



Perception of teachers towards blended teaching competence enhancement in Vietnam

 Doan Nguyet

Linh^{1*}

 George Wilson

Kasule²

 Nguyen Van Ninh³

¹VNU University of Education, Vietnam.

Email: linhdm@vnu.edu.vn

²School of Education, Kyambogo University, Kampala, Uganda.

Email: gwkasulem@kyu.ac.ug

³Ha Noi National University of Education, Vietnam.

Email: nguyenvanninh@hnu.edu.vn



(+ Corresponding author)

ABSTRACT

Article History

Received: 6 June 2023

Revised: 11 September 2023

Accepted: 8 March 2024

Published: 28 March 2024

Keywords

Blended teaching

Competence enhancement

High school teachers' needs

Professional learning community

Teacher competence

Vietnam.

Educational institutions regardless of context have been compelled to embed blended teaching as one of the orthodox instructional modes. The precursor for successful implementation of blended teaching is insight into current teacher competence with blended teaching and enhancement measures needed. This paper examines the perception of teachers on the current status of blended teaching competence and the relationship between participation in professional learning communities and blended teaching competence enhancement among high school teachers in Vietnam. The data comprised high school teachers' impressions of blended teaching in high schools, collected through survey questionnaires. Data analysis was done using descriptive statistics and Pearson Correlation. Findings reveal that teachers perceive the current status of blended teaching competence for high school teachers in Vietnam as moderate. Findings also unveil a very low positive but statistically significant relationship between participation in professional learning communities and blended teaching competence enhancement. This meaningful relationship serves as the foundation for broadening this study's scope to include the investigation of establishing a professional learning community that meets the needs of teachers in blended teaching competence enhancement. This research initiates to help instructors raise awareness about the significance of blended teaching in the context of today's digital change in education. The suggestions are supplied to stakeholders as a valuable option for implementing and assisting teachers in developing blended teaching competence.

Contribution/Originality: The paper unveils high school teachers' moderate blended teaching competence level in Vietnam, profiling the much-needed pragmatic mitigation measures. It pioneers a method to enhance the blended teaching competence of teachers in today's digitalized education.

1. INTRODUCTION

The COVID-19 Lockdown in 2020 in very many countries of the world will ever be recalled in human history as the time when conventional education from kindergartens to universities came to a standstill in most educational institutions (United Nations, 2020). This abrupt change highlighted an urgent need to think of alternative sustainable ways to provide education to learners at all educational levels in the face of deadly pandemics and other natural or political calamities such as wars, that can disrupt the normal functioning of educational institutions. To this end, instructional approaches such as online, hybrid, and blended learning were introduced during the COVID-

19 pandemic period and are still being used in most educational institutions across the globe (Singh, Steele, & Singh, 2021).

In Vietnam, blended teaching is a fundamental and comprehensive innovation orientation in education, a transition from a focus on content to an emphasis on learners' proficiency (Chu et al., 2017). The trend of blended teaching not only shortens the time it takes to present knowledge from many disciplines, but it also educates students to apply knowledge synthesis in practice to solve a real problem, because solving a practical problem requires integrating knowledge from multiple subjects. Blended teaching necessitates deep professional competence, interdisciplinary knowledge and broad cultural and social understanding. Additionally, it requires cognitive understanding of blended teaching competence, competence to choose content and topics, blended-oriented teaching methods, blended teaching design competence, blended teaching organization, information technology application competence in blended teaching, and transferability blended teaching experience, which are a set of 10 indicators of blended teaching competence (Chu et al., 2017).

It is undeniable that the use of Information and Communication Technology (ICT) in schools continue to upsurge across the globe (Fisher, Bushko, & White, 2017). ICT in education is the mode of education that use information and communications technology to support, enhance, and optimize the delivery of information (Team, 2018). All students benefit from the flexibility and accessibility of learning resources made possible by ICT. While all materials are available in the classroom, students can also use them outside of the classroom. Students who are slow learners or have learning difficulties would gain the most from this. Such students can go over the teachings as many times as they need to in order to fully comprehend their courses. ICT in school management is intended to educate not only students but also instructors. Regular teacher training programs are vital, and ICT assists in teaching them in their own institutes via online learning.

However, most of the empirical studies have delved more into online, hybrid, and blended learning from the learner's perspective and very little into blended teaching from the teacher's perspective. In order to have successful blended learning we must have effective blended teaching. Thus, the need to have insight into the blended teaching competence and the associated enhancement measures in developing countries like Vietnam cannot be overstated. Blended teaching is largely perceived as both physical and online teaching. Ostensibly, educational institutions at various levels have hastened to embrace blended teaching as a standard of instruction in many developing countries without adequate preparations.

There are studies that provide insights into the competence of teachers to facilitate blended instruction as paramount, requiring millions of high school learners to be assured of undisrupted teaching in the event of pandemics such as COVID-19 and other catastrophes now or in the future (Huang et al., 2020; United Nations, 2020). In this light, these studies explore the perception of teachers on the existing standing of blended instruction competence, the relationship between participation in professional learning communities and blended teaching competence enhancement among high school teachers in Vietnam.

