

## Beginning teacher induction program for technology integration in CLIL

Thooptong Kwansawad <sup>a, \*</sup>

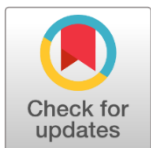
<sup>a</sup> Faculty of Education, Mahasarakham University, Nakhonsawan Road, Ta-Lad, Muang District, Mahasarakham, 44000, Thailand

\*Corresponding author email: [thooptongk@hotmail.com](mailto:thooptongk@hotmail.com)

DOI: <https://doi.org/10.34256/ajir2043>

Received: 04-06-2020

Accepted: 09-10-2020



**Abstract:** Beginning teacher induction is a transition from pre-service teacher preparation to teaching professional which brings a shift in a role orientation and an epistemological move from knowing about teaching through formal study to knowing how to teach by facing daily teaching challenges. This paper deals with the implementation and evaluation of beginning teacher induction programs for technology integration in Content and Language Integrated Learning (CLIL) for 24 beginning teachers from the northeastern region in Thailand. Both quantitative and qualitative data were collected. Quantitative data were collected from the assessment of the lesson plans and implementation of the lesson plans then analyzed using mean and standard deviation. Qualitative data were collected from three sources: (1) written logs by the participants, (2) data from video observation by the researcher, and (3) field notes by the researcher. Findings from the assessment of the lesson plans and implementation of the lesson plans were at a low level. Almost all participants reported having difficulties in technology integration in CLIL.

**Keywords:** Induction program, CLIL teacher education, technology integration.

### 1. Introduction

The first few years of teaching is a considerable amount of time in that beginning teachers must develop their own teacher identity (McCann & Johannessen, 2004) and the ideal teacher they want to be as well as the methodologies they have to adopt to become this desired teacher (Koehler & Kim, 2012). As a result, beginning teachers struggle to create a productive learning environment, assess the students' learning, plan the instruction, discover the individual and cultural differences in their working place, and learn about the school, school district and

government policies (Youngs, 2007). No matter how good a pre-service program may be, there are still some things that can only be learned on the job (Feiman-Nemser, 2001). They should be seen as empowered individuals who should also look to themselves for continued improvement in their effectiveness within a nurturing context (Onafowora, 2004). Hence provision of support is essential so that beginning teachers can develop competencies, confidence, and skills that will make them successful in the job (Bubb, 2007).

The induction program is the training program of adjustment to the conditions faced in the first few years of the teaching profession. The goal of induction is to train beginning teachers effective teaching strategies and techniques that will improve student learning, growth, and achievement. Education systems around the world tend to invest the most in initial teacher education and ensure that teaching professional development begins with induction (UNESCO, 2014). Formal induction for beginning teachers is required in 18 out of 33 OECD countries with available data. If well designed, this type of professional development can improve retention, and job satisfaction among novice teachers (OECD, 2016). Much of the research found that teachers participating in induction programs have a better performance in engaging students in instruction, developing effective question and answer practices, developing lesson plans, creating a positive classroom climate and preparing activities to meet the students' needs. Additionally, students of teachers who participate in induction programs have higher academic test scores (Ingersoll & Strong, 2011). In terms of examining teacher induction programs, education researchers, Ingersoll and Strong (2011) published a meta-analysis of 15 empirical studies conducted over the previous 25 years. They found that induction programs have a consistently positive impact on teacher retention. In addition, beginning teachers who participate in some form of induction are more effective in various aspects of teaching including getting students on task, designing classroom activities in line with student interests, promoting effective student questioning, developing lesson plans, keeping classroom atmosphere positive, and demonstrating successful classroom management.

The induction program is a consistent and ongoing professional process that aims to train, support, and to ensure the tenure of beginning teachers, in which this process

represents the first part of a lifelong professional development program (Wong, 2004). A comprehensive induction program generally includes professional development which incorporates professional learning communities (PLCs) (CCSESA, 2016). Since PLCs are, at this time, undoubtedly in the ascendant in educational policy and practice. Professional learning communities have a systematic and positive effect on student learning outcomes, school systems are investing considerable energy in developing themselves as professional learning communities (Talbert, 2010).

