M. J. Koehler. Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge. Teachers College Record, *108(6)*, 1017–1054. (2006).

technological devices and reliable internet, pose significant obstacles. Insufficient training support and limited time to learn new technologies further complicate the situation.[7] Consequently, despite the vast potential of technology to enrich the teaching and learning process, many teachers struggle to utilize it optimally to enhance student learning outcomes. Additionally, in order to incorporate technology into their teaching effectively, teachers need to understand its pedagogical purpose.[8] The incorporation is crucial to consider not only teachers' instructional knowledge and skills (pedagogy) and the content they teach, but also the tools (technology) they use while teaching.[9] Teachers' technical pedagogical content knowledge must be included in effective technology deployment in education, particularly in EFL contexts. By using the TPACK model, educators may leverage pre-existing knowledge to foster and improve learning outcomes. In particular, the TPACK framework elucidates the effective use of technology tools to enhance understanding and retention of knowledge.

A lot of teachers find the un-ideal conditions related to the use of technology, such as a lack of understanding, infrastructural limitations, insufficient training, and limited time for learning new technologies. Teachers need technical or framework pedagogical content knowledge for effective

[7] Xie, K., Kim, M. K., Cheng, S. L., & Luthy, N. C. Teacher Professional Development through Digital Content Evaluation. Educational Technology Research and Development, 65(4), (2017). 1067-1103.

[8] Hennessy, S., Ruthven, K & Brindley, S. Teacher Perspectives on Integrating ICTinto Subject Teaching: Commitment, Constraints, Caution, and Change, Journal of Curriculum Studies, 37:2, (2005). 155-192, DOI:10.1080/0022027032000276961

[9] Jones, A., & Moreland, J. Enhancing Practicing Primary School Teachers' Pedagogical Content Knowledge in Technology. International Journal of Technology and Design Education, 14, (2004). 121-140.

technology use into their lessons is called TPACK[10]. TPACK use in the learning process is challenging and highly rewarding. Among the numerous variables that affect this application's success is the teacher. In the classroom, teachers play a crucial role in controlling the learning activities. Every instructor is unique, and this has an impact on how the learning process is conducted. Teachers were one of the things that the education system actually required in order to accomplish its goals. In Indonesia, attempts to shape national growth were significantly aided by teachers. Teachers must also be knowledgeable in all areas linked to education. This means that educators need to act professionally when performing their tasks and obligations regarding the school's teaching and learning process and the information they possess. Teachers must be capable of being well-prepared, having mastered the content they would be teaching, and developing a positive attitude and excellent behavior in themselves.[11]

It was studied that several factors influence the achievement of TPACK including school status and teacher status. In Indonesia, schools can be classified as either public or private according to their educational status. Private schools are run by foundations, whereas public schools are run directly by the government. When it comes to directly regulating public school's vs private schools, the government has more power. The government is at the core of the public-school administrative system, which leads to government influence in all areas, including curriculum. Naing found that EFL teachers' TPACK mastery based on school

[10] Öz, H. Assessing Pre-service English as a Foreign Language Teachers' Technological Pedagogical Content Knowledge. International Education Studies, 8(5), (2015). 119-130. http://dx.doi.org/10.5539/ies.v8n5p119

[11] Roslina, Tekky Geriasti Pega, Fernandes Arung. The Differences between Certified and Non-Certified English Teachers in the Teaching and Learning Process, vol 2 p (1) 2017.

status in Junior high school showed no significant difference in TPACK mastery between teachers in public schools and private school. Likewise, the status of teachers is proven to be such as Kumala found that civil servant teachers showed slightly higher scores compared to non-civil servant teachers. Goldhaber stated High school teacher certification status impact students' achievement. Then, Anthony concluded there was a significant effect of teacher qualifications on TPACK implementation.

The achievement of TPACK is influenced by school status and teacher status. In Indonesia, schools are either public or private. Private schools are run by foundations, while public schools are run by the government. The government has more power over public schools than private schools. The government is at the core of the public-school administrative system, which leads to government influence in all areas, including curriculum.[12] Naing found that EFL teachers' TPACK mastery based on school status in junior high school showed no significant difference between teachers in public and private schools.[13] Likewise, Kumala found that civil servant teachers showed slightly higher scores than non-civil servant teachers.[14] Goldhaber stated that high school teacher certification

[12] S.R. Anderson, S.R. A-Morphous Morphology. Cambridge. Cambridge University Press, 1992). p. 218

[13] Ince Rezky Naing and Pangesti Wiedarti. Scrutinizing EFL Teachers' TPACK Mastery Level in Teaching English Based on Gender and Schools Status Disparities. Al-Ishlah: Jurnal Pendidikan Vol.15, 2 (2023), pp. 1859-1870. DOI: 10.35445/alishlah.v15i2.2630

[14] F.N. Kumala, A. Ghufron & P. Pujiastuti. Elementary School Teachers' TPACK Profile In Science Teaching Based On Demographic Factors. International Journal of Instruction, 15(4), (2022). 77-100. https://doi.org/10.29333/iji.2022.1545a

status impacts students' achievement.[15] Anthony concluded that teacher qualifications impact TPACK implementation.[16]

However, teacher and school status need to be studied more deeply in seeking the influence of TPACK on the ability of teachers in integrating ICT which can be reflected in teacher TPACK. Asaolu & Fashanu found that private schools are more complete in ICT and more supportive of students' activities in accessing new information than public schools.[17] Moreover, Castera stated that despite the profusion of studies was based on primary and secondary school teachers, there is a lack of knowledge about factors influencing university teachers' TPACK.[18] Therefore, researcher will apply similar research at a different level from previous studies, namely at the senior high school level in Pangkep Regency. Little empirical research has focused on the form of teachers' capacity relate to the status (certification or not) in using TPACK impacted teachers' teaching capability and achievement in public and private schools which have not been studied in previous research.

Since technology incorporation occurs in the classroom, more research is needed on factors influencing teachers' ability to integrate ICT in-service EFL

[15] D.D. Goldhaber & D.J Brewer. Does Teacher Certification Matter? High School Teacher Certification Status And Student Achievement. Educational Evaluation and Policy Analysis, 22 (2), 129–145. (2000).

[16] M. K. Antony, et.al. Teacher's TPACK profile: The Effect Of Teacher Qualification And Teaching Experience. In *Journal of Physics: Conference Series* (Vol. 1397, No. 1, p. 012054). IOP Publishing. (2019).

[17] O.S Asaolu & T.A Fashanu. Adoption of ICT and its Comparative Impact On Private And Public High Schools In Lagos State, Nigeria. International Journal of Science & Emerging Technologies, 3 (1), 1-6. (2012)

[18] Jérémy Castéra, et al.. Self-reported TPACK of Teacher Educators Across Six Countries in Asia and Europe. Education and Information Technologies, 2020, 25, pp.3003-3019. ff10.1007/s10639-020-10106-6ff. ffhal02444776f

teachers' TPACK levels in senior high school should be assessed. Thus, the researcher intends to carry out research which is entitled: Investigating the technological pedagogical content knowledge (TPACK) of EFL teachers based on school status and teachers 'status**.**

B. ***Research Questions***

The above background underlies the emergence of several important questions in the research as follows:

1. Is there a difference in the level of mastery of TPACK between certified and non-certified senior high school EFL teachers in Pangkep regency?
2. Is there a difference in the level of mastery of TPAK between public and private school?
3. What's TPACK mastery level of certtified and non-certified teacher?
4. What's TPACK mastery level of public and private school?

C. ***Objective of the Researchs***

In line with the research questions above, the objectives of this study are described as follows:

1. To determine whether there is a significant difference in TPACK mastery levels between certified and non-certified senior high school EFL teachers in Pangkep Regency.
2. To investigate whether there is a significant difference in TPACK mastery levels between senior high school EFL teachers in public and private schools in Pangkep Regency.
3. To examine the TPACK mastery level of certtified and non-certified teacher.

4. To examine the TPACK mastery level of public and private school.

D. *Significance of the Research*

In light of the research objectives, the researcher has identified potential avenues for further exploration, which could be considered as the research significance. This research significance can be broadly classified as follows:

1. Theoretically

The previous studies have explored many theories regarding TPACK. This research has the potential to make a valuable contribution to the academic literature on the mastery of Technological Pedagogical Content Knowledge (TPACK) among senior high school EFL (English as a Foreign Language) teachers in Pangkep Regency. By investigating TPACK mastery in general, and based on teacher status (certified and non-certified) as well as school status (public and private), this study may be able to reveal patterns and factors influencing technological pedagogical competence. It is hoped that the findings will contribute to the development of educational theories related to the integration of technology in foreign language teaching and strengthen the theoretical foundation concerning the impact of professional qualifications and institutional environments on TPACK mastery.

Specifically, this research may contribute to the development of new conceptual models or the reinforcement of existing ones related to professional development for teachers in the digital age. By identifying differences in TPACK mastery based on teacher certification and school context, the study will contribute to the theoretical understanding of how factors such as

certification and institutional context shape teacher competence. This could also encourage further research to identify more effective and contextual TPACK development strategies.

CHAPTER II

REVIEW OF RELATED LITERATURE

A. *Previous Research Findings*

Some previous studies have been done in conducting TPACK skills relate to school status dan teacher status describe briefly as follow:

The first research was from Naing in 2023, whose research investigated under the title "Scrutinizing EFL Teachers' TPACK Mastery Level in Teaching English Based on Gender and Schools Status Disparities*"*. This study conducted quantitative study with a survey method, the data was colleted by questionnaire offline and online. The finding described that results imply that EFL teachers' TPACK knowledge and mastery are related to the proper implementation of ICT in classroom instruction. Then, EFL teachers' TPACK mastery based on school status showed no significant difference in TPACK mastery between teachers in public schools and private schools.[19]

Secondly, the research of Kumala. Et.al in 2022 focuses on Teachers' TPACK Profile in Science Teaching Based on Demographic Factors. The research was aimed at analyzing the TPACK value of elementary school teachers in science teaching based on teacher demographic factors (gender, age, employment status, and teaching experience) and investigating the relationship between teacher demographic factor and teachers' TPACK value. The data was collected using 4 Likert scale questionnaire and interview and analyzed using Confirmatory Factor

[19] Ince Rezky Naing and Pangesti Wiedarti. Scrutinizing EFL Teachers' TPACK Mastery Level in Teaching English Based on Gender and Schools Status Disparities. Al-Ishlah: Jurnal Pendidikan Vol.15, 2 (2023), pp. 1859-1870. DOI: 10.35445/alishlah.v15i2.2630

Analysis (CFA). She found that in terms of employment status, civil servant teachers showed slightly higher scores compared to non-civil servant teachers. Regarding to the teaching experience, the teacher's TPACK is proportional to the span of their teaching experience. In general, results indicated that there is relationship between teacher demographics factor and their TPACK.[20]

The third study was implemented by Anthony in 2019 about teacher's tpack profile: the affect of teacher qualification and teaching experience. The aim of this study was to determine the affect of teacher qualifications and teaching experience on biology teacher's TPACK in the Magelang City. This was a survey research. The data collection technique uses TPACK test instruments. The finding showed that the teacher qualifications and teaching experience have a significant affect on biology teachers's TPACK in Magelang City.[21]

Nextly, A study by Istiningsih in 2022 about Impact of ICT Integration on the Development of Vocational High School Teacher TPACK in the Digital Age 4.0. It was investigated the impact of the integration of information and communication technology (ICT) on the development of the Technological Pedagogical Content Knowledge (TPACK) framework for Vocational High School teachers in the Digital Era 4.0, this research will look at the integration of ICT. It was used was a qualitative case study. The findings from this study reveal that integrating ICT into TPACK, as measured in this research project, has a

[20] F.N. Kumala, A. Ghufron & P. Pujiastuti. Elementary School Teachers' TPACK profile in Science Teaching Based On Demographic Factors. International Journal of Instruction, 15(4), (2022). 77-100. https://doi.org/10.29333/iji.2022.1545a

[21] M. K. Antony, et.al. Teacher's TPACK profile: The Affect Of Teacher Qualification And Teaching Experience. In *Journal of Physics: Conference Series* (Vol. 1397, No. 1, p. 012054). IOP Publishing. (2019).

positive impact on teachers, with teacher experience and status certainly playing a role.[22]

The fifth researched by Voithofer in 2019 studied about Factors that influence TPACK adoption by teacher educators in the US. The study employs descriptive statistics and regression analysis to provide a general description of the characteristics of these teacher educators, their Technological, Pedagogical, and Content Knowledge (TPACK) adoption, and the relationships between individual and institutional factors and their TPACK adoption. The results of the research indicate that TPACK adoption is generally low among these teacher educators and that there are multiple personal and institutional factors that influence TPACK adoption. The participants had a significant amount of both K-12 and teacher education experience and demonstrated a high level of comfort with their technological knowledge.[23]

The sixth study was about differential analysis of teachers' technological pedagogical content knowledge (TPACK) abilities according to teaching stages and educational levels. It was researched by Li Suqi in 2022. The study aimed to gain insight into the level of teachers' TPACK abilities, with a particular focus on whether any differences in such abilities might be observed according to the different teaching stages and teachers' educational levels. An online questionnaire was distributed to the target teachers. The results indicated that teachers' TPACK abilities were generally quite strong. Moreover, it was observed that there were

[22] Istiningsih, Impact of ICT Integration on the Development of Vocational High School Teacher TPACK in the Digital Age 4.0. World Journal on Educational Technology: Current Issues. 14(1), (2022). 103-116. https://doi.org/10.18844/wjet.v14i1.6642

[23] Voithofer, Rick, Factors that Influence TPACK Adoption By Teacher Educators in the US .Education Tech Research Dev. https://doi.org/10.1007/s11423-019-09652-9. (2019)

notable variations in teachers' TPACK abilities across different teaching stages and educational levels. It would appear that teachers with different teaching stages have significant differences in their content knowledge (CK), pedagogical knowledge (PK), technological pedagogical knowledge (TPK), technological content knowledge (TCK), and technological pedagogical content knowledge (TPACK). However, no significant differences were found between Technological Knowledge (TK) and Pedagogical Content Knowledge (PCK).[24]

Lastly, Jen, et.al in 2016 have conducted a Science teachers' TPACK-Practical: Standard-setting using an evidence-based approach. This study explored a standard-setting method using questionnaire of item response theory to cross-validate ranks of proficiency levels and examine in-service and pre-service science teachers' knowledge about and application of TPACK-P in Taiwan. He found that the teachers at the same developmental level despite different status are assumed to share knowledge or teaching performance at the same level of complexity. Qualitative data can provide information that reveals distinctive features and identifies nuances between levels.[25]

Though some researchers have done some previous studies about TPACK, a few researches focusing on TPACK in the level of senior high school in Indonesia. Besides, the research about TPACK is rarely conducted in South Sulawesi. Hence, the researcher must explore how the master of TPACK applications in senior EFL teachers perceive in South Sulawesi. Previous research

[24] Rick Voithofer, Factors that influence TPACK adoption by teacher educators in the US .Education Tech Research Dev. (2019). https://doi.org/10.1007/s11423-019-09652-9.