It is commendable knowing that many Vietnamese high school teachers have ample desire to participate in a professional learning community (Linh & Kasule, 2022). Voluminous literature shows that participation in professional learning communities is key in improving the competence of a teacher to effectively execute his/her duties which lead to increased student's learning and overall higher quality instruction (Huijboom, Van Meeuwen, Rusman, & Vermeulen, 2020; Wilson, 2016). Professional learning communities need support of the academic administration in order for teachers to benefit significantly (Antinluoma, Ilomaki, & Toom, 2021). This is vital as it can lead a country to attain its educational goals and objectives (Hien, Hien, Huong, Hue, & Nguyet, 2020). It is incontrovertible that the enhancement potential to increase quality instruction from teacher participation in professional learning communities as mentioned in Huijboom et al. (2020) is dependent upon management interest. The blended teaching process requires teachers to be able to interact and connect with colleagues in order to find help in synthesizing interdisciplinary knowledge for learners. The idea of cooperative learning, learning exchange,

and discussion among members of a professional learning community is clear as the most successful technique for developing blended teaching competence in high school teachers at the educational institution.

The study was guided by the ensuing questions: 1) what is the high school teacher's perception on status of blended instruction competence in Vietnam; and 2) What is the perceived relationship between participation in professional learning communities and blended teaching competence enhancement among high school teachers in Vietnam? Hence, this paper is set to provide invaluable empirical data that can be used to appropriately answer the foregoing germane questions.

2. LITERATURE REVIEW

2.1. Conceptualization of Blended Teaching

Blended teaching in simple terms is perceived as the mixture of physical and online instruction (Muxtorjonovna, 2020). In the advent of accelerated change, overwhelming complexity, and stiff competition, blended teaching is increasingly being seen and adopted as the future of instruction in many educational institutions worldwide (Dziuban, Graham, Moskal, Norberg, & Sicilia, 2018). It is indisputable that blended instruction is most utilized in higher education (Le & Pham, 2021). However, it is vital to note that the COVID-19 pandemic changed many ways in which we do things in all aspects of life (Wang, 2020). Many educational institutions regardless of level embraced blended teaching worldwide during the "COVID-19 lock-down period" (Singh et al., 2021). Consequently, there is need to delve into how prepared teachers are to facilitate blended learning for high school students in Vietnam.

There are currently many alternative definitional and conceptual approaches to blended teaching (for a discussion, see Stacey and Gerbic (2009)). These techniques acknowledge the differences between online and in-person communication environments and try to integrate them to enhance learning and teaching. Blended teaching has been endorsed by Osguthorpe and Graham (2003) due to its capacity to reconcile the advantages and disadvantages of the traditional face-to-face and remote learning models. The importance of both the synchronous nature and human element of in-person classes and the text-based, asynchronous nature of virtual settings was highlighted by Garrison and Kanuka (2004). In addition, they explained blended teaching as both a straightforward and intricate idea, summarizing it as "the deliberate blending of in-person classroom instruction with virtual learning environments".

Blended teaching is a contemporary instructional strategy that is still gaining popularity in most educational institutions (Oweis, 2018) due to its advantages over solely online or classroom instruction (Jeffrey, Milne, Suddaby, & Higgins, 2014). Effective planning is key to implement blended teaching efficaciously (Bowyer & Chambers, 2017). Blended teaching requires a teacher to have the capability to mix traditional and technology enhanced instructional approaches (Kihzoza, Zlotnikova, Bada, & Kalegele, 2016). It is widely accepted that blended instruction has myriad of benefits (Bryan & Volchenkova, 2016). This concurs with the study of Tien and Tang (2020) who attest that the benefits of blended teaching and learning include: improving pedagogy, increasing access ability and flexibility, and cost efficiency among other things.

A teaching strategy known as blended learning combines digital tactics with the highest caliber classroom training. Certain blended learning environments may have a set timetable that alternates between online and in-person instruction. For instance, a student may enroll in one course fully online and another on campus. In universities, where blended learning has been around for a while, this method is typical. In an educational setting, blended learning is probably going to be more adaptable. To put it plainly, it implies that educators may choose from a wide range of conventional and technologically advanced teaching methods to best suit the requirements of their pupils (Best, 2020).

2.2. High School Teacher Blended Teaching Competence Status

In a study conducted by [Le and Pham \(2021\)](#) it is indicated that university teachers use adequately blended instruction in Vietnam. However, this begs the question whether high school teachers in Vietnam also possess appropriate blended teaching methods and technologies like their counterparts in the university setting. Moreover, authors such as [Pulham and Graham \(2018\)](#) advance that there is a lack of adequate studies on blended instruction competencies to inform decision making in regards to blending teaching in elementary and secondary schools. Moreover, blended instruction environment largely depend on the teacher ([Turpin, 2018](#)). Accordingly, teachers must adequately be equipped with the knowledge, skills, values and orientations as advanced by [Albrahim \(2020\)](#) in order to effectively implement blended instruction.