As requirements in the teaching profession are changing quickly, it is necessitating an evolution in strategies on the part of teachers. This means teachers themselves need to reflect on their personal learning needs in their specific settings and take increasing responsibility for their personal lifelong learning. At a minimum, beginning teachers should possess specialist knowledge of the area they teach, in addition to the required pedagogical skills. Especially, these teachers should be able to make efficient use of information and communication technology (ICT) (European Commission, 2009). Regarding literacy teachers, due to the introduction of digital technology into everyday life, the term literacy has been redefined. Literacy can mean conceiving and communicating in multiple media and modality forms (Coiro, Leu, Knobel & Lankshear, 2008). Literacy teachers are responsible for teaching communication skills in reading and writing to build foundational literacy skills that students will need in many genres of communication in both academic and daily life (Hutchison & Reinking, 2011). Thus, classroom instruction should involve a significant shift in the types of reading, writing, and communicating that students learn to do. Increasing digital technologies and the related digital literacy skills create a need for a change in the content and delivery of literacy instruction. Teacher professional development

is important as it relates to technology integration given that technology changes rapidly and its use in classrooms continues to grow and change.

Research has been conducted to understand the effectiveness of professional development aimed at improving technology integration. Some studies have been done on professional development aimed at improving technology integration. Kwangsawad (2017) conducted research on the implementation and evaluation of a professional development program for technology integration in CLT for 32 in-service EFL teachers from primary and secondary school levels. The professional development used for this study included several components such as a workshop, lesson plan development and implementation, classroom observation, and teacher reflection. The other study was done by O'Hara, Pritchard, Huang, and Pella (2013). The study reported how teachers examined a professional development model that focused on teachers' knowledge and behaviors regarding integrating technology into teaching and learning. A pre/post measure of the Knowledge/Use Scale was used along with teacher reflections, classroom observations, and student technology-proficiency data. The findings from this study suggested that professional development models that are designed specifically around technology integration within teaching and learning that focuses on participants' needs and interest can improve teacher knowledge.

The present study was undertaken to report a two-year induction program for beginning teachers to develop teaching competencies to adjust to the changing needs of students in a world of rapid social, cultural, economic, and technological change. Therefore, the study aimed at implementing and evaluating the beginning teacher induction program for technology integration in CLIL. To evaluate the program, the study addressed the following questions:

1. Do the beginning teachers' teaching skills improve as the results of participation in the induction program? The effectiveness of the program evaluated through the improvement of their teaching skills in technology integration in CLIL.
2. What are the beginning teachers' experiences with participating in the program? The practicality of the program evaluated through PLC activities and workshops.

### *1.1 Professional Development for Technology Integration*

Instructional technology professional development must be focused not only on specific hardware and software but also on the strategies that support student learning – strategies that enable teachers to teach differently and support inquiry and collaboration (Mazzella, 2011). There are three types of knowledge that teachers need to adopt ICT in their classrooms effectively: technology, pedagogy, and content. Teachers might not be able to use technology appropriately without an effective on-going teacher professional development on these three types of knowledge (Mishra & Koehler, 2006). ICT knowledge and skill-based courses are not enough for preparing teachers to integrate ICT in classrooms since they are taught separately from a pedagogical context. Professional development models that do not focus on subject-specific pedagogy will lead to teachers having difficulties in linking technology with pedagogy. From this reason, many teachers who have received ICT training as part of their professional development still lack the confidence because the limitation in ICT integration skills makes them feel anxious about using ICT in the classroom and thus not confident to use it in their teaching (Harris, Mishra & Koehler, 2009). To train ICT integration skills, some researchers emphasize the need for career development programs in which teachers engage in inquiry and reflect

on their practices to improve their learning about technology integration (Zeichner, 2006).