[25] Sung-Hau Jen, et.al, Science teachers' TPACK-Practical: Standard-setting using an evidence-based approach, Computers & Education, Vol. 95, (2016), 45-62, https://doi.org/10.1016/j.compedu.2015.12.009.

did not find significant differences in TPACK mastery between public and private school teachers, the proposed study delves deeper into this aspect, aiming to uncover potential nuances or overlooked factors that may contribute to TPACK disparities between these groups. Secondly, the proposed study specifically targets TPACK based on teacher status and school status. By isolating these variables, the research aims to provide a clearer understanding of how factors like certification and institutional setting impact TPACK mastery among English as a Foreign Language (EFL) teachers. Furthermore, this research approach to uncover potential disparities in TPACK mastery between certified and non-certified teachers, shedding light on equity issues in professional development and training programs. Overall, the proposed research fills a gap in the literature by addressing the intersection of school status and teacher status in relation to TPACK mastery among EFL teachers, offering valuable insights for educational policymakers, school administrators, and researchers in Pangkep Regency and beyond.

B. *Some Pertinent Ideas*

a. Teaching English in Senior High School

In Indonesia, English language instruction for non-native speakers is a mandatory component of the educational curriculum.[26] The foundational knowledge of the English language is typically acquired during the senior high school English curriculum. Consequently, in order for the pupils to achieve their learning objectives, it is essential that they maintain a consistent course of study. One strategy for maintaining motivation among students is to ensure that their

[26] A. Lauder. The Status and Function of English in Indonesia: A Review of Key Factors: *Makara, Sosial Humaniora.* 12 (1), (2008). 9-20. https://www.researchgate.net

expectations are met.[27] Consequently, the instructor must facilitate a sense of comfort, ease, and enthusiasm among the students regarding the teaching and learning process. To summarize, the instructor should design lessons with the students in mind, ensuring that they find the subject matter engaging and worthy of their attention. It is of the utmost importance that students are able to experience the full range of positive emotions associated with being a citizen, including feelings of existence, respect, acceptance, importance, and self-assurance.

The concept of development mindset theory is of fundamental importance to the subject matter required for this course. Those with a growth mindset believe that intellectual abilities can be developed and enhanced through effort and perseverance. They view failure as a catalyst for continued learning and growth.[28] The students' tenacity in their academic pursuits may have been influenced by their aspiration to emulate the achievements of others and by constructive feedback that assisted them in improving their performance.[29] In conclusion, it is of paramount importance to maintain students' high motivation in order to achieve the desired outcomes of the required subjects. This can be achieved by fostering a sense of comfort and ease during the teaching and learning process.

The senior high school student body encompasses individuals between the ages of 16 and 19. This suggests that they have not yet reached the age of

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[27] J. Falout, Coping with Demotivation: EFL Learners' Remotivation Process: *The Electronic Journal for English as a Second Language.* 16 (3), (2012). 1-29. https://tesl-ej.org

[28] E. Rhew, J.D. Piro, P. Goolkasian & Cosentino. The Effects of a Growth Mindset on Self-efficacy and Motivation: *Cogent Education.* 5 (1), (2018). 1-16. https://doi.org/10.1080/2331186X.2018.1492337

[29] S.A. Saunders, The Impact of a Growth Mindset Intervention on the Reading Achievement of At-risk Adolescent Students. Ann Arbor, MI: ProQuest LLC. (2013).

majority. The teaching of English to teenagers differs from the teaching of the same language to adults or to younger students. Due to the unique characteristics of adolescence, including the onset of puberty, uncertainty, self-consciousness, physical and mental growth, and the changing bodies and minds of teenagers, it is not uncommon for them to exhibit a distinct set of traits.[30] Furthermore, Brown postulates that they exhibit distinctive cognitive development characteristics, as delineated below:

1) Around the age of twelve, the capacity for abstract operational cognition is enhanced by intellectual capability. It seems reasonable to posit that teenagers possess a markedly enhanced capacity for intellectual processing. Additionally, they may engage in logical reasoning. To rephrase, the linguistic metalanguage plays a significant role. Nevertheless, the personal willingness of teenagers to complete the assignments is the determining factor in the success of their academic endeavors.
2) Attention spans are lengthening. The outcome is the result of intellectual development. Every student is unique due to their upbringing and surroundings. They may be shorter or taller than other teenagers. It is important to note that the variety of sensory input remains a significant factor.
3) Early teens still require sensory input during this period of transition from the early learning stage to the next stage of development. Nevertheless, the fundamental quality of appealing to all five senses is diminished by the

[30] H.D. Brown, Teaching by Principles: An Interactive Approach to Language Pedagogy (2nd edition). (Longman. 2000).

growing capacity for abstraction. During this period, factors related to ego, self-image, and self-esteem reach their peak.

Adolescents are highly attuned to how others perceive their mental capacities, emotional states, and physical changes. Consequently, it is of the utmost importance that educator's endeavor to maintain their pupils' robust self-esteem by adhering to the aforementioned recommendations.

a) Refraining from embarrassing kids in any way.
b) Highlighting each person's abilities and advantages.
c) Accepting inaccuracies and other faults.
d) Reducing the focus on peer rivalry.
e) Promoting small-group projects where teens may take calculated risks with ease.

4) The capacity of high school students to occasionally deviate from the immediate context of communication in order to focus on grammatical or vocabulary aspects is becoming increasingly similar to that of adults.

Consequently, educators must implement specific pedagogical approaches when instructing high school students in English, given the distinctive characteristics of this age group. It is essential that the scheduled activities capture the children's attention. This approach is consistent with the principles of second language acquisition theory (L2 Acquisition).[31] The most crucial elements are the comprehensibility of input and the meaningfulness of interaction in the target language, situated within a realistic context. Krashen posits that the acquisition of

[31] S. D. Krashen, *Second Language Acquisition and Second Language Learning*. (Pergamon Press Inc. 1981).

a second language is more significant than the act of learning per se, as pupils may store L2 knowledge in their long-term memory. To summarize, high school English instruction should consider the individual needs of students within the context of their specific circumstances. In addition to the typical traits of teenagers, each student possesses unique qualities. Furthermore, students differ in terms of their intellectual abilities and learning preferences and styles.[32]

It is possible for an individual to demonstrate exceptional proficiency in piano performance, yet exhibit limited aptitude in mathematical reasoning, or vice versa. While some students may prefer to listen to audio, others may prefer to engage in the creation of activities. It is therefore recommended that educators create engaging lesson plans and activities that involve all students in the teaching and learning process. Such an approach would therefore foster a sense of belonging and self-worth in students, while also encouraging them to embrace their individuality.

Furthermore, the objective of English language instruction is to facilitate the acquisition of proficiency in the language, enabling students to communicate effectively in a range of real-world contexts. Furthermore, the objective of senior high school language instruction is to provide students with the opportunity to apply their understanding of English texts to comprehend and apply procedural, conceptual, and factual knowledge related to observable phenomena and events through speaking, listening, reading, and writing in a concrete setting. *(Peraturan*

[32] H. Gardner, Frequently Asked Questions – Multiple Intelligences and Related Educational Topics.(2013). https://howardgardner01.files.wordpress.com/2012/06/faq_march2013.pdf

Menteri Pendidikan dan Kebudayaan Republik Indonesia, Nomor 22 Tahun 2016 Tentang Standar Proses Pendidikan Dasar dan Menengah).

b. Challenges for English Teachers in Teaching in Senior High Schools (SMA)

Teaching English at the senior high school level is a complex challenge.[33]Although English has become a compulsory subject in many countries, including Indonesia, teachers still face various obstacles in their efforts to develop students' English language skills.[34] These challenges range from motivation issues, limited facilities, to the gap between theory and practice:

1) Low Student Motivation

One of the biggest challenges faced by high school English teachers is the lack of student motivation. Many students feel that English is only important for exams or graduation, not for the development of broader communication skills. Students often do not see the direct relevance between English lessons and their daily lives, thus reducing their interest in learning seriously.

2) Limited Facilities and Learning Media

Limited facilities, such as lack of access to technology or adequate learning resources, pose a major challenge to teaching English in many schools. Although the development of information technology has provided many opportunities to improve the quality of learning, not all schools have enough infrastructure to

[33] Gao, X. (2010). "Challenges in English Language Teaching and Learning: A Case Study of English Teachers and Students in China." *Language Teaching Research*.

[34]Puspitasari, D., & Setiawan, A. (2019). "The Challenges of Teaching English in Indonesian Senior High Schools: Teachers' Perspectives." *Indonesian Journal of English Language Teaching*.

make the most of it. Teachers must often innovate with traditional methods that may not always appeal to students.

3) Differences in Student Ability

Within a class, there is often a significant difference in students' English ability. Some are already quite proficient in speaking or writing, while others struggle to understand the basics of grammar or vocabulary. Facing a class with this heterogeneous ability level makes teachers have to be more creative in devising teaching methods that can reach all students, both those who grasp the material quickly and those who need more time and guidance.

4) Lack of Speaking Practice

In many schools, the main focus in teaching English often lies on writing and reading skills, while speaking skills do not get enough attention. This hinders students' ability to communicate orally in English. In fact, speaking skills are very important for everyday life, especially in the era of globalisation which increasingly emphasizes international communication.

5) Influence of Mother Tongue (First Language)

Students' mother tongue can also be a barrier in learning English. Students are often affected by the structure of their mother tongue, which is different from English. For example, in Indonesian, the use of nouns or adjectives can be applied differently than in English. This can lead to errors in understanding and correct use of grammar in English.

6) Cultural Challenges

Teaching English in high school is also faced with cultural challenges.[35] In some areas, local culture is very dominant, so students feel more comfortable using their mother tongue compared to foreign languages. This sometimes limits students' ability to communicate effectively in English, even though they know the basics of grammar and vocabulary.

c. Strategies for Overcoming the Challenges of Teaching English

To overcome these challenges, high school English teachers can use several strategies, such as:[36]

1) Increase Motivation: Relating lessons to students' daily lives and professional needs can increase their motivation to learn. Using engaging media, such as films, music and actual articles, can make lessons more relevant and fun.
2) Technology Utilisation: Utilising English learning apps or online platforms can help overcome facility limitations. This way, students can learn independently outside of class hours.
3) Integrated Learning: Using an integrated approach that combines speaking, writing, reading and listening skills in one learning activity can improve students' overall communication skills.

[35] Widodo, H. P. (2006). "English Language Teaching in Indonesia: Trends and Challenges." *TEFLIN Journal*.

[36] Rahmat, D. A. (2018). "The Challenges of Teaching English in Senior High Schools in Indonesia: A Review of Literature." *Jurnal Pendidikan dan Pengajaran*.

4) Diverse Teaching: Using a variety of different teaching methods according to students' ability levels, such as group work, language games and project-based teaching.

With the right strategies and an understanding of the challenges, teaching English in high school can be more effective, motivate students, and improve their overall language skills.

b. Technology Integration in Teaching English

1) Definition of Technology Integration

The use of technology in teaching and learning has gained considerable traction among academics. In order to assist, enrich, inspire, and produce learning, technology integration is defined as the use of the internet, computers, CD-ROMs, interactive media, satellites, teleconferencing, and other technological means in instruction. [37] In addition, the term "technology integration" is defined as the effective and productive integration of technology into all aspects of the curriculum, infrastructure, and learning and teaching environments.[38] The process of integrating technology into teaching and learning methods is referred to as technology integration. This integration is undertaken with the objective of satisfying the learning objectives, unit, and standards of each lesson. These concepts lead to the conclusion that technology integration is the application of technological instruments to improve and facilitate students' educational

[37] D. H. Redmann & J. W. Kotrlik. Analysis of Technology Integration in the Teaching-Learning Process in Selected Career and Technical Education Programs. Journal of Vocational Education Research, 29(1). (2004).

[38] H. I. Yalin, S. Karadeniz & S. Sahin, Barriers to Information And Communication Technologies Integration Into Elementary Schools In Turkey. Journal of Applied Sciences, 7(24), (2007). 4036ñ4039.

experiences and to develop students who actively participate in the achievement of learning goals.[39]

In light of the numerous benefits that technology offers in the context of teaching and learning, it is imperative to integrate it into the modern educational landscape. The utilization of technology may prove to be a valuable instrument for the generation of meaningful projects that motivate students to address challenges in a critical and analytical manner. The classroom may be redesigned and reorganized using technology to create an environment conducive to the development of higher-order thinking abilities.[40] Furthermore, the advent of technology has facilitated greater student collaboration. The act of working together is a highly effective learning technique. Students collaborate in groups to complete tasks or read each other's work in order to share knowledge.[41] The integration of technology in the classroom has the potential to enhance student motivation, foster stronger social connections, improve academic outcomes, facilitate more effective learning, and heighten overall engagement.

The multifaceted structure of technology integration in education is comprised of a number of elements and indicators. In a similar vein, both technological and human resources exert an influence on technology integration. In fact, integrating technology into the classroom presents significant challenges

[39] M. Z. Ramorola, Challenge of Effective Technology Integration Into Teaching And Learning. Africa Education Review, 10(4), (2014). 654–670. https://doi.org/10.1080/18146627.2013.853559

[40] S. Kurt, Technology Use In Elementary Education in Turkey: A Case Study. New Horizons in Education, 58(1), (2010). 65-76

[41] H. Keser, H. Uzunboylu & F. Ozdamli, The Trends In Technology Supported Collaborative Learning Studies In 21st Century. World Journal on EducationalTechnology, 3(2), (2012). 103-119.

for educators at all levels of the educational system. These challenges include acquiring new technology, modifying curricula and instructional strategies to incorporate innovative teaching resources, and navigating the complexities of integrating technology into existing knowledge systems. The interaction between new and old information, teachers' desire to adopt new technology, teachers' weaker position in employing new technology, and integrating technology into teachers' current knowledge system are four areas where obstacles exist.[42]

The study conducted by Taopan, Drajati, and Sumardi revealed a number of noteworthy obstacles to the successful integration of technology. These include the absence of technology policies, technophobia, inadequate resources, a dearth of qualified technology educators, technical and maintenance issues, security and risk issues, low parental involvement, time constraints, and computer jargon. The majority of instructors utilize technology without considering the implications of pedagogy and content. These difficulties frequently manifest across all educational domains.[43]

This research demonstrates that, in order to significantly impact the use of technology, which is a crucial duty for educators, the process of technology integration must be executed intentionally and methodically.

c. Teaching English with Technology

In the field of English language education, the integration of technology is a crucial aspect. It is conceivable that students may encounter technology in the

[42] S. Liu, et.al. TPACK: A New Dimension to EFL Teachers' PCK. Journal of Education and Human Development, (2014). 681-682.