Currently, to achieve a high level of education without an effective use of ICT is difficult especially at high school and university education levels ([Shurygin & Sabirova, 2017](#)). The knowledge and information explosion era requires students to continue learning via various online learning platforms at their own pace and convenience to supplement and/or consolidate learning from the conventional classroom instruction. Besides, access to virtual tools in a blended environment allows students to achieve this additional support.

As discussed, blended teaching and learning requires both students and academics to have substantial ICT proficiency ([Lu & Price, 2018](#)). So, the question remains whether or not high school teachers in Vietnam possess substantial ICT proficiency to effectively implement blended teaching? This is a critical question that has to be addressed in the Vietnamese education system if it is to benefit from the blended instruction endeavor. Globally, it is acknowledged that blended instruction is a very effective teaching approach that has developed rapidly during the past few decades ([Al Khaleel, 2019](#)) so teachers, regardless of context, ought to possess adequate ICT skills that can enable them to conduct online lessons when implementing blended instruction ([Pulham & Graham, 2018](#)). In short, teachers ought to have the competence to simultaneously handle online and physical teaching ([Short, Graham, & Sabey, 2021](#)).

In summary, success of blended instruction is dependent on the teachers and learners' other factors remaining constant ([Tran, 2016](#)). Correspondingly, it is worth noting that in order to have effective blended teaching and learning, certain tools and skills, such as internet access and teacher technology competencies, must be addressed ([Yarborough, 2021](#)).

2.3. Professional Learning Communities and Blended Teaching Competence Enhancement

Constant change in the day-to-day practice of schools to implement blended teaching necessitates teachers' individual and collective learning and investigating processes to improve their own practices through vibrant professional learning communities ([Mahimuang, 2018](#)). For successful blended teaching to occur, two things are essential: comprehensive teacher training and ongoing evaluation ([Bowyer & Chambers, 2017](#)). This therefore calls for vibrant professional development programmers and activities that require teachers to have self-reflection incorporated into their practice. In this way, effective teachers identify their competence gaps and collaborate with peers in order to overcome such gaps.

A combination of contemporary instructional modes and traditional instructional modes are needed for effective instruction to happen both in the classroom and online ([Utami, 2018](#)). It is undeniable that learning is multifaceted activity, hence, the need to apply Vygotsky's social constructivist theory which encourages peer teaching and learning ([Pilgrim & Hornby, 2017](#)) which can be achieved when teachers are active participants in professional learning communities thereby teach and learn from each other.

Blended teaching in developing countries, Vietnam being no exception, faces numerous challenges for instance, a huge number of teachers and students lack stable internet access and have limited electronic devices ([Lapitan Jr, Tiangco, Sumalinog, Sabarillo, & Diaz, 2021](#)). Blended teaching enables the teacher to address these technology challenges by personalizing instruction based on students' needs and interests, integrating technology to enhance

students' 21st century skills, expanding classroom instructional models to vary learning experiences, and offering students access to additional resources, tools, and courses online (Saeed, 2020) but lack of their own connectivity requires teachers to look beyond their own approach, thus the benefit of a community. It is critical for teachers in their subject areas to form a professional learning community so that they can share knowledge and ideas regarding how best they can successfully implement blended teaching. Yarborough (2021) ascertains that "one-to-one initiatives, and professional development" are essential if fruitful blended teaching execution is to be realized. As such, the need for teachers to become competent in incorporating ICT in the instructional process cannot be overemphasized (UNESCO, 2021). This is why blended teaching and learning is gaining more popularity in Vietnam, especially in higher education institutions (Dao, Do, Pham, Van, & Nguyen, 2021). Needless to mention that blended teaching among other things offers the chance to benefit from online and face-to-face environments, thus, facilitate high content learning and mastery (Adas & Shmais, 2011).

Blended teaching is a positive development in education because it acts as a catalyst for teachers to be more innovative in the instructional process (Marshall-Stuart, 2018). This is based on the fact that it enables teachers employ a variety of pedagogies as well as use a variety of instructional materials which all enhance learner acquisition, retention, and application of knowledge, skills and values. Efficacious execution of blended teaching need a sound thought-out plan and a more dynamic methodology (Baczek, Zaganczyk-Baczek, Szpringer, Jaroszynski, & Wozakowska Kaplon, 2021). Blended teaching is seen as panacea to the old-fashioned physical instructional processes. This is in agreement with Patrick and Sturgis (2015) who assert that there is need to provide contemporary knowledge that equips the masses with the capacity solve present and future complex problems in the world. Some scholars advance that blended instructional environment is key for effective education service delivery (Shivam & Singh, 2015). Consequently, teachers at all levels ought to embrace blended teaching because education has become a global necessity (Zuvic-Butorac, Roncevic, Nemcanin, & Nebic, 2011).