## 1.2 CLIL

The forces of global change, converging technologies, and adaptability to the subsequent knowledge age present challenges for education. And within education as a whole, they present challenges for the teaching and learning of an additional language. CLIL responds to the challenges of globalization and promotes social harmony. CLIL was developed as an innovative form of education in response to the demands and expectations of the modern age. Input from different academic fields contributed to the recognition of this approach to educational practice (Coyle, Hood & Marsh, 2010).

CLIL is an innovative approach that refers to educational settings where a language different from the learners' mother tongue is used as a medium of instruction. The other language is used from kindergarten to tertiary level, and the extent of its use may range from occasional foreign language texts in individual subjects to covering the whole curriculum (Papaja & Swiatek, 2016). Thus, CLIL demands a new type of teacher, who will need not only linguistic and disciplinary training but also methodological skills.

Coyle, et al. (2010) developed a framework for integrating content and language which is called The 4C's Framework which integrates four contextualized building blocks: content (subject matter), communication (language learning and using), cognition (learning and thinking process) and culture (developing intercultural understanding and global citizenship, civility and environmental sensitivity and sense of responsibility, contexts, and content which enrich the learners' understanding of their own culture and those of others). In so doing, it takes into account integrating content learning and language learning within specific

contexts and acknowledges the symbiotic relationship that exists between these elements. It suggests that effective CLIL takes place as a result of this interrelation through progression in knowledge; skills and understanding of the content, development of appropriate language knowledge and skills, interaction in a communicative context, engagement in associated cognitive processing, and the acquisition of deepening intercultural awareness.

## 2. Method

In this study, a mixed-method design was employed in which the quantitative component was dominant, while the qualitative component was used to complement quantitative findings.

### 2.1 Participants

This study involved 24 EFL beginning teachers from secondary and primary schools from two provinces in the northeastern region of Thailand to participate in the program at Mahasarakham University, Thailand. Before attending the program, only four teachers had CLIL and technology integration experiences through a five-year pre-service teacher education program. Twenty teachers were not previously familiar with CLIL.

#### 2.1.1 The Induction Program

Implementation of an induction program is a joint venture of the schools, the Thai national educational authorities, and universities. Four trainers, including the researcher, from the university level set up strategies to introduce new teachers effective teaching strategies and techniques that will improve student learning, growth, and achievement. The context of the program spanned both virtual and face to face contact over the two-year time frame and was conducted in 2018-2019. With regard to active



engagement, the beginning teachers became the chief designers who actively participated in developing their lesson plans and then implemented them in real classrooms. Three phases were undertaken to provide the beginning teachers with authentic learning experiences during the program. Each phase is shortly detailed below.

### *2.1.2 Workshop*

The first phase was a two-day workshop on CLIL with technology integration in CLIL, involving 24 beginning teachers who participated in this program. The workshop provided them with knowledge and skills in CLIL and how to integrate technology into CLIL lesson plans. The four trainers served as facilitators who were responsible for introducing the content of the workshop which included CLIL and integrating technology into CLIL lesson plans. Then, each beginning teacher developed the first lesson plan based on aligning technology with CILL that fit with the curriculum, while the four trainers were only to facilitate and give support during the process. This phase was aimed at providing the beginning teachers with the opportunity and experiences of integrating technology into the CLIL lesson plan. The four trainers gave comments and evaluated the lesson plans. Furthermore, the participants were asked to create their own digital portfolios for collecting evidence of their works such as teaching videos, classroom photos, lesson plans, and logs.

### *2.1.3 Implementation of the Lesson Plans*

The second phase was the implementation of the lesson plan phase. For this phase, each beginning teacher performed the developed lesson plan and video recorded the delivery of the first lesson in the actual classroom. The setting for feedback and evaluation was done online with the participants submitting videos electronically

by uploading them in their own digital portfolios and receiving feedback on the videos.