[43] L.L. Taopan, N. A. Drajati, Sumardi. Tpack Framework: Challenges And Opportunities In Efl Classrooms. Research and Innovation in Language Learning Vol. 3(1) 2020 pp. 1-22

context of English more frequently. In order to provide students with greater opportunities to utilize and develop language, it is imperative that teachers make use of technology. When instructing students in the English language, educators should integrate technology in a purposeful and strategic manner. Furthermore, it enables educators to assess student performance without temporal or spatial constraints, fostering a more connected and collaborative relationship between teachers and students. Teachers may engage students in a greater variety of activities at any time and from any location.

English is not a commonly used language for everyday communication in Indonesia, where it is considered a foreign language. This language is now utilized on a global scale. Consequently, it motivates students to learn English in an effective manner. This makes the use of technology to study English in an EFL environment both encouraged and necessary. The use of a variety of online and technological resources assists students in learning English.[44] Because a strong TPACK may influence communicative language instruction, implementing the TPACK framework in an EFL class motivates instructors to use technology successfully.

The integration of technology in English language teaching (ELT) is gaining importance as it allows teachers to create engaging, dynamic, and interactive learning experiences.

[44] S. Liu. TPACK: A New Dimension to EFL Teachers' PCK. Journal of Education and Human Development, (2014). 681-682.

Here are the various ways technology requires English language teachers to integrate technology in English language learning including the benefits, tools and possible challenges teachers may face:

1) The Role of Technology in Language Learning

Technology enhances language learning by providing engaging and accessible digital tools, apps, and online resources for students of all ages.[45]

a. Increased Engagement: Interactive platforms like games, quizzes, and video-based learning effectively engage students and encourage active participation in lessons.[46]
b. Access to Authentic Materials: Technology enables students to access authentic English-language content like movies, podcasts, and articles, enhancing their listening, reading, and vocabulary skills in real-world contexts.
c. Personalized Learning: Adaptive learning technologies enable students to progress at their own pace, revisiting challenging concepts or advancing more quickly when they are ready.
d. Collaboration and Communication: Online platforms enable students to collaborate with global peers, enhancing their speaking and writing skills through real-time interaction.[47]

[45] Zhang, L., & Zheng, Y. (2023). *The Impact of Virtual Reality on English Speaking Fluency*. Journal of Language and Technology, 15(3), 42-56.

[46] Li, J., & Wang, Y. (2024). *Mobile Learning Apps for Enhancing Vocabulary and Grammar in ESL Learners*. International Journal of Educational Technology, 32(2), 88-101.

[47] Patel, A., & Singh, R. (2024). *Blended Learning in English Language Teaching: Student Engagement and Outcomes*. ELT Journal, 78(1), 15-29.

2) Technological Tools for Teaching English

The use of various technological tools and platforms for teaching English can be effectively integrated into lessons.

a. Language Learning Apps

Duolingo, Babbel, and Memrise are gamification-based apps that have revolutionized English learning by providing fun, feedback, and progress tracking.

b. Online Classrooms and Virtual Learning Environments

Google Classroom, Zoom, and Microsoft Teams enable teachers to conduct virtual lessons, hold discussions, share materials, and facilitate asynchronous learning through recorded lessons, discussion boards, and assignments.

c. Social Media and Collaborative Tools

Social media platforms like Twitter, Instagram, and Facebook offer students informal English practice, while blogs, wikis, and collaborative tools like Padlet and Google Docs encourage writing and collaboration.

d. Multimedia Tools

Videos and podcasts are effective teaching tools for English, providing grammar, pronunciation, and cultural insights, and allowing students to practice speaking through Audacity.

e. Artificial Intelligence (AI) and Chatbots

AI-powered applications, like chatbots and virtual assistants, provide students with the chance to practice conversational English by simulated real-life dialogues and offering immediate feedback.

3) Challenges in Using Technology in ELT

Educators must navigate various challenges, despite the numerous advantages' technology offers.

a. Digital Divide: Socioeconomic disparities can hinder students' full utilization of digital learning tools, as not all students have equal access to technology.
b. Teacher Training**:** Professional development programs are crucial for educators to enhance their proficiency in incorporating technology into their lessons, as they may lack the necessary training.
c. Over-reliance on Technology: Technology enhances learning but should not replace face-to-face interactions or critical thinking activities; a balanced approach is necessary.
d. Privacy and Security Concerns: Online platforms raise data privacy and security concerns, necessitating teachers to use safe, reputable platforms and educate students about online safety.c

Technology integration in English language teaching enhances learning experiences through mobile apps and virtual classrooms. However, challenges like access and teacher training must be addressed. The future of language learning looks promising.

In a similar vein, English as a Foreign Language (EFL) teachers play a pivotal role in implementing effective technology to enhance students' learning.[48] In order to provide language learners with additional resources and assistance in

[48] P. N. Köse, Technological Pedagogical Content Knowledge (TPACK) of English Language Instructors. Journal of Educational and Instructional Studies in the World, 13. (2016).

their pursuit of language acquisition, English language teachers integrate their technical pedagogical content expertise into their lesson plans and classrooms. Furthermore, pedagogical, disciplinary, and technological expertise afford English educators a comprehensive understanding of the teaching and learning process. It is therefore essential that teachers are able to comprehend and handle a variety of tools, information, and tasks that integrate computer-based learning within the framework of lessons, in order to prepare them for the quality of learning that will be required in the twenty-first century.[49]

In conclusion, the TPACK concept posits that EFL educators should not only enhance their pedagogical and subject understanding but also their technical proficiency. The capacity to present material in a manner that employs pertinent technologies and methodologies is of paramount importance for learners to learn effectively and expeditiously. Furthermore, educators must integrate ICT into their lessons in order to meet the needs of both the larger community and learners. It is thus postulated that the use of ICT will enable instructors to teach more effectively, thereby facilitating the learning of students. The learning objective would eventually be more straightforward to achieve.

d. Technological Pedagogical Content Knowledge (TPACK) Framework

Koehler and Mishra built upon Shulman's Pedagogical Content Knowledge (PCK) paradigm to establish the notion of TPACK. Building upon Shulman's study, PCK refers to the convergence of subject-specific knowledge, pedagogical knowledge, and teaching context knowledge. It is imperative that teachers utilize

[49] M. L. Niess, Preparing Teachers To Teach Science And Mathematics With Technology: Developing A Technology Pedagogical Content Knowledge. Teaching and Teacher Education, 21, (2005). 509–52.

the TPACK framework to delineate the manner in which technology should be integrated into the teaching and learning process.[50]

A theoretical framework, TPACK, is designed to assist educators in comprehending the information required to integrate technology into their lessons in an efficient manner.[51] The objective of TPACK, a concept that integrates technology and education, is to facilitate problem-solving, develop strategies to enhance the information retrieval system, and comprehend complex ideas. Consequently, TPACK is the knowledge of how to use pedagogy and technology to facilitate the acquisition of pertinent information by students. In order to successfully integrate technology into teaching and learning, teachers must possess a more comprehensive understanding of the subject matter than that which is typically required of them.

The TPACK framework is comprised of three primary knowledge components: technology, pedagogy, and content. The relationships between these components are represented by the terms pedagogical knowledge (PK), content knowledge (CK), and technical knowledge (TK).[52] The framework proposes the integration of the three fundamental components to create four new knowledge types: technological pedagogical knowledge (TPK), pedagogical content knowledge (PCK), and technological pedagogical content knowledge (TPACK).

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[50] M.J. Koehler & P. Mishra. Introducing TPACK. In Handbook of Technological Pedagogical Content Knowledge (TPCK) for Educators (pp. 3-29). New York: Routledge for the American Association of Colleges for Teacher Education. (2008)

[51] M.J. Koehler & P. Mishra. Introducing TPACK. In Handbook of Technological Pedagogical Content Knowledge (TPCK) for Educators (pp. 3-29). New York: Routledge for the American Association of Colleges for Teacher Education. (2008)

[52] P. Mishra & M. J. Koehler, Technological Pedagogical Content Knowledge: A Framework For Teacher Knowledge. *Teachers College Record*, *108(*6), (2006). 1017–1054.

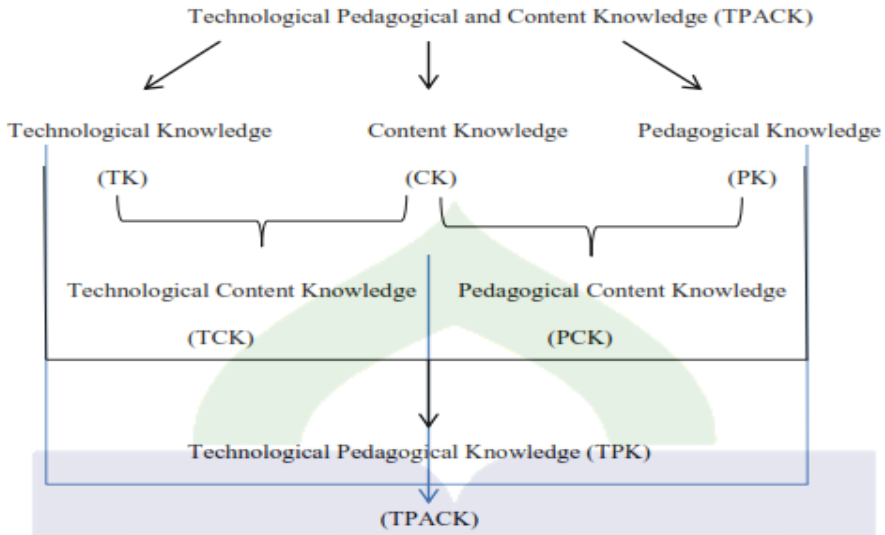

Figure 2.1 TPACK Diagram

The TPACK framework is a comprehensive approach to integrating technology, pedagogy, and content. As Koehler and Mishra assert that, the essence of effective technology-enhanced teaching lies in three interrelated elements: content, pedagogy, and technology, along with the relationships between them.[53] The TPACK, as it is known, serves as a useful framework for contemplating the knowledge that teachers must possess in order to integrate technology into their pedagogical practices and the manner in which they might cultivate this knowledge. A Venn diagram with three overlapping circles, each representing a different type of teacher knowledge, is used to illustrate the three main components of knowledge in the TPACK model (see Figure 2.2).

[53] M.J. Koehler & P. Mishra. Introducing TPACK. In Handbook of Technological Pedagogical Content Knowledge (TPCK) for Educators (pp. 3-29). New York: Routledge for the American Association of Colleges for Teacher Education. (2008)

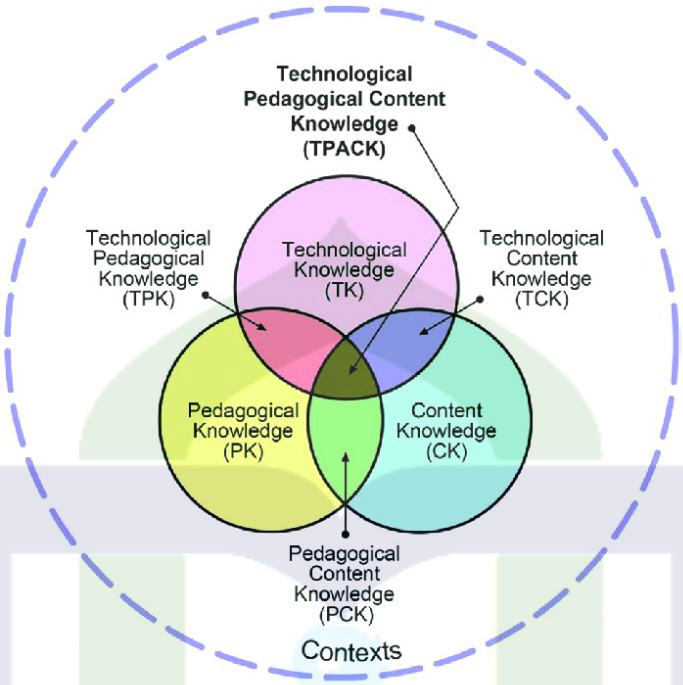

Figure 2.2 Mishra and Kohler TPACK framework (2006)

The document delineates the manner in which teachers' comprehension of technologies and pedagogical content influence one another, ultimately leading to the implementation of effective teaching methodologies with technology. [54] The integration of technology into teaching and learning is a complex process that requires a multifaceted approach. The TPACK framework encompasses a range of strategies that aim to enhance the understanding of concepts, address the diverse needs of learners, identify challenges in conceptual learning, and develop technological solutions to overcome them. It also encompasses the understanding of students' prior knowledge and epistemological beliefs, as well as the leveraging

[54] M. J. Koehler & P. Mishra, Introducing TPACK. In Handbook of Technological Pedagogical Content Knowledge (TPCK) for Educators (pp. 3-29). N(ew York: Routledge for the American Association of Colleges for Teacher Education. 2008).P. 12

of technology to enhance these beliefs.[55] A concise overview of the knowledge encompassed by each TPACK framework is presented below:

1) The capacity of educators to utilize a diverse array of technological resources for instructional purposes is referred to as technological knowledge (TK). Teachers' technological knowledge is comprised of the following components:
   a) The instructor's proficiency with technology;
   b) The teacher's commitment to staying current with technological advancements; and
   c) The teacher has the necessary technology tools for the lesson.
2) Pedagogical knowledge (PK) is defined as the ability to apply specific teaching techniques with the objective of enhancing student learning. The term "knowledge about education" is defined as the capacity to:
   a) Gaining an understanding of the characteristics of students;
   b) Planning educational social events;
   c) Encouraging students to realize their full potential in terms of communication, collaboration, critical thinking, and empathy;
   d) Accurate, respectful, and empathic interactions with students;
   e) Conducting method and learning outcome tests and reviews.
3) Content knowledge (CK) refers to their proficiency in the subject topic. Content expertise consists of:
   a) Knowledge of learning theories, concepts, and techniques as well as how to apply the material.

[55] M. J. Koehler & P. Mishra, Introducing TPACK. In Handbook of Technological Pedagogical Content Knowledge (TPCK) for Educators (pp. 3-29). N(ew York: Routledge for the American Association of Colleges for Teacher Education. 2008).P. 12

b) The expertise needed to provide educational resources.

c) Offers significant and meaningful details on the topic.

d) Gives students tasks to help them understand the material better.

4) Technological pedagogical knowledge (TPK) is defined as the capacity to utilize technology-enabled instructional practices.[56] TPK consists of:

a) The guts to employ technology to enhance educational opportunities.

b) The propensity to encourage pupils' uniqueness and teamwork via the use of technology.

c) The opportunity to improve pupils' cognitive skills (critical and creative thinking) through the use of technology.

d) The use of technology by the instructor to present concepts to the class via interactive teaching methods, ranging from simple to sophisticated.