3. METHODS

3.1. Research Instruments

The study was quantitative in nature and used a self-administered survey questionnaire. The questionnaire comprised three parts with eighteen items in total. The first part, respondents' background information, comprised four demographic items. The second part, which comprised eight items, delved high school teacher's discernments on the current status of blended teaching competence. The third part entailed six items and sought participants' views on the relationship between participation in professional learning communities and blended teaching competence enhancement. Responses to items in section two and three respectively were constructed following a 5-point Likert scale.

The Scale was interpreted, thus: 1.00 -1.49 = Very Low; 1.50 - 2.49 = Low; 2.50 -3.49 = Moderate; 3.50 - 4.49 = High; 4.50- 5.00 = Very High. Validity of the questionnaire was established through calculating the Content Validity Index (CVI) where three experts in educational research were used as inter-judges. Results showed that the CVI of the questionnaire was 0.87, above the acceptable social sciences research value of 0.70 (Amin, 2005). A pilot study involving 20 high school teachers who were not involved in the main study was conducted. This was geared at establishing the questionnaire's reliability. Cronbach's Alpha coefficient finding disclosed that the questionnaire's reliability was 0.81, which is within acceptable reliability value (Amin, 2005).

3.2. Sampling and data analysis

The study employed a survey research method by census sampling. After obtaining the staff list and emails of high school teachers in Vietnam, teachers were sent the questionnaire through email. Four hundred two (402) teachers filled the questionnaire. Participants' gender comprised 333 (82.2%) females and 69 (17.8%) males. Age distribution of the participants was as follows: 36-45 years = 179 (44.5%); 26-35 years = 123 (30.6%); 46-55 years =

58 (14.4%); and 25 years and younger = 42 (10.4%) respectively. The participants' teaching experience varied from more than 16 years teaching experience for 145 (36.1%) participants to 11-15 years for 100 (24.9%) participants; 7-10 years for 57 (14.4%) participants; 3-6 years for 52 (12.9%) participants; and less than 2 years for 48 (11.9%) participants respectively. Data analysis was done through Descriptive statistics and Pearson Correlation.

4. RESULTS AND DISCUSSION

4.1. Perception of High School Teachers on Current Status of Blended Teaching Competence in Vietnam

Study objective one aimed at establishing the perception of high school teachers on the current status of blended instruction competence in Vietnam. Accordingly, the ensuing research question was asked: What is the high school teacher's perception on the current status of blended teaching competence in Vietnam? Findings are displayed in Table 1.

The results in Table 1 depict that high school teachers' blended teaching capacity is perceived as moderate ($M = 2.70$). The finding is in consonance with Short et al. (2021) who avow that dimensions of blended teaching execution are problematic to validate. Results also indicate that high school teachers' interest in blended teaching is perceived as moderate ($M = 3.16$). This concurs with the work of Kihzoza et al. (2016) who advance that in most cases one's personal attitudes and perceptions about using ICT in the instructional process determines the level of interest towards implementation of blended teaching. The findings herein also divulge that high school teachers' computer operation knowledge during blended teaching is perceived as moderate ($M = 2.76$). Furthermore, the results herein exhibit that teachers' understanding of technologies used for online teaching is perceived as moderate ($M = 2.52$). The foregoing observations are in line with the work of Bowyer and Chambers (2017) who attest that a good number of teachers lack adequate competence to effectively execute online instruction.

Table 1. Perception of high school teachers on current status of blended teaching competence in Vietnam ($N = 402$).

Blended teaching competence aspect	Mean	Minimum	Maximum	Std. deviation
Perceived teachers' blended teaching capacity	2.70	1.00	5.00	0.59
Perceived teachers' interest in blended teaching	3.16	1.00	5.00	0.53
Perceived teachers' computer operation knowledge during blended teaching	2.76	1.00	5.00	0.60
Perceived teachers' understanding of technologies used for online teaching	2.52	1.00	5.00	0.57
Perceived teachers' capacity to use multimedia technologies to deliver lessons online	2.46	1.00	5.00	0.61
Perceived teachers' capacity to structure content for online instruction	2.53	1.00	5.00	0.57
Perceived teachers' capacity to design appropriate online student learning assessment and evaluation	2.41	1.00	5.00	0.61
Perceived teachers' capacity to support students during online instruction	2.51	1.00	5.00	0.62

Findings further disclose that high school teachers' capacity to use multimedia technologies to deliver lessons online is perceived as low ($M = 2.46$). This corresponds with Kihzoza et al. (2016) whose findings indicated that a huge number of teachers in developing countries lack adequate capacity to integrate ICTs in teaching and learning. Table 1 discloses that high school teachers' capacity to structure content for online instruction is perceived as moderate ($M = 2.53$). This concurs with the finding of Lapitan Jr et al. (2021) who attest that a good number of teachers lack adequate ability to structure content that provide meaningful interaction with students on top of maintaining their interest and engagement during online classes.