### *2.1.4 PLC Meeting*

One possible way to support teachers as they integrate technology into their instruction is through the professional learning community (PLC) concept. PLC activities allowed the beginning teachers to share their teaching in order to discover their needs, difficulties, and realize the improvement that they experienced during the program. In this study, video reflection and PLC logs were designed to help the teachers grow. The PLC meetings were arranged by the four trainers at the university two times (once a year). At the first PLC meeting, the participants were required to discuss and share experiences. The discussion was based on observations of each participant's video clip of the classroom teaching. At this point, they had an opportunity to exchange ideas, provide comments, and suggestions which focused on integrating technology in the CLIL classroom that helped students to reach their goals, how both students and the teachers achieved or failed to participate in the activities, what problems they faced and how they solved any encountered problems. The researcher recorded observations through field notes.

After video reflection, each participant developed the second lesson plan based on the lesson learned from the first video reflection from other participants. The four trainers assessed the lesson plans and gave feedback. At the end of the meeting, the participants were required to collect data with a log. In these logs, they wrote what they had experienced, what they had learned from their fellow participants, what difficulties they had encountered, and what changes they could make to improve their teaching. The participants were also required to complete the implementation of their second lesson plans and videotape the implementation

within three months after the meeting. Then, they had to upload the video to their digital portfolios for feedback and assessment by the four trainers. After three months, the second PLC meeting was held following the same procedure that had been used for the first PLC meeting.

## 2.2 Data Collection

This study used quantitative and qualitative techniques to collect data. To evaluate skills in CLIL and technology integration in CLIL, the researcher assessed the first lesson plan during the workshop phase, the second lesson plan during the PLC meeting time, and assessed teaching videos during the implementation of the lesson plans phase. The researcher used the criteria based on the adapted Technology Integration Assessment Rubric from [Harris, Grandgenett, and Hofer \(2010\)](#) to assess the lesson plans and the implementation of the lesson plans.

There were six categories rated using a 4-point scale, with each point having specific explanations. The categories were as follows: (1) curriculum goals and technologies, (2) instructional strategies and technologies, (3) technology selection(s), (4) fit, (5) instructional use, and (6) technology logistics. Each category received a score from 1 to 4, with specific explanations. The first four categories were used to assess the lesson plans while the last two categories were used to assess the implementation of the lesson plans which were done through video observation.

To investigate the beginning teachers' experiences with participating in the program, the researcher observed and took notes during the workshop phase and the PLC meetings phase. The participants were also asked to fill out their logs during the PLC meetings phase. The log comprised of seven open-ended questions such as "What have you learned from the program?", "Write about what was/were the difficult thing(s) in creating and

implementing lesson plans?", "Explain Why?", as well as the other four questions.

### 1) 2.3 Data Analysis

The data collected for this study were analyzed quantitatively and qualitatively. Quantitative data were collected from the assessment of the lesson plans and implementation of the lesson plans then analyzed using mean and standard deviation. On the other hand, Qualitative data were collected from three sources: (1) written logs by the participants, (2) data from video observation by the researcher, and (3) field notes by the researcher during the PLC meetings phase. The researcher coded the raw data. This coding aimed at breaking the data into categories. The researcher then generated the categories based on emerging themes. To ensure trustworthiness, the researcher triangulated the data for finding regularities in the data.

## 3. Findings

### 3.1 Beginning Teachers' Teaching Skills

To assess the lesson plans, data were analyzed using the criteria based on the adapted Technology Integration Assessment Rubric (the first four categories) from [Harris et al. \(2010\)](#). The description of the data is presented in Table 1. The total means show that the beginning teachers' skills in developing technology integrated into CLIL lesson plans were at a low level.

To assess the implementation of lesson plans, data were analyzed using the criteria based on the adapted Technology Integration Assessment Rubric (the last two categories) from [Harris et al. \(2010\)](#). The description of the data is presented in Table 2. The total means show that the beginning teachers' skills in implementing technology integrated into CLIL lesson plans were at a low level.