5) Technological content knowledge (TCK) is defined as the understanding of how to utilize technology to enhance subject matter learning through interactive teaching methods. Technological knowledge is defined as the ability to:

a) Reflect information using technology;

b) Create educational materials using technology; and

c) Help students utilize technology by the instructor.

6) Pedagogical content knowledge (PCK) is defined as the ability to convey subject matter through the use of diverse teaching methodologies. Among the pedagogical content knowledge are the following:

[56] M. J. Koehler & P. Mishra, Introducing TPACK. In Handbook of Technological Pedagogical Content Knowledge (TPCK) for Educators (pp. 3-29). N(ew York: Routledge for the American Association of Colleges for Teacher Education. 2008).P. 12

a) Provide educational resources that help students reach their full potential in terms of communication, cooperation, and critical and creative thinking.
b) Entire educational programs that emphasize scientific learning materials.

7) Teachers are obliged to assist their students in learning material by utilizing specialized technologies and instructional practices in accordance with the principles of technological pedagogical and content knowledge (TPACK). The following elements are included in the concept of TPACK:[57]
   a) A lesson that successfully combines subject content, innovations, and instructional techniques (didactic and/or PBL) is taught by the instructor;
   b) The student is able to complete technology-based learning activities with success and contribute to the learning materials.
   c) The chance to create and share information on worthwhile technology-based learning opportunities;
   d) Teachers' readiness (possessing lesson plans) and technological proficiency in delivering content that is relevant to the students.

The TPACK framework offers a number of potential avenues for educators seeking to enhance their teaching practices. Firstly, a sound pedagogical framework that incorporates technology integration necessitates an appreciation of the principles underlying technology usage. Secondly, it presents pedagogical techniques that utilize technologies in practical ways to teach subject matter. These techniques are informed by an understanding of the subject matter itself,

[57] M. J. Koehler & P. Mishra, Introducing TPACK. In Handbook of Technological Pedagogical Content Knowledge (TPCK) for Educators (pp. 3-29). N(ew York: Routledge for the American Association of Colleges for Teacher Education. 2008).P. 12

including its inherent difficulties and accessibility. Additionally, they consider the potential of technology to address the specific challenges faced by students. Finally, it represents an understanding of students' foundational knowledge and epistemological theories, as well as the ways in which technologies can build upon existing knowledge, develop novel approaches to knowledge, or reinforce existing ones.[58]

From the preceding analysis, it can be posited that TPACK represents a conceptual framework that elucidates the interconnections, experiences, implications, and conditions that pervade content, pedagogy, and technology. The objective of TPACK is to elucidate the manner in which technological, pedagogical, and content knowledge can be integrated into learning environments in order to enhance the meaningfulness and competitiveness of learning.

e. Concept of School Status

One of the primary objectives of formal education is to facilitate the optimal development of students' potential in various aspects of their personalities. This is done with the intention of fostering the growth of individuals who are capable of functioning independently within society. In accordance with their respective statuses, schools are categorized into two distinct types: private schools and public schools. In his 2016 study, Hendajany identifies five categories of schools in Indonesia: general public schools, Islamic public schools (Madrasah), general private schools (secular), Islamic private schools, Christian

[58] M. J. Koehler & P. Mishra, Introducing TPACK. In Handbook of Technological Pedagogical Content Knowledge (TPCK) for Educators (pp. 3-29). N(ew York: Routledge for the American Association of Colleges for Teacher Education. 2008).P. 12

private schools, Catholic private schools, and Hindu-Buddhist private schools. The characteristics of public and private schools differ.[59]

The majority of public schools are conventional schools, whereas the majority of private schools are religious institutions, either Islamic or Christian/Catholic. The public school system is overseen by the Ministry of Education and Culture, while the religious school system, particularly Islam, is managed by the Ministry of Religion. The curriculum of Madrasah schools comprises 40% religious content, with the remaining 60% aligned with the publicschool curriculum as established by the Ministry of Education and Culture.[60]

The fundamental distinction between public and private schools is the source of their financial support. In a public school, the financing, regulation, and standard are largely determined by the government. In addition, public schools rely primarily on funding from local, state, and federal governments, whereas private schools are typically supported by tuition payments and, in some cases, by funds from other nonpublic sources, such as religious organizations, endowments, grants, and charitable donations. In certain states, private schools are permitted to receive public funds for specific services, such as transportation.[61] The fees charged by private schools are typically higher than those of public schools, allowing them to provide better facilities and up-to-date technology. To a

[59] N. Hendajany. The Effectiveness Of Public Vs Private Schools in Indonesia. *J. Indones. Appl. Econ.* 2016;6(1):66–89

[60] N. Hendajany. The Effectiveness Of Public Vs Private Schools in Indonesia. *J. Indones. Appl. Econ.* 2016;6(1):66–89

[61] Riley, Richard W. Public and Private Schools: How do They Differ. (Washinton: U.S. Department of Education, 1997), p.2

considerable extent, private schools are insulated from the influence of the public sphere. In light of these two major differences, it is evident that there are a multitude of other significant differences between public and private schools.

The curriculum of public schools is determined at the state or national level. secondary schools adhere to the Kurikulum Standar Sekolah Menengah (KSSM) design. Admission to public schools is contingent upon the student's residential address. The schools are required to admit students who reside within their respective geographical zones. Although the specific technological and other facilities available at different schools may vary, public schools in general tend to have fewer facilities than private schools. The number of students in a given class may be significantly elevated due to a lack of requisite facilities or resources. In addition, the size of a classroom in a private school is typically smaller than that of a public school. This discrepancy is primarily attributable to the availability of resources and facilities.[62]

Moreover, the availability of funding from multiple sources allows private schools to offer a wider range of educational opportunities than their public counterparts. These include the ability to teach beyond the standard curriculum, to cater to specific student populations (such as gifted students, students with special needs, or those belonging to a particular religious or linguistic community), or to implement alternative curricula such as those focused on the arts, drama, or technology. Public schools are obliged to adhere to the curriculum established by the district, and are prohibited from denying admission to any child within the

[62]Accessed in 10th April 2024, Available in https://schooladvisor.my/articles/difference-public-schools-private-schools

residential school zone. There are a number of preconceived notions regarding private and public schools. Private schools are often presumed to be exorbitantly priced, exclusive, and an optimal choice for gaining admission to prestigious colleges. The prevailing perception of public schools is that they are of inferior quality, lack discipline, and offer a substandard curriculum. The following table presents a comparison between public and private schools from various perspectives. [63]

Table 2.1 The Comparison between Public and Private School

Aspects	Private School	Public School
Introduction	A secondary or high school run and supported by private individuals or a corporation rather than by a government or public agency.	A secondary or high school supported by public funds and providing free education to children of a community or district.
Education	Decided by the school board	Mandated by state curriculum. more often by the Common Core national standards.
Schedule	Schedule is dictated by the school	Schedule is often a mix of graduation requirements and electives
Teachers	May or may not be certified but often hold a graduate degree or higher education.	Teachers must meet all state-mandated requirements and be highly proficient in their subject area (i.e. have at least a BA with a major in their subject). Most teachers have Masters Degrees.
Technology	Depends on the school. Private schools with higher tuition have more up-to-date technology.	Depends on the school; can be very modern or relatively outdated.
Funding	Tuition, gifts, endowments, private corporations, fundraising events.	Federal government, State government, Local government (people's taxes), grants, awards, donations.

[63] N. Hendajany. The Effectiveness Of Public Vs Private Schools in Indonesia. *J. Indones. Appl. Econ.* 2016;6(1):66–89

Accreditation Agency	Private accreditation agencies like • National Association of Independent schools • National council for private school accreditation • Commission on Transregional and International accreditation.	State Board of Education.
Admission Criteria	Not determined by student address.	School zoning determined by student address.
Purpose	Build religious foundation for youth. Not much education about real-life situations, such as tax and funding.	To teach children and spend money provided by the community through taxes and bond initiatives
Denial of admission	School reserves the right to deny admission a student if s/he does not meet the eligibility criteria as decided by the school.	School cannot deny admission to any student within the designated geographical area of the school.
Transportation	Provided by school or to be arranged by student	Provided by school within designated area
Class size	Roughly 16 occupants or less. Very rarely more.	About 20-25 per room.
Social life	More secluded groups. Students get to know other students greatly. No preparation in elementary or senior high schools. High school shows a variety if in a co-ed school.	Larger pool of people allows for more social interaction. Opportunities for sports, clubs, community service groups and other after-school activities help broaden students' boundaries. Very good preparation for social pressures of college.
School Calendar	Set by school	Decided by district for all schools in the district
Bullying	Handled by the principal or dean of students. Usually, punishments are suspension or In School Suspension.	Teachers are trained to intervene, and most schools now have cameras to help deter bullying. However, it is hard to manage classrooms with 25 students and in a litigious society some teachers avoid conflicts.
Religious Affiliations	Can have religious affiliations	None

Curriculum	May create own Curriculum.	Common Core standards; State standards

f. Concept of Teacher Status

1) Definition of Certified Teacher

The stipulation of certification is outlined in the Law of the Republic of Indonesia No. 14 of 2005. Certification is defined as a form of a competency test designed as the basis for awarding certificates and incentives for teachers and lecturers. In Article 8 of this Law, it is stipulated that teachers must possess academic qualifications, competencies in their respective fields, educator certificates, physical and spiritual health, and the ability to realize the goals of national education.[64]

The objective of teacher certification in Indonesia is to enhance the quality of teaching, which in turn leads to enhanced performance and competence, thereby contributing to the improvement of the quality of education in Indonesia.[65] Additionally, an educator certificate serves as a formal indication of recognition for teachers and lecturers who have met the established standards of competence and performance, thereby warranting monetary compensation.[66] In other words, certification serves as a means of providing additional funding to cover teachers' cost of living and a process of fulfilling educator competence with the ultimate goal of achieving the hopes

[64] U. Rahardja, et.al. Determinants of Lecturer Performance To Enhance Accreditation In Higher Education. 2020 8th International Conference on Cyber and IT Service Management, CITSM 2020. https://doi.org/10.1109/CITSM50537.2020.92688 71

[65] E.A. Hanushek & L. Woessmann. Education, Knowledge Capital, And Economic Growth. In The Economics of Education: A Comprehensive Overview. Elsevier Ltd. (2020). https://doi.org/10.1016/B978-0-12-815391- 8.00014-8

[66] H. Hartiwi, A. Y. Kozlova & F. Masitoh, The Effect Of Certified Teacher And Principal Leadership Toward Teachers' Performance. International Journal of Educational Review, 2(1), 70–88. (2020). https://doi.org/10.33369/ijer.v2i1.10629

and visions of national education in Indonesia.[67] In order to fulfill this mission, the Law of the Republic of Indonesia Number 20 of 2003 Article 42 establishes a policy direction which requires educators to have minimum qualifications and certifications according to their respective competence, to be physically and mentally healthy, and to possess the ability to realize educational goals.

This is reaffirmed in Article 28, paragraph (1) of PP RI Number 19 of 2005 concerning National Education Standards, and Article 8 of the Law of the Republic of Indonesia Number 14 of 2005, which mandates that teachers possess a minimum academic qualification of D4/S1 in their respective field, the capacity to design and deliver learning material, and competence as an agent, which is formally evidenced by an educator certificate.[68] In this context, while the minimum academic qualifications are obtained through higher education, the educator competency certificates are obtained through certification examinations.

2) Driving factors of certification

Teacher certification is a means of improving teacher performance in order that they will be capable of addressing issues in the world of education in Indonesia.[69] The low ability of students may be indicative of deficiencies in the

[67] C. Day, Q. Gu & P. Sammons, The Impact Of Leadership On Student Outcomes: How Successful School Leaders Use Transformational And Instructional Strategies To Make A Difference. Educational Administration Quarterly, 52(2), 221–258. (2016). https://doi.org/10.1177/0013161X15616863

[68] H. Tanang & B. Abu Teacher Professionalism And Professional Development Practices In South Sulawesi, Indonesia. Journal of Curriculum and Teaching, 3(2), 25 –42. (2014). https://doi.org/10.5430/jct.v3n2p2 5

[69] S. Almaududi, Pengaruh Kejenuhan Kerja (Burnout) Terhadap Kinerja Karyawan Bagian Operator Di PT PLN (Persero) Unit Pelaksana Pengendalian Pembangkit Jambi Unit Layanan Pusat Listrik Payo Selincah. Ekonomis: Journal of Economics and Business, 3(2), 193-203. (2019).

quality of learning processes in schools. This should be a key factor in successful learning processes. Consequently, teachers may be responsible for the students' suboptimal academic performance. This issue has become a primary concern of the Indonesian government, which, through the provision of certification, anticipates that teachers in Indonesia will be more motivated and enthusiastic in improving their performance.[70] In order to achieve this, the government enacted the law of regional autonomy, which includes the transfer of education management from the central government to local governments.

Since that time, the management of education in Indonesia has undergone a significant transformation. With regard to the authority of those responsible for managing education, it is evident that progress has been made in this regard, as evidenced by the shift in policy from a central to a regional government. Moreover, the National Education System, as outlined in Law 20 of 2003, stipulates that the responsibility, authority, and resources for education services have been transferred from the central to the regional and even the school level. This transfer was implemented with the intention of providing teachers with greater access to national certification from the government.[71]

3) The Fuction of Certification

Further clarification regarding teacher certification is warranted. The following

[70] S.L.E.W. Fajari & Chumdari. Critical Thinking Skills And Their Impacts On Elementary School Students. Malaysian Journal of Learning and Instruction, 18(2), 161–187. (2021). https://doi.org/10.32890/mjli2021.18.2.6

[71] H. Y. Siry, In Search Of Appropriate Approaches To Coastal Zone Management In Indonesia. Ocean and Coastal Management, 54(6), 469 –477. (2011). https://doi.org/10.1016/j.ocecoaman.2011.03.009

functions are attributed to certification agencies:[72]

a) Quality Control

(1) Certification agencies have identified and defined a set of competencies that are unique to each profession.

(2) These competencies are developed over time and are sustainable.

(3) Certification increases professionalism through the mechanism of selection. This occurs at the time of initial entry into professional organizations as well as during subsequent career development.

(4) Certification improves the quality of training programs and the effort of learning independently, thereby increasing professionalism.

b) Quality Assurance

(1) The implementation of a process of professional development and evaluation of practitioner performance will enhance the perception of the public and the government towards the organization and its members.

(2) Certification provides valuable information for those users who wish to employ individuals with expertise and specific skills.

Furthermore, Wibowo and Mulyasa posit that teacher certification offers the following benefits:[73]

(1) It protects the teaching profession from the practice of incompetent educators who may damage the image of the teaching profession itself.

(2) It protects society from educational practices that are not professional.