The results further divulge that high school teachers' capacity to design appropriate online student learning assessment and evaluation is perceived as low ($M = 2.41$). This finding is supported by the work of Pilgrim and Hornby (2017) who confirm that a good number of teachers lack adequate prerequisite knowledge, skills, and

experience for blended teaching. Results in Table 1 also unveil that high school teachers' capacity to support students during online instruction is perceived as moderate (2.51). This concurs with the work of Saeed (2020) who asserts that there is a great need to coach and mentor teachers on how to effectively implement blended teaching.

4.2. Relationship between Professional Learning Community Participation and Blended Teaching Competence Enhancement among High School Teachers in Vietnam

Study objective two was geared at establishing the relationship between professional learning community participation and blended teaching competence enhancement among high school teachers in Vietnam. Thus, the next research question is raised: Is there a statistically significant relationship between professional learning community participation and blended teaching competence enhancement among high school teachers in Vietnam?. Table 2 and Table 3 below, indicate the findings.

The results in Table 2 portray that professional learning communities have the potential to enhance high school teacher's computer operation knowledge which is desirable for a teacher to effectively implement blended teaching ($M = 4.12$). This is buttressed by Kihzoza et al. (2016) who assert that the ICT knowledge level of a teacher significantly influences his/her decision to implement blended teaching. Furthermore, results in Table 2, reveal that professional learning communities have the potential to enhance high school teacher's understanding of technologies used for online teaching ($M = 4.12$), indicating that professional learning communities offer an atmosphere that inspires professional development, collaboration, and innovation among teachers regardless of context. The results in Table 2 also show that professional learning communities have the potential to enhance high school teacher's capacity to use multimedia technologies to deliver lessons online ($M = 4.05$). This finding concurs with the work of Cheng (2017) who advances that professional learning communities are vital to positively influence teacher technology use behavior.

Table 2. Role of professional learning community participation on blended teaching competence enhancement (N = 402).

Role of PLC participation on blended teaching competence enhancement aspect	Mean	Minimum	Maximum	Std. deviation
PLC enhances teacher's computer operation knowledge during blended teaching	4.12	1.00	5.00	0.46
PLC enhances teacher's understanding of technologies used for online teaching	4.12	1.00	5.00	0.43
PLC enhances teacher's capacity to use multimedia technologies to deliver lessons online	4.05	1.00	5.00	0.50
PLC enhances teacher's capacity to structure content for online instruction	4.06	1.00	5.00	0.48
PLC enhances teacher's capacity to design appropriate online student learning assessment and evaluation	4.06	1.00	5.00	0.48
PLC enhances teacher's capacity to support students during online instruction	4.04	1.00	5.00	0.50

Results in Table 2 also divulge that professional learning communities have the potential to enhance high school teacher's capacity to structure content for online instruction ($M = 4.06$). This is supported by Glasheen (2017) who asserts that professional learning communities are panacea to enable teachers involve in transformative scholarship including structuring content for blended teaching environment. The results herein as reflected in Table 2, lucidly expose that professional learning communities have the potential to enhance high school teacher's capacity to support students during online instruction ($M = 4.04$). This finding is supported by Graham (2007) who avow that professional learning communities are central in enhancing teacher job performance.

Table 3. Correlation results on professional learning community participation and blended teaching competence enhancement (N = 402).

PLC participation		Blended teaching competence enhancement	
PLC participation	Pearson correlation	1	0.239**
	Sig. (2-tailed)		0.000
	N	402	402
Blended teaching competence enhancement	Pearson correlation	0.239**	1
	Sig. (2-tailed)	0.000	
	N	402	402

Note: **. Correlation is significant at the 0.01 level (2-tailed).

Professional learning community participation and blended teaching enhancement items on the questionnaire were computed resulting in a minimum possible score of 1 and maximum of 5. Thereafter, a Pearson Correlation at Bivariate level was conducted to find out the relationship between professional learning community participation and blended teaching competence enhancement. The result as indicated in Table 3, shows that there is very low positive but statistically significant relationship between professional learning community participation and blended teaching competence enhancement ($r = .234$, $p < .001$). Accordingly, the null hypothesis stated herein that: “there is no statistically significant relationship between professional learning community participation and blended teaching competence enhancement among high school teachers in Vietnam” is hereby rejected. This therefore implies that an increase in professional learning community participation leads to high blended teaching competence enhancement among high school teachers. The finding of the present study concurs with Hairon and Tan (2016) who aver that professional learning communities are crucial in promoting quality instructional process in the education system. Hence, the need for high school teachers to increase meaningful participation in professional learning communities in Vietnam.

5. CONCLUSION

This study established the high school teacher’s perception on the current status of blended instruction competence and the perceived relationship between participation in professional learning communities and blended teaching competence enhancement. Accordingly, it is important for educational leaders in Vietnam to adequately support the formation of learning communities so that high school teachers are supported in their acquisition of contemporary instructional pedagogies. This is deemed critical if Vietnam wants to have high quality education that foster socio-economic development of the Vietnamese people (Hien et al., 2020).