**Table 1. Mean scores of the beginning teachers' lesson plan assessment**

Criteria	Mean	S.D.
Curriculum Goals & Technologies (Curriculum-based technology use)	2.08	0.65
CLIL & Technologies (Using technologies in CLIL)	2.00	0.72
Technology Selection (s) (Compatibility with curriculum goals & CLIL)	2.00	0.72
"Fit" (Content, CLIL and technology together)	1.75	0.90

**Table 2. Mean scores of the beginning teachers' implementation of the lesson plans**

Criteria	Mean	S.D.
Instructional Use (Using technologies effectively for instruction)	1.92	1.14
Technology Logistics (Operating technologies effectively)	1.88	1.15

### 3.2 Beginning Teachers' Experiences with Participating in the Program

As the goal of this research was to implement and evaluate the induction program for technology integration in CLIL classrooms, the goal of the evaluation was, therefore to find out its practicality regarding the beginning teachers' difficulties and improvement that they experienced during the program. The following three main themes emerged from analyzing the data.

### 3.3 Curriculum Goals, Technologies, and CLIL

Based on the collective coding analysis of video observation, the researcher's field

notes and the teachers' logs, it was found that twenty teachers used only PowerPoint on presentation steps to pre-teach grammar and vocabulary. They used PowerPoint for their presentations like they were accustomed to doing in the university classroom instead of using PowerPoint as multimedia visual aids in the school classroom. They did not connect between technology and pedagogy in this context. In addition, they experienced difficulties in stating learning objectives. This may be due to a lack of understanding of what CLIL is. The researcher also observed that they struggled with identifying what sort of language focus might fit with 4 C's. The following eight excerpts taken from the logs exemplify this finding.

*"There is a lot I don't understand about 4 C's."*

*"I have a hard time finding online technology to fit with CLIL."*

*"I am not good at technology, the only technology that can use is PowerPoint."*

*"I have a problem with choosing a quiz game to teach reading that makes learning fun and engaging, finally, I found that Kahoot is a tool for using technology to administer quizzes."*

*"I don't know how to add text to speech to the text."*

*"I can't find technology that fits with teaching cognition. I think selecting technology to teach critical thinking is the most difficult thing for me."*

*"To be honest, I had never heard about CLIL before. This is the first time for me, I think I need more time to practice writing CLIL lesson plans."*

*"I don't know how to write learning objectives based on 4 C's."*

Only the four teachers who had CLIL and technology integration experiences through a five-year pre-service teacher education program exhibited technology

integration to 4C's (content, communication, cognition, and culture). Moreover, technologies that the four teachers used in the CLIL plans were aligned with curriculum goals. They all used videos as a pre-reading activity to build background knowledge of the students on the science text that they taught. For content, all of them used online game-based learning platforms including Kahoot, Secretive, Quizizz, and Charades.

Regarding the communication aspect, two teachers incorporated TV programs while another two teachers used text to speech programs to help students develop their speaking skills. In terms of cognition, the four teachers created activities to promote problem-solving skills. The teachers asked the students to work in a group of five to solve the problems from given situations. During the activities, the students were allowed to use their mobile phones to find the information they needed for problem-solving.

Finally, for culture, the four mentioned teachers provided the students with community-based projects to increase understanding of and connection to the communities. The community-based projects allowed students to realize their place in a global society and to appreciate the value of helping their community grow and improve in many different ways as well. After learning about the water cycle, one teacher had the students work in a group of five to discuss the drought problem in their community and create a policy for reducing its effects; made a smart poster using the HP Reveal Program and a questionnaire to collect data from the community on how to save water. Two of the teachers assigned projects that had students create solutions for environmental problems in their country. The students created videos with environmental campaigns and then uploaded the videos on YouTube. The last one asked the students to create health service projects. After learning about the heart, the students visited the elderly in their

community, gave them suggestions on how to take care of their hearts, and taught the elderly how to use the application "Heart Rate Free program" from a smartphone to measure heart rate. The following two excerpts taken from the logs exemplify this finding.