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[72] E. Mulyasa, Standar Kompetensi dan Sertifikasi Guru, (Bandung: Remaja Rosdakarya, 2009), p. 35

[73] E. Mulyasa, Standar Kompetensi dan Sertifikasi Guru, (Bandung: Remaja Rosdakarya, 2009), p. 35

(3) It serves as A forum for the assurance of quality within the context of LPTK (Lembaga Pendidikan Tenaga Keguruan), which is responsible for the preparation of prospective teachers and also serves as a quality control mechanism for user educational services

(4) Maintaining the education providers' institutions from

4) Certification Implementation Basis

In Indonesia, the certification of in-service teachers is carried out in accordance with legal provisions. The Decree of the Minister of National Education Number 056/O/2007 concerning the Establishment of a Teacher Certification Consortium and the Decree of the Minister of National Education concerning the Appointment of Universities to Organize Certification are two decrees that aim to improve the quality of national education. Empirically, there is an effect of teacher certification on teacher performance, although it is not significant between certified and non-certified teachers. although not very significant between certified and non-certified teachers. There is no significant effect of teacher certification on teacher performance between certified and non-certified teachers. Some recommendations for the government regarding current teacher certification practices.[74]

5) Purpose and Benefits of Teacher Certification

[74] Mesta Limbong & Jitu Halomoan, The Effect of Government Teacher Certification on Teaching Performance: Certified vs uncertified. Journal of Ultimate Research and Trends in Education. Vol. 4, No. 3, November 2022, pp: 186 – 191. DOI: https://doi.org/10.31849/utamax

Teacher certification aims to recognise the quality and competence of teachers, so that they can provide better education services.[75] The certification process focuses on two main areas: pedagogic competence and professional competence. Pedagogic competence refers to a teacher's ability to design, implement and evaluate learning, while professional competence relates to mastery of teaching materials and scientific development.[76]

The benefits of teacher certification include:

a) Improving the Quality of Learning

Certified teachers are expected to develop more innovative and effective learning methods, improve interaction with students, and make good use of educational technology.

b) Improved Teacher Welfare

One of the benefits directly felt by teachers who have undergone certification is the professional allowance. This allowance is given as a reward for recognising their competence.

c) Encouraging Professionalism

Certification is also a tool to encourage teachers to always develop themselves and keep up with the development of the world of education. Certified teachers are expected to have the enthusiasm to continue learning and adapting to changing times.

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[75] Suryani, D., & Kurniawan, A. (2017). "Pengaruh Sertifikasi Guru terhadap Peningkatan Kualitas Pembelajaran di Sekolah." *Jurnal Pendidikan dan Pembelajaran*, 5(1), 32-45.

[76] Nurlaila, S., & Mulyadi, A. (2019). "Evaluasi Proses Sertifikasi Guru dalam Meningkatkan Profesionalisme Pendidik di Indonesia." *Jurnal Pendidikan dan Sosial*, 10(3), 67-80

d) Teacher certification process

The teacher certification process goes through several stages that involve competency evaluation and testing. These include:

a) Dissemination and Socialisation

Before participating in the certification process, teachers are given counselling and briefing on the stages of certification and the material to be tested.

b) Competency Test

Teachers must take a test that covers pedagogic, professional, and character education knowledge. This test aims to assess the extent to which a teacher has mastered the field taught.

c) Teacher Performance Assessment

In addition to the written exam, assessment is also conducted through classroom performance observation and portfolio review which contains documents such as lesson plans, assignments, and learning activities that have been carried out.

d) Challenges and Criticisms of Teacher Certification

While teacher certification has many benefits, there are some challenges and criticisms to its implementation:[77]

[77] Wulandari, T "Pengaruh Sertifikasi Guru terhadap Profesionalisme Guru di Sekolah Menengah Pertama." *Jurnal Pendidikan Indonesia*, 12(2), (2018) 105-115.

a) Questionable Quality of Certification Tests

Some have criticised the certification test for not fully reflecting the quality of a teacher in the learning process. Many teachers pass the certification test as a formality, but lack the ability to implement their competencies in the classroom.

b) Inequality in Access and Training

Teachers in remote areas often face difficulties in accessing training or certification exams. This can exacerbate the gap between teachers in big cities and those in remote areas.

c) Teacher Workload

The lengthy and complicated certification process often adds to teachers' workloads, especially for those who already have busy teaching schedules.

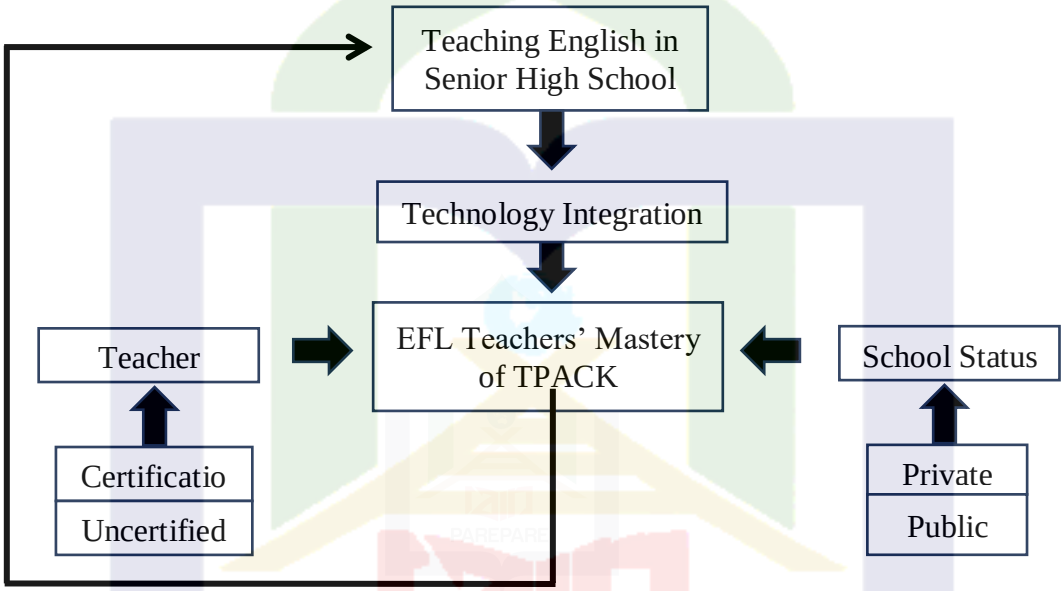
d) The Importance of Improving the Quality of Teacher Certification

To ensure that the teacher certification programme is truly effective in improving the quality of education, various improvements need to be made. The government and related institutions need to evaluate the certification process to make it more relevant to the needs of education in the field. Better training and more comprehensive testing can help improve teacher quality more significantly.

C. *Conceptual Framework*

Based on the background of the problem stated, senior high school EFL teachers need to understand the Technological Pedagogical Content Knowledge (TPACK). TPACK is an essential part of the education system today especially for teaching English both in public and private school. It incorporates the growing

demand for technology in the classroom and focuses on the content and how we teach it. Integrating technology into learning is a framework to explain the main studies of Technological Pedagogical Content Knowledge (TPACK). A clear explanation can be seen from the conceptual of framework in this study as follows:



2.1 Conceptual Framework of Research

CHAPTER III

METHOD OF RESEARCH

A. *Research Design*

This study employs a descriptive quantitative methodology, utilizing survey methods to systematically collect quantitative information from a relatively large sample obtained from a population.[78] The survey method is employed to obtain data in its natural state, without any form of treatment, as elucidated by Sugiyono.[79] Moreover, the quantitative approach prioritizes the analysis of numerical data through the application of statistical methods.[80] The objective of this study is to provide an overview of the English language teachers' TPACK mastery in the learning process. Furthermore, this study will examine whether there are differences in teacher TPACK abilities based on teacher status and school status variables. In this study, the researchers will not implement any intervention or manipulate variables.

B. *Population and Sample of the Research*

a. Population

The population in this study employs population terminology in accordance with Daniel's assertion that the population is a hypothetical

[78] Ponto J. Understanding and Evaluating Survey Research. J Adv Pract Oncol. 2015 Mar-Apr;6(2):168-71. Epub 2015 Mar 1. PMID: 26649250; PMCID: PMC4601897.

[79] Sugiyono, 2013, Metodelogi Penelitian Kuantitatif, Kualitatif Dan R&D. (Bandung: ALFABETA), p.12

[80] Saifuddin Azwar. Metode Penelitian. (Yogyakarta: Pustaka Pelajar, 2015),p. 5-7

population,[81] namely all senior high school English teachers who teach at public or private senior high schools, which currently exist, have existed, or will exist in the future. Pangkep Regency has a total of 34 senior high schools (SMA-MA), with 24 of these being public senior high schools and 10 being private senior high schools. The total number of English teachers employed at senior high schools in Pangkep Regency is 58.

b. Sample

The hypothetical population considered in this study is represented by the current sample, which is a convenience sample selected by purposive sampling technique.[82] This sample includes 34 senior high school English teachers as representative each senior high school in Pangkep regency.

C. *Place and Time of the Research*

The research will take apart in this research is conducted in 34 senior high schools (24 are publics and 10 are privates) in Pangkep Regency, South Sulawesi. **And t**his research is carried out for 3 months, starting from June to August 2024.

D. *Focus of the Research*

This research focuses on the analysis the level of TPACK (Technological Pedagogical Content Knowledge) mastery among senior high school EFL (English as a Foreign Language) teachers who taught in Pangkep Regency,

[81] Daniels N. Distributive justice and the use of summary measures of population health status. In Field MJ, Gold GM, eds. Summarizing Population Health: Directions For The Development And Application Of Population Metrics. (Washington DC, National Academy Press, 1998), p.2

[82] C. Andrade. The Inconvenient Truth About Convenience and Purposive Samples. Indian J Psychol Med. 2021 Jan;43(1):86-88. doi: 10.1177/0253717620977000. Epub 2020 Dec 17. PMID: 34349313; PMCID: PMC8295573.

considering differences based on teacher status (certified and uncertified) and school status (public and private). The research will also compare the level of TPACK mastery between certified and non-certified EFL teachers and evaluate whether there are significant differences in TPACK mastery between public and private schools. The results are expected to provide a comprehensive understanding of the factors influencing TPACK mastery among EFL teachers in the region.

E. *Data Collecting Technique*

The data for this study were collected from in-service EFL teachers in both public and private senior high schools in Pangkep Regency, South Sulawesi. Firstly, numerical data for teachers and schools in the senior high school levels of the education system were obtained from the database of the Ministry of National Education (MoNE). Subsequently, the data collection instruments are prepared for the application. The data collection instruments were delivered by the researcher to the public and private senior high schools included in the study sample.

Prior to the administration of the data collection instruments, the participants are informed about the purpose of the study. It is of the utmost importance that the participants in the study are treated with the utmost respect and consideration. Therefore, the data for the study are collected by the researcher through visits to the schools, the data collection process will be lasted for approximately one months. The administration of the survey instrument will require approximately online via google form and it will be shared into WhatsApp group of EFL teacher (MGMP). The data collection instrument with teachers is

conducted in their respective schools during weekday hours. Subsequently, following the collection of the data collection instruments from the participants, each instrument is assigned a unique identifier and then encoded in the MS Excel package. This data is then transferred to the SPSS 25.0 software for statistical analysis.

The first instrument is a survey questionnaire with a close-ended question on a variable of TPACK for the EFL context will be employed to explore the EFL teachers' perception. The TPACK survey questionnaire is developed and validated by the researcher. Also, it is adapted from several questionnaires that have been existed. To have a complete picture of the instrument used in this study, what it measures and its aspects, the survey questionnaire is illustrated in the following table:

Table 3.1 Aspects of the TPACK-EFL Survey

Source	Number of Items	Likert-scale	Components
○ Bostancioglu and Handley (2018). ○ Schmidt, et.al (2009) ○ Baser, Kopcha, & Ozden (2015), ○ Sahin, (2011) ○ Archambault and Crippen (2009)	36 items	4 points. Strongly Agree, Agree, disagree, and strongly disagree.	○ Technological knowledge (TK) ○ Content knowledge (CK) ○ Pedagogical Knowledge (PK) ○ Pedagogical content knowledge (PCK) ○ Technological content knowledge (TCK) ○ Technological pedagogical knowledge (TPK)

The questionnaire in this research is in the form of a checklist and the statement items in this questionnaire are closed-ended. The respondent only has to choose the answers provided by putting an index in the column provided in the research questionnaire sheet. The answers for every instrument that uses the Likert scale are gradation from Strongly Agree, Agree, Disagree, And Strongly

Disagree.[83] In this research instrument, respondents are asked to choose their retort to signify one of the numbers from 1 to 4. Based on the explanation for the numbers can be seen from the following table:

Table 3.2 Likert Scale

Answer	Score
Strongly Disagree	1
Disagree	2
Agree	3
Strongly Agree	4

Validation of research instruments needs to be done to obtain valid data. Subali explains that the research instrument is considered valid if the instrument used can provide empirical information on the things to be measured.[84] Meanwhile, according to Subali instrument reliability is related to the consistency / constancy of the instrument providing the same measurement results if used many times.[85] The questionnaire instrument from the researcher which is used in this study, has known the validity and reliability values (adopted) and while the validation of the interview instrument is also adopted from the Niang's research.[86]

F. *Technique of Analysis Data*

The data analysis is conducted using the SPSS software version 25. The data are analyzed using both descriptive and inferential statistics. Descriptive statistical analysis is employed to provide an overview of the TPACK profile of

[83] Sugiyono. Metode Penelitian Kuantitatif, Kualitatif dan R&D. (Bandung: PT Alfabet, 2016), p.135

[84] Bambang, Subali. 2016. Prinsip Asesmen dan Evaluasi Pembelajaran Edisi Kedua. (Yogyakarta: UNY Press,2016), p.121

[85] Bambang, Subali. 2016. Prinsip Asesmen dan Evaluasi Pembelajaran Edisi Kedua. (Yogyakarta: UNY Press,2016), p.136

[86] Bambang, Subali. 2016. Prinsip Asesmen dan Evaluasi Pembelajaran Edisi Kedua. (Yogyakarta: UNY Press,2016),

English teachers in Pangkep regency. This involves examining the mean, minimum score, maximum score, standard deviation, and percentage score of teachers' TPACK implementation based on the results of the questionnaire. The following testing criteria are used to evaluate the study hypothesis based on school status and examine significant differences in teacher's status across groups using an independent sample t-test once the normality and homogeneity conditions have been met.