From this study, educators, especially leaders, lecturers in teacher training and fostering will realize the importance in the relationship of methodological, organizational teaching from innovation, with the development of teacher's professional competence. It can clearly be seen that, in order to be able to apply positive teaching methods such as blended teaching, forms and solutions to improve teachers' professio and professional competence also need to be invested and developed. Placing educators in professional learning communities is not a new issue, but this study raises a new challenge for educators: how can the professional learning community be transformed into an effective environment that differs from traditional professional activities that have been existed for a long time.

Findings of this study inform educational leaders on how to improve blended teaching among high school teachers in Vietnam. The study findings also underscore the need to embrace professional learning communities in the Vietnamese educational system so that teachers keep abreast with current knowledge, skills, values and orientations. This is vital because it would lead to higher learner attainment in educational institutions.

This study involved a small number (N = 402) of high school teachers in Vietnam. It is hereby suggested that it would be prudent to replicate the study by involving all high school teachers in Vietnam so that absolute blended teaching competence levels are established in the country. This would be very helpful in providing nationwide blended teaching competence levels of high school teachers and the needed mitigation measures to improve blended teaching of the high school teachers.

5.1. Policy Suggestions

The Ministry of Education and Training should advocate the policy of extending blended teaching training courses for high school teachers, particularly in rural and mountainous areas. The training courses must include clear training materials that are full of information, as well as practical lessons that use interdisciplinary knowledge in teaching and practice of using ICT in interdisciplinary and integrated teaching.

Policy on investment in infrastructure and facilities for blended teaching. Teachers who want to enhance their blended teaching competence must be successfully educated and practiced in classrooms that are completely equipped with integrated teaching materials, tools, and facilities. School administrators and leaders must encourage investment in equipment such as smart boards and electronic devices such as tablets and laptops, as well as the development of intelligent teaching software.

The policy of ensuring a sufficient number of blended teaching professionals in schools. These experts are responsible for counseling, guiding, and advising high school teachers on how to increase their active teaching competence by developing blended teaching plans and designing evaluation instruments, as well as proposing and modifying activities in the process of blended teaching.

5.2. Limitations and Future Research Directions

Due to limited research capacity and time, the study just describes the state of blended teaching competence enhancement among high school teachers in Vietnam, as well as the relationship between teaching ability development and teachers' participation in professional learning communities, without proposing blended teaching competence improvement strategies or establishing a professional learning community model that meets the above criteria. The survey samples only included high school instructors in general, with no distinction between features of teachers such as high school teachers in rural and urban areas, or experienced and long-term teachers and young teachers, or levels of access to blended teaching for teachers in Vietnam.

This study has the potential to broaden the scope of research on the formation and development of professional learning communities in order to address the needs of integrated teaching through blended learning. This professional learning community is both an environment for instructors to study, develop awareness and understanding about blended teaching, through blended learning, which combines online and face-to-face learning, to meet teachers' regular and continuing teaching and learning demands. Not only that, in addition to teachers in high schools, students at higher education institutions and colleges are also an important factor and a high-quality resource for blended learning. The objective is to approach a novel and advanced teaching method such as the blended teaching method in a significant way.

Funding: This research is supported by Vietnam National University, Hanoi, Vietnam (Grant number: QG.22.45).

Institutional Review Board Statement: The Ethical Committee of the Vietnam National University, Hanoi, Vietnam has granted approval for this study on 16 May 2022 (Ref. No. 1593).

Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.

Competing Interests: The authors declare that they have no competing interests.

Authors' Contributions: All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.

REFERENCES

- Adas, D., & Shmais, W. A. (2011). Students' perceptions towards blended learning environment using the OCC. *An-Najah University Journal for Research-B (Humanities)*, 25(6), 1681-1710.
- Al Khaleel, A. (2019). The advantages of using blended learning in studying English as a foreign language at the University of Tabuk. *Modern Journal of Language Teaching Methods*, 9(2), 1-7.