*"Actually, I have learned about CLIL and TPACK from TEFL courses before joining this program. However, PLC meetings gave me a chance for sharing and watching teaching videos, I especially learned how to use and analyze the tools that I haven't known before."*

*"For me CLIL is not difficult. I can help my friend create a lesson plan at the workshop."*

### 3.4 Difficulties in Content

All beginning teachers had difficulties in content. The researcher's field notes and the teachers' log confirmed that all beginning teachers encountered the problem of content. They had to master subject matters that are beyond their field of expertise. They also had to use texts and materials that focus on concepts they were unfamiliar with and became engaged in activities that they were not accustomed to, consequently, their working effort was doubled. The following three excerpts taken from the logs exemplify this finding.

*"Knowledge about science in the English language is very difficult. I just don't have any ideas to select videos that fit the text."*

*"I am not familiar with math. I spent a lot of time learning about factorization. There are a lot of terms that I have never seen before."*

*"I didn't understand about electrolysis of the solution, so I asked a science teacher to help me to prepare the lessons."*



### 3.5 Instructional Use of Technologies and Classroom Language

The researcher observed the teaching videos and found that the same four teachers who were familiar with CLIL and technology prior to attending the program operated technologies effectively. They were very good at directing the students to the Internet, helping them to use mobile phones as well as to create videos, monitoring them while working in groups, and helping them when needed. On the other hand, the researcher observed that the other twenty teachers were not confident about using technologies, as mentioned earlier they did not use any other technology except PowerPoint. Twelve teachers wrote that they felt uncomfortable about using technologies because of not being familiar with using and they had rarely used any type of technology in the classroom.

In terms of the language classroom, the researcher observed that the four aforementioned teachers instructed their whole lessons in English. Contrary to the four teachers, the other twenty teachers were to some extent hesitant to draw on English as the classroom language. English was limited to greetings and short sentences. Giving task instructions and transferring knowledge were generally done in Thai. The following four excerpts taken from the logs exemplify this finding.

*"My school provides TV, projectors and fast Internet, but I am not good at using them. I think I have to learn how to use them."*

*"I realize that learning with technology has become essential in today's schools. I want to improve my technology skills."*

*"My students are poor. They don't have mobile phones."*

*"My school has a limited budget for Internet and computers."*

### 4. Conclusion and Discussion

The focus of the study was the evaluation of an induction program for technology integration in CLIL. Data coming from the lesson plans and classroom observations of 24 beginning teachers were analyzed using Technology Integration Assessment Rubric from Harris et al. (2010).

The descriptive statistics indicated a low level of performance on the part of the participants in their abilities to integrate technology. In addition, the analysis of three sources of the qualitative data shows that almost all students who are unfamiliar with CLIL methodology have problems integrating technology into CLIL. Twelve teachers wrote that they felt uncomfortable about using technologies because of not being used to it since they had rarely used any type of technology in the classroom. Niess (2008) pointed out that no matter how the coursework is in providing them with knowledge about teaching with technology, they must have opportunities to apply this knowledge. Prensky (2001) insisted that the problem of technology integration in classrooms lead to a deep disconnect between the current generation of students who have spent their formative years immersed in technology (digital natives), and those teachers (digital immigrants) whose experience with and knowledge of the digitized world may be underdeveloped. The teachers who do not acknowledge the changes in students' learning preferences may find it more difficult to teach the new generation. Thus, findings from this study suggested that it is important for teachers to become aware that there is always more to learn about merging technology and instruction, and teaching and learning is a shared endeavor. Furthermore, school administrators should provide a budget for media education such as TV, projectors,

and the Internet as well as opportunities for new teachers to attend training in technology and technology integration. Specific training that integrates technology into content areas and aligned with curriculum would be of great benefit.