In the questionnaire instrument, the total score that has been obtained is converted into a value. The maximum value obtained is 100 which is calculated by the following formula:

$$\mathbf{P} = \frac{f}{N} \boldsymbol{x}\ \mathbf{100\%}$$

With:

P = Precentage

F = Frequency

N = Total Sample

A significant difference is indicated by a significance value less than 0.05. There is no discernible change if the significance value is more than 0.05. The values thus obtained are then subjected to a comparison with the aforementioned interpretation criteria with a view to determining the English TPACK category. The following interpretation criteria are presented in Table 3.[87]

[87] Suharsimi Arikunto, Prosedur Penelitian : Suatu Pendekatan Praktik, Edisi. Revisi VI, (Jakarta : PT Rineka Cipta, 2006). p. 236

Table 3.3 Percentage Criteria of EFL Teachers' TPACK

% Total Score	Criteria
≤ 35 %	Very Poor
36 – 51 %	Poor
52 – 67 %	Fairly Good
68 – 83 %	Good
84 -100 %	Very Good

A separate sample the t-test is used to evaluate the study hypothesis based on the substantial variations in differences level of TPACK mastery between teacher's status and school's status variables with the following testing criteria:

A significance value < 0.05 indicates a significant difference.

A significance value > 0.05 indicates no significant difference.

G. *Hypoteses*

H0: There is no significant difference level of EFL Teachers' TPACK mastery based on certification status showed in TPACK mastery between certified and not certified teachers.

H1: There is no significant difference EFL teachers' TPACK mastery based on school status showed in TPACK mastery of teachers in state and private schools.

CHAPTER IV

FINDING AND DISCUSSION

A. *Description of Research Findings*

This study investigated the mastery of TPACK of EFL teachers at senior high school (SMA/MA) level. The measured TPACK mastery includes the aspects of TK, CK, PCK, TCK, TPK, and TPACK. This study was done in Pangkajene and Kepulauan Regency. The demographics of respondents are displayed in the following table:

Table 4.1

Demographics Information of Research Respondents

No	Characteristics	Category	Total	Percentage (%)
1	School Status	State	29	62
		Private	18	38
2	Certification Status	Certified	31	66
		Not Certified yet	16	34

Table 4.1 shows that out of a total of 47 respondents, the respondents were 62 % teachers from state school, 38 % from private school, and 66 % certified teachers, and 34 % not certified teachers

1. The Level of TPACK Mastery of Senior High School EFL Teachers based on Certification Status

TPACK mastery of EFL teachers was analyzed descriptively and inferentially based on the differences between certified and uncertified teachers. Table 5.1 below presents the findings of the analysis.

Table 5.1

Score of TPACK Based on Teacher Status

Component	Certification status	N	Mean	Median	Minimum score	Maximum Score
TK	Not Certified	16	81.59	79.17	63	100
	Certified	31	80.99	83.33	42	96
CK	Not Certified	16	75	75	60	100
	Certified	31	83.44	85	60	100
TPK	Not Certified	16	77.15	79.17	58	100
	Certified	31	84.90	83.33	67	100
PCK	Not Certified	16	75.46	75	54	100
	Certified	31	76.79	76.79	57	93
TCK	Not Certified	16	80.78	79.17	58	100
	Certified	31	80.99	83.33	63	100
TPACK	Not Certified	16	79.57	79.17	63	100
	Certified	31	83.07	83.33	63	100

Based on the outcomes of each component provided in table 5.1, the data showed that certified teachers have more control over TPACK than not certified teachers at the senior high school level. Certified teachers obtained the highest TPACK mastery, specifically on Technological Pedagogical Knowledge (TPK) mastery, with a mean score of 84.90. Meanwhile, not certified teachers got the lowest level of TPACK mastery, specifically on the Content Knowledge (CK) component, with a mean score of 75.

The tables below provide a detailed overview of TPACK mastery based on teacher's status:

Table 5.2

Frequency of TK (Technological Knowledge)

No	Criteria	Certified		Non-certified Certified	
		Frequency	%	Frequency	%
1	Very Good	10	62,5	13	41,93
2	Good	5	31,25	13	41,93
3	Fairly Good	0	0	5	16,12903
4	Poor	1	6,25	0	0
5	Very Poor	0	0	0	0

Here is a description of the data in table 5.2, which represents the frequency of Technological Knowledge (TK) among two groups: Certified and Non-certified teachers. The table categorizes the individuals' levels of technological knowledge into five categories: Very Good, Good, Fairly Good, Poor, and Very Poor.

Description of table 5.2:

1) Very Good: Among Certified individuals, 10 (62.5%) rated their technological knowledge as very good, whereas in the Non-certified group, 13 (41.93%) rated themselves as very good.
2) Good: 5 (31.25%) Certified individuals rated their technological knowledge as good, compared to 13 (41.93%) of the Non-certified group who did the same.
3) Fairly Good: non-certified individuals rated their knowledge as fairly good, but 5 (16.13%) of the Non-certified individuals did.
4) Poor: 1 (6.25%) of the certified group rated their technological knowledge as poor, while no Non-certified individuals gave this rating.
5) Very Poor: There were no individuals in either group who rated their knowledge as very poor.

In summary, the Certified group tends to rate their technological knowledge higher, with a greater percentage of individuals describing their knowledge as "Very Good" or "Good." On the other hand, the non-certified group has a higher proportion of individuals rating their knowledge as "Good" and "Fairly Good."

Table 5.3
Frequency of CK (Content Knowledge)

No	Criteria	Certified		Non-certified Certified	
		Frequency	%	Frequency	%
1	Very Good	9	56,25	7	22,58
2	Good	5	31,25	13	41,93
3	Fairly Good	2	12,5	11	35,48
4	Poor	0	0	0	0
5	Very Poor	0	0	0	0

Table 5.3 presents the frequency and percentage distribution of content knowledge (CK) ratings for both certified and non-certified individuals. The table is divided into two categories: Certified and Non-certified, each showing the frequency and percentage of individuals who fall under five CK criteria: Very Good, Good, Fairly Good, Poor, and Very Poor.

Description of the table: Very Good: certified: 9 individuals (56.25%), non-certified: 7 individuals (22.58%). Good: certified: 5 individuals (31.25%), non-certified: 13 individuals (41.93%). Fairly Good: certified: 2 individuals (12.5%), non-certified: 11 individuals (35.48%). Poor: both certified and non-certified: 0 individuals (0%). Very Poor: both certified and non-certified: 0 individuals (0%). A higher percentage of certified individuals rate their content knowledge as very good (56.25%) compared to non-certified individuals (22.58%). Non-certified individuals have a higher percentage of good (41.93%) and fairly good (35.48%) ratings compared to certified individuals. No individuals rated their content knowledge as poor or very poor in either group.

This table suggests that certified individuals tend to rate their content knowledge higher (more very good ratings), while non-certified individuals are more evenly distributed between good and fairly good ratings.

Table 5.4
Frequency of TPK (Technological Pedagogical Knowledge)

No	Criteria	Certified		Non-certified Certified	
		Frequency	%	Frequency	%
1	Very Good	11	68,75	9	29,03
2	Good	3	18,75	14	45,16
3	Fairly Good	2	12,5	8	25,80
4	Poor	0	0	0	0
5	Very Poor	0	0	0	0

Table 5.4 presents the frequency distribution of Technological Pedagogical Knowledge (TPK) among certified and non-certified individuals, showing how they rate their skills. The table includes the following categories: Very Good: 68.75% of certified individuals and 29.03% of non-certified individuals rate their TPK as very good. Good: 18.75% of certified individuals and 45.16% of non-certified individuals rate their TPK as good. Fairly Good: 12.5% of certified individuals and 25.80% of non-certified individuals rate their TPK as fairly good. Poor: No individuals, either certified or non-certified, rated their TPK as poor. Very Poor: No individuals, either certified or non-certified, rated their TPK as very poor.

The table indicates that certified individuals tend to have a higher proportion of very good TPK ratings compared to non-certified

individuals, while the non-certified group has a higher proportion of good and fairly good ratings.

Table 5.5
Frequency of PCK (Pedagogical Content Knowledge)

No	Criteria	Certified		Non-certified Certified	
		Frequency	%	Frequency	%
1	Very Good	6	37,5	6	19,35
2	Good	6	37,5	20	64,51
3	Fairly Good	4	25	5	16,12
4	Poor	0	0	0	0
5	Very Poor	0	0	0	0

From the table above can be described as follows: the frequency of Pedagogical Content Knowledge (PCK) for two groups: for certified individuals, the PCK distribution shows that 37.5% are rated as "Very Good" and another 37.5% as "Good". A smaller proportion (25%) falls under "Fairly Good". For non-certified individuals, a higher percentage (64.51%) is rated as "Good", while only 19.35% are rated as "Very Good". There are no individuals rated as "Poor" or "Very Poor" in either group.

This table indicates a slightly higher proportion of non-certified individuals are rated as "Good" compared to certified individuals, while Certified individuals have a more balanced distribution between "Very Good" and "Good" categories.

Table 5.6
Frequency of TCK (Technological Content Knowledge)

No	Criteria	Certified		Non-certified Certified	
		Frequency	%	Frequency	%
1	Very Good	9	56,25	13	41,93
2	Good	3	18,75	16	51,61
3	Fairly Good	4	25	2	6,45

4	Poor	0	0	0	0
5	Very Poor	0	0	0	0

Table 5.6 displays the frequency of Technological Content Knowledge (TCK) across two groups: certified and non-certified individuals. It shows the distribution of TCK ratings for each group based on a set of criteria. Very Good: A higher proportion of certified individuals (56.25%) rated their TCK as "Very Good" compared to non-certified individuals (41.93%). Good: Non-certified individuals (51.61%) had a higher percentage of "Good" ratings than certified individuals (18.75%). Fairly Good: Certified individuals had more "Fairly Good" ratings (25%) than non-certified individuals (6.45%). Poor and Very Poor: Neither group had any individuals rating their TCK as "Poor" or "Very Poor."

This suggests that certified individuals tend to rate their technological content knowledge higher compared to non-certified individuals, particularly in the "Very Good" and "Fairly Good" categories.

Table 5.7
Frequency of TPACK (Pedagogical Knowldege)

No	Criteria	Certified		Non-certified Certified	
		Frequency	%	Frequency	%
1	Very Good	9	56,25	13	41,93
2	Good	6	37,5	12	38,70
3	Fairly Good	1	6,25	6	19,35
4	Poor	0	0	0	0
5	Very Poor	0	0	0	0

The data above can be explained that the frequency of Technological Pedagogical Content Knowledge (TPACK) among certified and non-certified individuals. Here's a description of the table:

This table compares the frequency of different levels of Technological Pedagogical Content Knowledge (TPACK) between certified and non-certified individuals. The data shows the following categories: Very Good: 56.25% of certified individuals rated their TPACK as "Very Good" (9 individuals), 41.93% of non-certified individuals rated their PK as "Very Good" (13 individuals). Good: 37.5% of certified individuals rated their PK as "Good" (6 individuals), 38.7% of non-certified individuals rated their PK as "Good" (12 individuals). Fairly Good: 6.25% of certified individuals rated their TPACK as "Fairly Good" (1 individual), 19.35% of non-certified individuals rated their PK as "Fairly Good" (6 individuals). Poor: 0% of certified individuals rated their TPACK as "Poor" (0 individuals), 0% of non-certified individuals rated their TPACK as "Poor" (0 individuals). Very Poor: 0% of certified individuals rated their TPACK as "Very Poor" (0 individuals), 0% of non-certified individuals rated their TPACK as "Very Poor" (0 individuals).

This table highlights the distribution of TPACK ratings, indicating that a majority of both certified and non-certified individuals view their TPACK as "Very Good" or "Good." The proportions in each category suggest that certified individuals tend to rate their TPACK higher compared to their non-certified counterparts.

2. The Level of TPACK Mastery of Senior High School EFL Teachers Based on School Status.

TPACK mastery of EFL teachers was analyzed descriptively and inferentially based on the differences between state and private school teachers. Table 5.8 below presents the findings of the analysis.

Table 5.8

Score of TPACK Based on School Status

Component	School status	N	Mean	Median	Minimum score	Maximum Score
TK	State	29	80.60	79.17	42	100
	Private	18	82.64	81.25	71	100
CK	State	29	79.31	80	60	100
	Private	18	75.56	75	60	95
TPK	State	29	78.30	79.17	58	100
	Private	18	82.18	81.25	58	100
PCK	State	29	76.23	71.43	54	100
	Private	18	75.40	76.79	54	93
TCK	State	29	79.74	79.17	58	100
	Private	18	82.64	83.33	63	100
TPACK	State	29	81.75	83.33	63	100
	Private	18	79.17	79.17	63	96

Based on the outcomes of each component provided in table 5.8, the data showed that teachers in state school obtained the highest TPACK mastery, specifically on Technological Pedagogical Content Knowledge (TPACK) mastery, with a mean score of 81.75 and teachers in private school obtained the highest TPACK mastery, specifically on Technological Knowledge and Technological Content Knowledge (TCK), with a mean score of 82.64. Meanwhile, teachers in private school got the lowest level of TPACK mastery, specifically on the Pedagogical Content Knowledge (PCK) component, with a mean score of 75.40 and teachers in

state school got the lowest level on the Pedagogical Content Knowledge (PCK) with a mean score of 76.23.

Here is a detailed explanation of the table regarding the school status:

Table 5.9
Frequency of TK (Technological Knowledge)

No	Criteria	State		Private	
		Frequency	%	Frequency	%
1	Very Good	14	48,27	9	50
2	Good	9	31,03	9	50
3	Fairly Good	5	17,24	0	0
4	Poor	1	3,44	0	0
5	Very Poor	0	0	0	0

Table 5.9 displays the frequency of responses related to Technological Knowledge (TK) in two groups: "State" and "Private". The table categorizes responses based on five criteria: Very Good, Good, Fairly Good, Poor, and Very Poor. Below is a breakdown of the data: State: A significant portion (48.27%) of respondents rated their technological knowledge as "Very Good," followed by 31.03% who rated it as "Good." A smaller percentage (17.24%) rated it as "Fairly Good." Only 3.44% reported their knowledge as "Poor," with no one choosing "Very Poor." Private: Similarly, 50% of respondents in the private sector rated their knowledge as both "Very Good" and "Good." No respondents rated their knowledge as "Fairly Good," "Poor," or "Very Poor."

This table shows that respondents in both groups generally feel confident about their technological knowledge, with the private sector showing a stronger concentration in the "Very Good" and "Good" categories.

Table 5.10
Frequency of CK (Content Knowldege)

No	Criteria	State		Private	
		Frequency	%	Frequency	%
1	Very Good	11	37,93	5	50
2	Good	12	41,37	6	33,33
3	Fairly Good	6	20,68	7	38,88
4	Poor	0	0	0	0
5	Very Poor	0	0	0	0

This table shows the frequency distribution and percentage of participants in both the State and Private categories across various levels of content knowledge (CK). The levels are as follows: Very Good: In the State group, 11 participants (37.93%) reported having very good content knowledge. In the Private group, 5 participants (50%) reported this level. Good: In the State group, 12 participants (41.37%) considered their content knowledge to be good. In the Private group, 6 participants (33.33%) reported having good content knowledge. Fairly Good: For the State group, 6 participants (20.68%) rated their content knowledge as fairly good. In the Private group, 7 participants (38.88%) reported having this level of content knowledge. Poor: No participants in either group rated their content knowledge as poor. Very Poor: Similarly, no participants in either group rated their content knowledge as very poor.