- Albrahim, F. A. (2020). Online teaching skills and competencies. *TOJET: Turkish Online Journal of Educational Technology*, 19(1), 9-20.
- Amin, M. E. (2005). *Social science research: Conceptions, methodology and analysis*. Kampala: Makerere University Printeryafid.
- Antinluoma, M., Ilomaki, L., & Toom, A. (2021). Practices of professional learning communities. *Front Education*, 6(617613), 1-14.
- Baczek, M., Zaganczyk-Baczek, M., Szpringer, M., Jaroszynski, A., & Wozakowska Kaplon, B. (2021). Students' perception of online learning during the COVID-19 pandemic: A survey study of Polish medical students. *Research Square*, 100(7), e24821. <https://doi.org/10.21203/rs.3.rs-41178/v1>
- Best, J. (2020). To teach and delight: The varieties of learning from fiction. *Review of General Psychology*, 25(1), 27-43. <https://doi.org/10.1177/1089268020977173>
- Bowyer, J., & Chambers, L. (2017). Evaluating blended learning: Bringing the elements together. *Research Matters*, 23(1), 17-26.
- Bryan, A., & Volchenkova, K. N. (2016). Blended learning: Definition, models, implications for higher education, bulletin of the South Ural State University. *Educational Sciences*, 8(2), 24-30.
- Cheng, P. L. (2017). *Professional learning community (PLC): Technology integration at a title I elementary school*. Doctoral Dissertation, San Joses State University Scholarworks.
- Chu, S. K. W., Reynolds, R. B., Tavares, N. J., Notari, M., Lee, C. W. Y., Chu, S. K. W., . . . Lee, C. W. Y. (2017). Teachers' professional development. *21st Century Skills Development Through Inquiry-Based Learning*, 109-129. https://doi.org/10.1007/978-981-10-2481-8_6
- Dao, V. T. H., Do, Q. H. M., Pham, A. M., Van, T. T. N., & Nguyen, T. T. T. (2021). Prospects of blended learning implementation at FPT University Can Tho, Vietnam. *Vietnam Journal of Education*, 5(3), 43-53.
- Dziuban, C., Graham, C. R., Moskal, P. D., Norberg, A., & Sicilia, N. (2018). Blended learning: The new normal and emerging technologies. *International Journal of Educational Technology in Higher Education*, 15(3), 1-16.
- Fisher, J. F., Bushko, K., & White, J. (2017). *Blended beyond borders: A scan of blended learning obstacles and opportunities in Brazil, Malaysia, & South Africa, WISE Report*. Retrieved from <https://files.eric.ed.gov/fulltext/ED586369.pdf>
- Garrison, D. R., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. *The Internet and Higher Education*, 7(2), 95-105.
- Glasheen, G. J. (2017). *Rewriting professional development: Professional learning communities in an urban charter school*. Doctoral Dissertation, University of Pennsylvania, Penn Libraries.
- Graham, P. (2007). Improving teacher effectiveness through structured collaboration: A case study of a professional learning community. *RMLE Online*, 31(1), 1-17.
- Hairon, S., & Tan, C. (2016). Professional learning communities in Singapore and Shanghai: Implications for teacher collaboration. *Compare: A Journal of Comparative and International Education*, 47(1), 1-14.
- Hien, N. V., Hien, N. V. B., Huong, V. T. M., Hue, H. T. K., & Nguyet, N. T. M. (2020). Vietnamese education system and teacher training: Focusing on science education. *Asia-Pacific Science Education*, 6(1), 1-28.
- Huang, R., Tlili, A., Chang, T. W., Zhang, X., Nascimbeni, F., & Burgos, D. (2020). Disrupted classes, undisrupted learning during COVID-19 outbreak in China: Application of open educational practices and resources. *Smart Learning Environments*, 7(19), 1-15.
- Huijboom, F., Van Meeuwen, P., Rusman, E., & Vermeulen, M. (2020). How to enhance teachers' professional learning by stimulating the development of professional learning communities: Operationalising a comprehensive PLC concept for assessing its development in everyday educational practice. *Professional Development Education*, 46(5), 751-769.
- Jeffrey, L. M., Milne, J., Suddaby, G., & Higgins, A. (2014). Blended learning: How teachers balance the blend of online and classroom components. *Journal of Information Technology Education*, 13(2014), 121-140. <https://doi.org/10.28945/1968>
- Kihoza, P. D., Zlotnikova, I., Bada, J. K., & Kalegele, K. (2016). An assessment of teachers' abilities to support blended learning implementation in Tanzanian secondary schools. *Continuing Education Technology*, 7(1), 60-84.