The current study has two implications for future practices. Firstly, for the duration of the workshop and PLC meeting, Feiman-Nemser (2001) stated that learning to teach takes time, support, and direction over an entire teaching career. Therefore, teachers need appropriate support and opportunities for powerful learning. Wong (2005) suggested that the effective teacher induction program included providing ample workshops, training, and professional development for beginning teachers that continue beyond the first year. These opportunities give new teachers vital information on topics relevant to their first year in the classroom. This program provided two-day workshops and PLC meetings once a year. The participants need more time to practice in achieving this goal, two-day workshops and PLC meetings once a year was not enough time to experience all of the new concepts available. Therefore, it might be suggested that the program should provide beginning teachers with adequate time to learn, practice, implement, and reflect upon new strategies that facilitate changes in their practice.

Secondly, it is also suggested for pre-service teacher programs. Only four teachers in this program who had had CLIL and technology integration experiences through a five-year pre-service teacher education program performed effectively both creating and implementing lesson plans. Other teachers reported that before attending this program they were unfamiliar with CLIL and technology integration. The results of this study

implied that the beginning teachers are likely to enter the school system with more confidence if the pre-service study program has insured their familiarity with the teaching methodologies as well as various types of subject-relevant teaching aids. Feiman-Nemser (2001) suggested that professional learning should be continued from the initial preparation through early teaching. Teacher induction is framed as a transition from pre-service preparation to practice, from the student of teaching to the teacher of students. If the pre-service teacher education program has been successful, beginning teachers will have a compelling vision of good teaching and a beginning repertoire of approaches to curriculum, instruction, and assessment consistent with that vision. Thus, this study suggested that university teacher preparation programs should be developed connected to the induction program which meets the need of beginning teachers.

## References

- Bubb, S. (2007). *Successful induction for new teachers: A guide for NQTs and induction tutors, coordinators and mentors*. London, United Kingdom: Paul Chapman Publishing.
- CCSESA. (2016). *Best practices in teacher and administrator induction programs*. Research Report California County Superintendents Educational Services Association. Retrieved from <https://www.slocoe.org/wp-content/uploads/2015/11/Teacher-and-Administrator-Induction-Programs-CCSESA.pdf>
- Coiro, J., Leu, D., Knobel, M., & Lankshear, C. (2008). *Handbook of research on new literacies*. Retrieved from <https://www.researchgate.net/publication/228682372> Handbook of Research on New Literacies
- Coyle, D., Hood, P., & Marsh, D. (2010). *CLIL: Content and language integrated learning*. Cambridge: Cambridge University Press.
- European Commission. (2009). *Policy approaches supporting the acquisition and continuous development of teacher competences*. Warsaw: Author.
- Feiman-Nemser, S. (2001). From preparation to practice: Designing a continuum to strengthen and sustain teaching. *Teachers College Record*, 103, 1013-1055.
- Harris, J., Grandgenett, N., & Hofer, M. (2010). Testing a TPACK-based technology integration assessment rubric. In D. Gibson & B. Dodge (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference 2010* (pp. 3833-3840). Chesapeake, VA: AACE.
- Harris, J., Mishra, P., & Koehler, M. (2009). Teachers' technological pedagogical content knowledge and learning activity types: Curriculum-based technology integration refrained. *Journal of Research on Technology in Education*, 41(4), 393-416. <https://doi.org/10.1080/15391523.2009.10782536>
- Hutchison, A., & Reinking, D. (2011). Teachers' perceptions of integrating information and communication technologies into literacy instruction: A national survey in the United States. *Reading Research Quarterly* 46(4), 312- 333. <https://doi.org/10.1002/RRQ.002>
- Ingersoll, R., & Strong, M. (2011). The impact of induction and mentoring programs for beginning teachers: A critical review of the research. *Review of Education Research*, 81(2), 201-233. <https://doi.org/10.3102/0034654311403323>
- Koehler, A. A., & Kim, C. M. (2012). Improving beginning teacher induction program through distance education. *Contemporary Educational Technology*, 3(3), 212-233. <https://doi.org/10.30935/cedtech/6079>
- Kwangsawad, T. (2017). In-service EFL teacher development for technology integration in communicative language teaching. *Asian Journal of Education and e-Learning*, 5, 44-52. <https://doi.org/10.24203/ajeel.v5i2.4465>
- Mazzella, A. M. (2011). What are we learning about technology integration and professional development?. *Educator's Voice*, 4, 42-49.
- McCann, M. T., & Johannessen, R. C. (2004). Why do new teachers cry?. *The Clearing House*, 77(4), 138-145. <https://doi.org/10.3200/TCHS.77.4.138-145>
- Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A new framework for teacher knowledge. *Teachers College Record*, 108(6), 1017-1054.
- Niess, M. L. (2008). Guiding pre-service teacher in developing TPCK. In N. Silverman (Ed.), *Handbook of technological pedagogical content knowledge (TPCK) for educator* (pp. 223-250). New York: Routledge.