This table offers insight into how participants in State and Private categories assess their content knowledge, showing that the majority of individuals in both groups consider their knowledge to be either very good or good, with no one considering it poor or very poor.

Table 5.11
Frequency of TPK (Technological Pedagogical Knowledge)

No	Criteria	State		Private	
		Frequency	%	Frequency	%
1	Very Good	11	37,93	9	50
2	Good	11	37,93	6	33,33
3	Fairly Good	7	24,13	3	16,66
4	Poor	0	0	0	0
5	Very Poor	0	0	0	0

Table 5.11 presents the frequency of Technological Pedagogical Knowledge (TPK) in two groups: State and Private. The table provides the number and percentage of individuals in each group who rated their TPK on various levels. Here's a summary of the data: Very Good: A higher percentage of individuals in the Private group rated their TPK as very good (50%) compared to the State group (37.93%). Good: The percentage is similar between the groups, with both groups reporting 37.93% (State) and 33.33% (Private). Fairly Good: More individuals in the State group (24.13%) rated their TPK as fairly good compared to the Private group (16.66%). Poor and Very Poor: Neither group had any individuals who rated their TPK as poor or very poor.

This table reflects a generally positive assessment of TPK, with Private institutions showing a slightly higher concentration of individuals rating their knowledge as "Very Good."

Table 5.12
Frequency of PCK (Pedagogical Content Knowledge)

No	Criteria	State		Private	
		Frequency	%	Frequency	%
1	Very Good	8	27,58	4	22,22
2	Good	15	53,57	11	61,11
3	Fairly Good	6	20,68	3	16,66

4	Poor	0	0	0	0
5	Very Poor	0	0	0	0

The table presents the frequency of Pedagogical Content Knowledge (PCK) among two different groups: State and Private. It includes the categories "Very Good," "Good," "Fairly Good," "Poor," and "Very Poor," with the frequency and percentage for each category within both groups. Here's a summary of the data: State Group: the majority of individuals rated their PCK as "Good" (53.57%). The "Very Good" category had 27.58% of respondents. There were no respondents who rated their PCK as "Poor" or "Very Poor." Private Group: most respondents in this group also rated their PCK as "Good" (61.11%). The "Very Good" category accounted for 22.22%. As with the State group, there were no individuals who rated their PCK as "Poor" or "Very Poor."
In both groups, the "Good" category received the highest frequency, with the "Very Good" category being the second most common rating.

Table 5.13
Frequency of TCK (Technological Content Knowledge)

No	Criteria	State		Private	
		Frequency	%	Frequency	%
1	Very Good	11	37,93	11	61,11
2	Good	14	48,27	5	27,77
3	Fairly Good	4	13,79	2	11,11
4	Poor	0	0	0	0
5	Very Poor	0	0	0	0

Table 5.13 shows the frequency distribution of Technological Content Knowledge (TCK) for two groups: State and Private. The table breaks down the responses based on five levels of assessment (from "Very

Good" to "Very Poor") along with the frequency and percentage of respondents for each category in both groups.

Here's a description of the table's data: Very Good**:** In the State group, 11 respondents (37.93%) rated their TCK as "Very Good." In the Private group, 11 respondents (61.11%) rated theirs as "Very Good." Good: 14 respondents (48.27%) from the State group rated their TCK as "Good," while only 5 respondents (27.77%) from the Private group rated theirs as "Good." Fairly Good: 4 respondents (13.79%) from the State group rated their TCK as "Fairly Good," and 2 respondents (11.11%) from the Private group did the same. Poor: There were no respondents from either group who rated their TCK as "Poor." Very Poor: Similarly, there were no respondents from either group who rated their TCK as "Very Poor."

In summary, the data reflects that the State group tends to rate their TCK as "Good," while the Private group gives a higher percentage to the "Very Good" rating. Both groups have a small number of respondents rating their TCK as "Fairly Good," and neither group has respondents rating it as "Poor" or "Very Poor."

Table 5.14
Frequency of TPACK (Technological Pedagogical Content Knowldege)

No	Criteria	State		Private	
		Frequency	%	Frequency	%
1	Very Good	15	51,72	7	38,88
2	Good	10	34,48	8	44,44
3	Fairly Good	4	13,79	3	16,66
4	Poor	0	0	0	0
5	Very Poor	0	0	0	0

The table (Table 5.14) explains that the data on the frequency of Technological Pedagogical Content Knowledge (TPACK) for two categories: State and Private. Below is a description of the table:

This table shows the frequency and percentage of responses regarding the level of Technological Pedagogical Content Knowledge (TPACK) in two different settings: State and Private. The levels of TPACK are categorized as "Very Good," "Good," "Fairly Good," "Poor," and "Very Poor." For the State category: 51.72% of respondents rated their TPACK as "Very Good," with a frequency of 15. 34.48% rated their PK as "Good," with a frequency of 10. 13.79% rated their TPACKK as "Fairly Good," with a frequency of 4. 0% rated their TPACK as "Poor" or "Very Poor." For the Private category: 38.88% rated their TPACK as "Very Good," with a frequency of 7. 44.44% rated their PK as "Good," with a frequency of 8. 16.66% rated their TPACK as "Fairly Good," with a frequency of 3. 0% rated their PK as "Poor" or "Very Poor."

Both categories show no respondents rating their TPACK as "Poor" or "Very Poor." There are significant differences in the distribution of ratings between the two categories, with the State group having a higher percentage of "Very Good" ratings, and the Private group showing a higher percentage for "Good."

3. The Difference Level of TPACK Mastery between Certified and non-Certified Senior High School EFL Teachers

The following are the results of the t-test to determine the differences in TPACK mastery for each aspect based on teacher certification status.

Table 5.15 Mastery of English teacher TPACK Based on Certification Status

Component	Teachers' Status	Sig. 2 tailed
TK	Certified	0.346
	Non-Certified	
CK	Certified	0.832
	Non-Certified	
TCK	Certified	0.895
	Non-Certified	
PCK	Certified	0.390
	Non-Certified	
TPK	Certified	0.024*
	Non-Certified	
TPACK	Certified	0.516
	Non-Certified	

Based on the table above, the results of the independent sample t-test analysis in the TPK component, the value of sig (0.024) < 0.05 means that the mastery of TPK of certified and non-certified teachers is significantly different. Meanwhile, the other components obtained a sig value > 0.05 for TK, CK, PCK, TCK and TPACK components, so as the basis for decision making in the independent sample t-test, it can be concluded that H_o is accepted and H_a is rejected, meaning that there is no significant difference in teachers' TK, CK, PCK, TCK and TPACK mastery in public and private schools. Therefore, it can be concluded that

teachers' TK, CK, PCK, TCK and TPACK mastery is not differentiated based on teachers' certification status.

4. The Difference Level of TPACK Mastery between public and private Senior High School EFL Teachers

The following are the results of the t-test to determine the differences in TPACK mastery for each aspect based on school status.

Table 5.16 Mastery of English Teacher TPACK based on School Status

Component	School Status	Sig. 2 tailed
TK	Public	0.180
	Private	
CK	Public	0.822
	Private	
TCK	Public	0.626
	Private	
PCK	Public	0.284
	Private	
TPK	Public	0.785
	Private	
TPACK	Public	0.351
	Private	

Based on the table above, the results of the analysis of the independent sample t-test obtained a value of sig > 0.05 on the all components of TPACK, so as the basis for decision making in the independent sample t-test, it can be concluded that H_o is accepted and Ha is rejected, meaning that there is no significant difference in the mastery of the TPACK component between public and private teachers. Therefore, it

can be concluded that teacher TPACK mastery is not differentiated based on status school.

B. *Discussion*

Based on the findings of research, there are two things can be discussed, including, (1) the level of mastery of EFL teachers' TPACK based on teachers' certification status; (2) the level of mastery of EFL teachers' TPACK based on school status.

1. Description of TPACK Mastery Level of EFL Teachers in Pangkep Regency based on Teachers' Certification Status

The study results (table 5.1) show that certified senior high school English teachers have higher average scores on mastery of all components, TK, CK, TCK, PCK, TPK, and TPACK, than not certified teachers.

The table provides detailed information about various components (TK, CK, TPK, PCK, TCK, and TPACK) related to certification status, showing performance metrics across two groups: those who are **not certified** and those who are **certified**. Here's a breakdown of the data in the table:

a) Component: refers to different knowledge areas or skills, including: **TK** (Technological Knowledge), **CK** (Content Knowledge), **TPK** (Technological Pedagogical Knowledge), **PCK** (Pedagogical Content Knowledge), **TCK** (Technological Content Knowledge), **TPACK** (Technological Pedagogical Content Knowledge).

b) Certification status: This column indicates whether the participants are **certified** or **not certified** in each component. **N**: Represents the number of individuals in each category (certified vs not certified). For each component, there are 16 participants who are n**ot certified** and 31 who are c**ertified**.

c) Mean: The average score for each group in each component. For instance: For **TK**, the mean score for those **not certified** is 81.59, while for those **certified** it is slightly lower at 80.99. For the TK component, those who are not certified tend to have a slightly higher average score than those who are certified, with the difference being **0.60 points** (81.59 - 80.99). This could indicate various things, but it simply means that the overall performance of the "not certified" group is slightly better than the "certified" group, on average. For **CK**, the mean score for **not certified** is 75.00, compared to 83.44 for **certified**. It menas that individuals who are **certified** have a higher average score (83.44) compared to those who are **not certified** (75.00). The difference in mean scores (83.44 - 75.00 = 8.44) could indicate that certification might have a positive impact on performance, assuming the score reflects the same kind of assessment or measure for both groups.

d) Median: The middle value of the scores. This is used to identify the central tendency of scores, and in many cases, it is similar to the mean. For example, for **TK**, the median score for n**ot certified** individuals is 79.17, while for those c**ertified**, it is slightly higher at 83.33. Non-certified

individuals: Their median score is 79.17, meaning that half of the non-certified individuals scored below 79.17 and half scored above it. Certified individuals: Their median score is 83.33, which is slightly higher than the non-certified group. This suggests that, on average, certified individuals have slightly better scores than non-certified individuals, at least in terms of the middle value of the data.

e) Minimum Score: The lowest score observed in each group. In **TK**, for the **not certified** group, the minimum score is 63, and for the **certified** group, it is 42. In summary, the **certified group** is likely considered to have met certain criteria beforehand, allowing them to qualify with a lower score (42). The **not certified group**, on the other hand, needs a higher score (63) to prove their competency or qualification in the given context. Similarly, for **CK**, the minimum score for **not certified** is 60, and for **certified**, it is 60 as well. This could imply that a score of 60 is the threshold for achieving certification, meaning anyone who scores 60 or above is considered certified. However, it's not entirely clear from this description if the score of 60 is a passing score in general, or if it represents a minimum for both passing and being officially certified.

f) Maximum Score: The highest score observed in each group. In **TK**, the **not certified** group has a maximum score of 100, and the c**ertified** group also has a maximum score of 96. It could imply different criteria or standards for each group. For example, the **not certified group** might be evaluated on a broader or different set of metrics compared to the **certified**

group, or it could suggest that the certified individuals have passed a different standard that affects their maximum score. Similarly, for **CK**, both the **not certified** and **certified** groups have a maximum score of 100. Despite the maximum score being the same for both groups, the difference between the two groups could lie in the average or distribution of scores. For example, the certified group might have higher scores on average, or the two groups might be evaluated differently based on other factors.

g) Observations: Generally, participants who are **certified** tend to have higher mean and median scores across most components when compared to those who are **not certified**. For the components **TK**, **CK**, and **TPK**, those who are **certified** show higher scores, but the differences are not very large, suggesting some overlap in performance between the two groups. The **PCK** component has smaller differences in mean and median scores, indicating that certification may not be as strongly linked to improved performance in this area. The **minimum scores** show a wider variation, especially in components like **TK** and **CK**, where **not certified** individuals had a broader range of scores, including some lower scores.

Based on table (5.15) shohws that, the value of TPK component is sig (0.024) < 0.05. Based on the table above, the results of the independent sample t-test analysis for the TPK (Technological Pedagogical Knowledge) component show that the significance value (sig) is 0.024. Since 0.024 is less than the commonly used alpha level of 0.05, this indicates that there is a statistically significant difference between the TPK

mastery of certified and non-certified teachers.

In other words, the data suggests that certification status has a meaningful impact on the mastery of TPK, meaning that certified teachers, on average, have a different (likely higher or more refined) level of technological pedagogical knowledge compared to non-certified teachers. This result highlights the potential benefits of certification programs in enhancing the technological and pedagogical skills of teachers.

Overall, the data seems to indicate a positive association between certification and performance across various components, though the extent of the difference can vary between components.

This finding is in line with the research from Pertiwi et.al[88], their research findings show that teacher certification has a significant impact on their performance. When compared to teachers who have not undergone certification, those who have undergone certification tend to show better performance in terms of learning quality, work efficiency, work attitude, work productivity, and communication skills.

Teacher certification should ideally have an impact on teacher performance. This is in line with the requirements for teacher certification which require certain qualifications and competencies, especially competencies in the use of technology in learning.

However, this finding differs from the previous research that

[88] Pertiwi, G. R., Sari, L. Y., & Saherawan, D. (2024). Dampak Sertifikasi Guru Terhadap Kinerja Guru Madrasah Tsanawiyah Al-Irsyadiyah Merangin Provinsi Jambi. *QOSIM: Jurnal Pendidikan, Sosial & Humaniora, 2*(2), 36-47.

conducted by Kusuma et.al[89], they found that he non-certified English teachers got adequate TPACK-related skills and expertise required to use their learning in collaborating schools. Also, research from Iskandar and Ariani[90] is in contrast with the present findings that reveal that 30% of certified teachers are categorized as insufficient and less able to carry out their duties related to learning media and technology. Another research from Lasni et.al[91] states only 37% of certified teachers can deliver material clearly, the ability to utilize media and learning technology, the ability to follow developments in science and technology and learning innovations as well as continuous professional development still needs to be improved.

However, the data of the inferential analysis demonstrated that overall (covering six components), there is no significant difference in teachers' TK, CK, PCK, TCK and TPACK mastery in public and private schools. Therefore, it can be concluded that teachers' TK, CK, PCK, TCK and TPACK mastery is not differentiated based on teachers' certification status. This result is consistent with previous study showing that there is no difference in the performance of certified and non-certified teachers. Because certified and non-certified teachers are both required to appear professional in carrying out their main duties of educating, teaching, guiding, directing, training,

[89] Kusuma, V. G., Saputra, W., Surianti, A., & Margana, M. (2023). An investigation of TPACK within ICT integration: The case of non-certified English teachers in Kolaka. *LLT Journal: A Journal on Language and Language Teaching*, *26*(2), 520-533.