- Lapitan Jr, L. D., Tiangco, C. E., Sumalinog, D. A. G., Sabarillo, N. S., & Diaz, J. M. (2021). An effective blended online teaching and learning strategy during the COVID-19 pandemic. *Education for Chemical Engineers*, 35, 116-131. <https://doi.org/10.1016/j.ece.2021.01.012>
- Le, P. T., & Pham, H. T. T. (2021). Using blended learning in teacher training programs: Perspectives of pre-service teachers. *Journal of Education and Social Research*, 11(2), 115 - 127.
- Linh, D. N., & Kasule, G. W. (2022). Status of professional learning communities in developing countries: Case of Vietnam and Uganda. *International Journal of Evaluation and Research in Education*, 11(1), 61-68.
- Lu, J., & Price, J. (2018). Chinese students' ICT readiness for a blended teaching and learning environment. *Eurasia Journal of Mathematics, Science and Technology Education*, 14(7), 2907-2914. <https://doi.org/10.29333/ejmste/90991>
- Mahimuang, S. (2018). *Professional learning community of teachers: A hypothesis model development*. Paper presented at the International Academic Research Conference, Vienna.
- Marshall-Stuart, D. D. (2018). *Blended learning as an instructional strategy to improve academic performance*. Unpublished PhD Dissertation, Walden University.
- Muxtorjonovna, A. M. (2020). Significance of blended learning in education system. *The American Journal of Social Science and Education Innovation*, 2(8), 507-511.
- Osguthorpe, R., & Graham, C. (2003). Blended learning environments: Definitions and directions. *The Quarterly Review of Distance Education*, 4(3), 227-233.
- Oweis, T. I. (2018). Effects of using a blended learning method on students' achievement and motivation to learn English in Jordan: A pilot case study. *Hindawi Education Research International*, 1-7. <https://doi.org/10.1155/2018/7425924>
- Patrick, S., & Sturgis, C. (2015). Maximizing competency education and blended learning: Insights from experts. *CompetencyWorks Issue Brief. International Association for K-12 Online Learning*.
- Pilgrim, M., & Hornby, G. (2017). Enablers and barriers to developing competencies in a blended learning programme for specialist teachers in New Zealand. *Educational Review*, 70(2), 1-17.
- Pulham, E. B., & Graham, C. R. (2018). Comparing K-12 online and blended teaching competencies: A literature review. *Distance Education*, 39(3), 411-432.
- Saeed, N. (2020). *Teachers' perceptions on the use of the blended learning*. Unpublished PhD Dissertation, Houston Baptist University.
- Shivam, R., & Singh, S. (2015). Implementation of blended learning in classroom: A review paper. *International Journal of Science and Research*, 5(11), 369-372.
- Short, C. R., Graham, C. R., & Sabey, E. (2021). K-12 blended teaching skills and abilities: An analysis of blended teaching artifacts. *Journal of Online Learning Research*, 7(1), 5-33.
- Shurygin, V. Y., & Sabirova, F. M. (2017). Particularities of blended learning implementation in teaching physics by means of LMS Moodle. *Spaces Magazine*, 38(40), 39.
- Singh, J., Steele, K., & Singh, L. (2021). Combining the best of online and face-to-face learning: Hybrid and blended learning approach for COVID-19, post vaccine, & post-pandemic world. *Journal of Educational Technology Systems*, 50(2), 140-171. <https://doi.org/10.1177/00472395211047865>
- Stacey, E., & Gerbic, P. (2009). Introduction to blended learning practices. In E. Stacey & P. Gerbic (Eds.), *Effective blended learning practices: Evidenced-based perspectives in ICT-Facilitated education*. In (pp. 1-20). Hershey, PA: Information Science Reference.
- Team, L. (2018). *ICT enabled education: Medium*. Retrieved from [https://stories.linways.in/ict-enabled-education-d190bcc91bf0#:~:text=Information%20and%20Communication%20Technology%20\(ICT,optimise%20the%20delivery%20of%20information](https://stories.linways.in/ict-enabled-education-d190bcc91bf0#:~:text=Information%20and%20Communication%20Technology%20(ICT,optimise%20the%20delivery%20of%20information)
- Tien, H. N., & Tang, M. S. (2020). Digital transformation trend in Vietnam higher education: Blended learning model. *International Journal of Social Science and Economic Innovation*, 6(7), 303 - 309.

- Tran, K. N. N. (2016). The adoption of blended e-learning technology in Vietnam using a revision of the technology acceptance model. *Journal of Information Technology Education Research*, 15(15), 253-282.
- Turpin, C. M. (2018). *Blended learning and its effect on student achievement: An action research study*. Unpublished PhD Dissertation, University of South Carolina – Columbia, Scholar Commons.
- UNESCO. (2021). *ICT competency framework for teachers*. Paris, France: UNESCO.
- United Nations. (2020). *Policy brief: Education during COVID-19 and beyond*. Retrieved from https://reliefweb.int/attachments/e25d0da8-04a8-33a1-b7b2-78d209e89bde/sg_policy_brief_covid-19_and_education_august_2020.pdf
- Utami, I. S. (2018). The effect of blended learning model on senior high school students' achievement. *SHS Web of Conferences*, 42, 2-6. <https://doi.org/10.1051/shsconf/20184200027>
- Wang, C. (2020). To cope with a new Coronavirus pandemic: How life may be changed forever. *Chinese Journal of International Law*, 19(2), 221-228.
- Wilson, A. (2016). From professional practice to practical leader: Teacher leadership in professional learning communities. *International Journal of Teacher Leadership*, 7(2), 45-62.
- Yarborough, K. A. T. (2021). *Teachers' perceptions of blended learning in high school classrooms*. Unpublished PhD Dissertation, Walden University.
- Zuvic-Butorac, M., Roncevic, N., Nemcanin, D., & Nebic, Z. (2011). Blended e-learning in higher education: Research on students' perspective. *Issues in Informing Science and Information Technology*, 8(2011), 410-429.

Views and opinions expressed in this article are the views and opinions of the author(s), International Journal of Education and Practice shall not be responsible or answerable for any loss, damage or liability etc. caused in relation to/arising out of the use of the content.