- OECD. (2016). *Education in Thailand: An OECD-UNESCO perspective*. Paris, France: OECD Publishing. <https://doi.org/10.1787/9789264259119-9-en>
- O'Hara, S., Pritchard, R., Huang, C., & Pella, S. (2013). The teaching using technology studio: Learning to use new technologies through responsive teacher professional development. *TESOL Journal*, 4(2), 274–294. <https://doi.org/10.1002/tesj.58>
- Onafowora, L. L. (2004). Teacher efficacy issues in the practice of novice teachers. *Educational Research Quarterly*, 28(4), 34–44
- Papaja, K., & Swiatek, A. (2016). *Modernizing educational practice: Perspective in content and language integrated learning (CLIL)*. Newcastle: Cambridge Scholars Publishing.
- Prensky, M. (2001). Digital natives, digital immigrants part 1. *On the Horizon*, 9(5), 1-6. <https://doi.org/10.1108/10748120110424816>
- Talbert, E. J. (2010). Professional learning communities at the crossroads: How systems hinder or engender change. In A. Hargreaves, A. Lieberman & M. Fullan (Eds), *Second international handbook of educational change* (pp. 555- 571). Springer of International Handbooks of Education, 23. <https://doi.org/10.1007/978-90-481-2660-632>
- UNESCO. (2014). *EFA global monitoring report–teaching and learning: Achieving quality for all*. Retrieved from <http://unesdoc.org/images/0022/002256/225660e.pdf>
- Wong, H. (2005). New teacher induction: The foundation for comprehensive, coherent, and sustained professional development. In H. Portner (Ed.), *New teacher induction and mentoring: The state of the art and beyond* (pp. 47-54). Thousand Oaks, CA: Corwin Press.
- Wong, H. K. (2004). Induction programs that keep new teachers teaching and improving. *NASSP Bulletin*, 88(638), 41-58. <https://doi.org/10.1177/019263650408863804>
- Youngs, P. (2007). How elementary principals' beliefs and actions influence new teachers' experiences. *Educational Administration Quarterly*, 43(1), 101-137. <https://doi.org/10.1177/0013161X06293629>
- Zeichner, M. K. (2003). Teacher research as professional development P–12 educators in the USA. *Educational Action Research*, 11(2), 301-326. <https://doi.org/10.1080/09650790300200211>

### About the Author

**Thooptong** is a senior lecturer in the Department of curriculum and instruction, Mahasarakham University in Thailand. She teaches pre-service teachers education students in Teaching English as a Foreign Language. Her research explores EFL teacher development, and language pedagogy and education.

**Funding:** No funding was received for conducting this study.

**Conflict of Interest:** The Author has no conflicts of interest to declare that they are relevant to the content of this article.

**About the License:** © The author 2020. The text of this article is open access and licensed under a Creative Commons Attribution 4.0 International License