[90] Iskandar, D., & Anriani, N. (2023). Kajian Dampak Sertifikasi Guru Dan Pengajaran Berbasis Teknologi Informasi Terhadap Kompetensi Guru: Literatur Review. *JIIP-Jurnal Ilmiah Ilmu Pendidikan*, *6*(2), 760-767.

[91] Lasni, dkk.. (2022). Dampak Sertifikasi Guru Terhadap Peningkatan Kualitas Pembelajaran Peserta Didik Di SMK Muh 2 Tempel. *Seminar Nasional Pengenalan Lapangan Persekolahan UAD*

and evaluating students. So that certification does not affect the performance of certified or non-certified teachers[92].

Both groups likely possess comparable levels of understanding and application of TPACK components, suggesting that factors beyond certification, such as teaching experience, institutional support, or access to professional development opportunities, may play a more critical role in shaping their mastery of TPACK. These results underline the importance of focusing on ongoing training and resources for all teachers, regardless of certification, to ensure equitable competency in leveraging technology for educational purposes.

2. Description of TPACK Mastery Level of EFL Teachers in Pangkep Regency based on School Status

The test results (table 5.2) show that the research findings indicate that there is minimal difference between state and private school teachers in their overall mastery of TPACK (Technological Pedagogical Content Knowledge). However, when examined across its six components, distinct areas of strength emerge for each group. State school teachers demonstrate superior proficiency in Content Knowledge (CK), Pedagogical Content Knowledge (PCK), and the integration of all three domains, TPACK. On the other hand, private school teachers excel in Technology Knowledge (TK), Technological Pedagogical Knowledge (TPK), and Technological Content Knowledge (TCK).

[92] Silaban, N. K. (2018). Perbedaan Kinerja Guru yang Sertifikasi dan Non Sertifikasi di SMP Negeri Kota Sibolga

These results suggest that the institutional context may influence specific aspects of TPACK mastery, potentially reflecting differences in training focus, resource availability, or teaching priorities between state and private schools.

The research highlights that state and private school teachers share a comparable overall mastery of TPACK (Technological Pedagogical Content Knowledge), an essential framework for effective technology integration in education. However, when delving deeper into the six components of TPACK, notable differences in their areas of expertise become evident. State school teachers excel in Content Knowledge (CK), which pertains to their mastery of the subject matter they teach, as well as in Pedagogical Content Knowledge (PCK), the ability to effectively deliver subject matter through appropriate teaching strategies. Furthermore, state teachers demonstrate a strong grasp of TPACK itself, indicating their ability to seamlessly integrate technology into pedagogy and content delivery, which is a hallmark of innovative teaching practices.

In contrast, private school teachers show a marked advantage in Technology Knowledge (TK), which involves their familiarity with and ability to use technological tools. They also outperform in Technological Pedagogical Knowledge (TPK), reflecting their capability to leverage technology to enhance teaching methods, and Technological Content Knowledge (TCK), which indicates their skill in

using technology to present and contextualize subject content effectively. This suggests that private schools may prioritize technological competence and its practical applications in their professional development programs, potentially due to different institutional priorities or access to technological resources.

These findings imply that while both groups of teachers possess unique strengths, there is room for mutual learning and development. State teachers could benefit from professional development that enhances their technological competencies, particularly in the practical applications of technology for pedagogy and content. Similarly, private school teachers might improve their effectiveness by deepening their understanding of content-specific teaching strategies and how these align with their technological expertise. Bridging these gaps could lead to a more balanced mastery of TPACK across educational contexts, fostering more effective teaching and learning in both state and private schools.

This discovery is aligned with Asaolu and Fashanu[93] show that the level of proficiency in ICT in private schools is twice as high as in public schools. This result is due to teachers in private schools continuing to encourage students' performance to adopt ICT where different conditions are found in public or state schools. However,

[93] Asaolu, O.S & Fashanu, T.A. (2012). Adoption of ICT and its comparative impact on private and public high schools in Lagos State, Nigeria. *International Journal of Science & Emerging Technologies*, 3 (1), 1-6, Retrieved from https://www.researchgate.net/publication/264856475.

Andoh and Issifu[94] shows that public or state schools learning in Ghana involves more ICT than private schools. Students in public schools often use ICT to support learning more than students in private schools. This result was unexpected as most private schools in Ghana have more resources on technology than public schools

Moreover, the results of the t-test showed no significant difference between state and private school teachers, so the TPACK mastery is not differentiated based on the status of the school where the teacher teaches. The results of this study are following the research of Afifah et.al[95] who found that there is no significant difference between public and private school's teacher self–perceived digital literacy. Also, the research from Naing and Wiedarti[96] reveal that EFL teachers' TPACK mastery based on school status showed no significant difference in TPACK mastery between teachers in public schools and private schools. It should be known that teachers and students in private and public schools already have their ICT tools so that the differences in the availability of ICT and infrastructure in schools do not become a barrier to their application in learning.

[94] Andoh, C. B., & Issifu, Y. (2015). Implementation of ICT in learning: a study of students in Ghanaian secondary schools. *Procedia - Social and Behavioral Sciences,* 191 (2015), 1282-1287, Retrieved from DOI: 10.1016/j.sbspro.2015.04.555

[95] Afifah, S. N., Mahfud, H., & Ardiansyah, R. (2021). Literasi digital guru SD Negeri dan SD Swasta: perceived competency dan implementasi. *Didaktika Dwija Indria*, *9*(1), 48-53.

[96] *Op.cit.* Ince Rezky Naing and Pangesti Wiedarti. (2023)

CHAPTER V

CONCLUSION AND SUGGESTION

A. *Conclusion*

Based on the research results on the mastery of EFL teachers' TPACK and its relation to the variables of teacher certification and school status, it can be concluded as follows.

1. EFL Teachers' TPACK mastery based on certification status showed no significant difference in TPACK mastery between certified and not certified teachers
2. EFL teachers' TPACK mastery based on school status showed no significant difference in TPACK mastery of teachers in state and private schools.

B. *Suggestion*

The findings of this study indicate that the TPACK mastery of EFL teachers in Pangkep Regency remains within the "good" category across all areas. Therefore, comprehensive in-service training is essential to optimize instructors' TPACK skills. Moreover, it is crucial to focus on when and how teachers integrate technology into their teaching, as well as the extent to which TPACK competencies should be consistently included in teacher education programs and periodically refreshed. Additionally, the findings of this study can serve as a framework for evaluating teachers by emphasizing the integration of ICT into instructional design. Proficiency in ICT not only enhances teachers' performance

but also contributes to improving the overall quality of education and students' academic achievement.

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INTRUMENT PENELITIAN

Appendix 1

QUESTIONNAIRE (SURVEY)

INVESTIGATING THE TECHNOLOGICAL PEDAGOGICAL CONTENT KNOWLEDGE (TPACK) OF EFL TEACHERS BASED ON SCHOOL STATUS AND TEACHERS STATUS

Nama : _____

Tempat Tugas : _____

Status : Sertifikasi/Non Sertifikasi (Coret yang salah)

Constructs	No.	Items	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)
Technology Knowledge (TK)	1	I know how to use computer mediated communication (CMC) technologies (e.g. email, chat)				
	2	I know about basic computer hardware (i.e. CD-ROM, mother-board, RAM) and their functions				
	3	I know how to save data into/from a digital device (i.e. flash disk,				

		USB stick, CD)				
	4	I know how to use generic office applications (i.e. Word, PowerPoint, and Excel)				
	5	I know how to play audio and video files on my computer				
	6	I know how to record video files (i.e. using a video camera)				
Content Knowledge (CK)	7	I can comprehend English texts accurately				
	8	I can comprehend English speech accurately				
	9	I can monitor my own writing for accuracy				
	10	I can monitor my own speech for accuracy				
	11	I am familiar with the culture(s) of target language Communities				
Technological Content Knowledge	12	I know about technologies that I can use				

(TCK)		to teach listening in English				
	13	I know about technologies that I can use to teach reading in English				
	14	I know about technologies that I can use to teach writing in English				
	15	I know about technologies that I can use to teach English language grammar				
	16	I know about technologies that I can use to teach English Vocabulary				
	17	I know about technologies that I can use to teach pronunciation of English words				
Pedagogical Content Knowledge (PCK)	18	I can react supportively to learners' interaction				
	19	I can assess student learning in multiple ways				
	20	I can keep students on				

		task				
	21	I can facilitate learning through creating opportunities for individual, partner, group and whole class work				
	22	I can choose an appropriate approach to teach learners (i.e. communicative approach, direct method)				
	23	I can plan when and how to use the target language, including meta-language I may need in the classroom				
	24	I can identify linguistic problems experienced by learners (i.e. phonological, lexical or grammatical problems)				
Technological Pedagogical Knowledge (TPK)	25	I can choose technologies that enhance the teaching approaches for a lesson				
	26	I can choose technologies that enhance students'				

		learning for a lesson				
	27	I can adapt the use of the technologies that I am learning about to different teaching activities				
	28	I can design relevant learning experiences to promote student learning, using technology				
	29	I can choose technologies to be used in assessment				
	30	I can engage students in solving authentic problems using digital technologies and resources				
Technological Pedagogical Content Knowledge (TPACK)	31	I can select technologies to use in my classroom that enhance what I teach, how I teach, and what students learn				
	31	I can use technology effectively to communicate relevant information to				

		students and peers				
	33	I can use a range of technologies to help students pursue their individual curiosities				
	34	I can use a range of technologies that enable students to become active participants				
	35	I can provide equitable access to digital language learning tools and resources				
	36	I can facilitate intercultural understanding by using technology to engage students with different cultures				

(Source: Bostancioglu and Handley,2018; Schmidt, et.al 2009; Baser, et.al, 2015)

Appendix 2

Variables		X1		X2		X3		Y1		Y2		Y3	
School	Certification	TK		CK		TPK		PCK		TCK		TPACK	
3	2	20	83.3333	19	95	24	100	20	71.4286	18	75	20	83.3333
3	1	22	91.6667	16	80	15	62.5	23	82.1429	19	79.1667	24	100
3	2	19	79.1667	17	85	17	70.8333	20	71.4286	21	87.5	19	79.1667
3	1	19	79.1667	15	75	18	75	23	82.1429	20	83.3333	18	75
3	1	15	62.5	12	60	14	58.3333	28	100	18	75	16	66.6667
3	1	18	75	15	75	20	83.3333	18	64.2857	18	75	15	62.5
3	1	23	95.8333	20	100	16	66.6667	15	53.5714	16	66.6667	23	95.8333
3	1	23	95.8333	19	95	18	75	24	85.7143	24	100	16	66.6667
3	2	20	83.3333	14	70	20	83.3333	26	92.8571	15	62.5	17	70.8333
3	2	22	91.6667	18	90	23	95.8333	25	89.2857	22	91.6667	18	75
3	1	17	70.8333	12	60	14	58.3333	20	71.4286	19	79.1667	20	83.3333
3	2	20	83.3333	12	60	18	75	21	75	17	70.8333	24	100
3	2	20	83.3333	16	80	20	83.3333	24	85.7143	15	62.5	20	83.3333
3	1	19	79.1667	16	80	14	58.3333	22	78.5714	14	58.3333	19	79.1667
3	1	24	100	14	70	16	66.6667	19	67.8571	23	95.8333	23	95.8333
3	1	20	83.3333	15	75	20	83.3333	18	64.2857	19	79.1667	19	79.1667
3	1	19	79.1667	16	80	21	87.5	20	71.4286	21	87.5	21	87.5
3	1	15	62.5	18	90	23	95.8333	17	60.7143	21	87.5	22	91.6667
3	1	24	100	13	65	18	75	23	82.1429	20	83.3333	17	70.8333
3	1	16	66.6667	14	70	19	79.1667	24	85.7143	17	70.8333	15	62.5
3	1	18	75	15	75	15	62.5	20	71.4286	18	75	20	83.3333
3	1	24	100	19	95	24	100	26	92.8571	19	79.1667	23	95.8333
3	2	22	91.6667	19	95	19	79.1667	18	64.2857	23	95.8333	23	95.8333

3	2	10	41.6667	20	100	24	100	16	57.1429	23	95.8333	21	87.5
3	1	18	75	19	95	18	75	20	71.4286	19	79.1667	22	91.6667
3	1	15	62.5	14	70	19	79.1667	27	96.4286	18	75	20	83.3333
3	1	16	66.6667	18	90	17	70.8333	23	82.1429	18	75	17	70.8333
3	1	24	100	12	60	22	91.6667	20	71.4286	21	87.5	18	75
3	1	19	79.1667	13	65	19	79.1667	19	67.8571	19	79.1667	19	79.1667
4	2	23	95.8333	16	80	21	87.5	18	64.2857	21	87.5	20	83.3333
4	2	20	83.3333	19	95	20	83.3333	16	57.1429	23	95.8333	23	95.8333
4	1	18	75	13	65	19	79.1667	15	53.5714	18	75	17	70.8333
4	1	20	83.3333	14	70	19	79.1667	20	71.4286	20	83.3333	18	75
4	2	22	91.6667	18	90	23	95.8333	26	92.8571	24	100	22	91.6667
4	1	19	79.1667	13	65	19	79.1667	22	78.5714	17	70.8333	18	75
4	2	18	75	15	75	16	66.6667	24	85.7143	15	62.5	15	62.5
4	2	18	75	19	95	23	95.8333	25	89.2857	16	66.6667	19	79.1667
4	2	21	87.5	17	85	22	91.6667	20	71.4286	18	75	21	87.5
4	1	18	75	12	60	18	75	20	71.4286	17	70.8333	20	83.3333
4	1	23	95.8333	19	95	23	95.8333	21	75	23	95.8333	16	66.6667
4	1	21	87.5	16	80	14	58.3333	22	78.5714	21	87.5	23	95.8333
4	1	17	70.8333	12	60	24	100	19	67.8571	24	100	20	83.3333
4	2	17	70.8333	13	65	16	66.6667	22	78.5714	20	83.3333	18	75
4	1	21	87.5	16	80	21	87.5	24	85.7143	20	83.3333	16	66.6667
4	2	19	79.1667	15	75	20	83.3333	23	82.1429	20	83.3333	19	79.1667
4	1	18	75	13	65	19	79.1667	22	78.5714	21	87.5	18	75
4	1	24	100	12	60	18	75	21	75	19	79.1667	19	79.1667

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PUBLISHED RESEARCH:

INVESTIGATING THE TECHNOLOGICAL PEDAGOGICAL CONTENT KNOWLEDGE (TPACK) OF EFL TEACHERS BASED ON SCHOOL STATUS AND TEACHERS STATUS AT SMA/MA OF PANGKEP REGENCY