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Research Article

# Building a Bridge: Preparing Student Teachers' Instructional Competence through School Integrated Learning (SIL)

**Rewanee Chaichaowarat**

*Faculty of Education, Udon Thani Rajabhat University*

Corresponding author: rewanee.ch@udru.ac.th

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## Abstract

Promoting and supporting student teachers to have the opportunity to learn and have experiences in real schools and classrooms as work-integrated learning (WIL) can help them develop compliance competencies. This article focuses on identifying student teachers' instructional competency and a developing School Integrated Learning (SIL) process to enhance their competency by conducting a study with 191 second year undergraduate student teachers enrolled at the Faculty of Education at a university located in northeast Thailand, 8 teacher educators, and 11 school mentors who work in Professional Development Schools (PDSs). The result revealed that student teachers' instructional competencies consisted of 13 indicators in three domains: student-oriented instructional design, implement and practice of diverse teaching strategies and assessment of student learning and self-learning. All competencies can develop through SIL process; PROACTIVE is an acronym for preparation, recap the lessons learnt, observe the classroom, apply knowledge, create a lesson plan, teaching in the classroom, identify student learning, visit other classrooms and evaluate self competency. A strong relationship between educators, school mentors and student teachers as PLC members through SIL is the key of the process proposed and their sharing-reflection can help student teachers improve their instructional competency.

Keywords: School Integrated Learning (SIL), Professional Learning Community (PLC), Student teacher, Instructional competency

## Introduction

In addition to focusing on developing professional competencies for in-service teachers, preparing novice teachers or student teachers to achieve such competency are also important and necessary. Darling-Hammond (2000) and Brookfield (2012) studied teacher competency and found that if teachers possessed suitable knowledge and skills to teach, or student teachers are well prepared for proper competencies, students learning will be directly affected.

The Office of the Education Council of Thailand (2013) stated that education faculties should develop a curriculum focused on teachers' competencies, especially courses that prepare student teachers to perform teacher jobs in various disciplines. Student teachers must be prepared to learn and perform the work of teachers in schools so that they can work effectively in real-life situations and advance in the teaching profession because the knowledge and skills they learn and practice at university are consistent with their competencies in real situations. It also helps them to make connections between theory and practice under the supervision and mentorship of in-service teachers. This learning process allows a student teacher to shape their practice to their existing knowledge and new experiences gained through hands-on practice with real learners (National Council for Accreditation of Teacher Education [NCATE], 2010).

This conforms to the Professional Teacher Standards regarding the professional experience of student teachers, as determined by the Teachers Council of Thailand. These standards are made up of four aspects: Design of an instruction or learning management in a specific field of study; measuring and evaluating student learning; appropriate improvement and development of student learning; conducting classroom action research about teaching and learning and preparing reports on learning management and learner development results.

Promoting and supporting student teachers to have the opportunity to learn and have experiences in real schools and classrooms is an approach that is consistent with the concept of Work Integrated Learning (WIL) which integrates teaching and learning in faculties or educational institutions together with working in real contexts, and help them develop compliant competencies. The actual working context

of the teaching profession is the school, so the term "School Integrated Learning or SIL" is used as a case of experiential learning that gives student teachers the opportunity to apply their knowledge and skills related to the profession.

Becoming members of a Professional Learning Community (PLC) through School Integrated Learning (SIL) can help student teachers get to know how to work in the teaching profession. Since the PLC concept focuses on building a culture of collaboration among members, members trust and focus on professional investigations as well as jointly propose practical guidance to develop students' learning under the hypothesis that planning, designing an instruction, learning management and teaching preparation are as important as teaching in the classroom (Seashore et al., 2003).

Although the conceptualized models of SIL might differ between institutions, the core concepts are based on a triad alliance involving student teachers, school mentors, and educators from the faculty (Kazeni & McNaught, 2020). Further research in teacher education points to the importance of the practicum, the school mentors' role and the educators' role, and also points out the need to encourage mentors and supervisors to work together because their collaboration can promote the learning of pre-service teachers (Murray-Harvey et al., 2000). However, in such concepts, there is a need to develop the process which can enhance a second year student teachers' instructional competencies through school integrated learning and define their "instructional competencies".

Setting clear expectations for second year student teachers' instructional competencies through "SIL process" is important for guiding educators from education faculties and school mentors to help them be able to design an instruction, planning, and teaching that are suitable for the content and context. This should help student teachers become more confident in professional practice and constantly improve their instructional competencies.

## Research Questions

1. What was expected of second year student teachers to teach through the school integrated learning process?

2. How instructional competency enhanced through the school integrated learning process for second year student teachers?

## Research Aims

1. To identify the second year student teacher instructional competencies through the school integrated learning process.

2. To develop enhanced the instructional competency through the school integrated learning process for second year student teachers.

## Research Methodology

This study relied on research and development to develop a process to enhance instructional competency through SIL and identify the instructional competency of second year student teachers. A quantitative methodology was used to confirm the instructional competency and satisfaction in the process of student teachers, educators and school mentors. Meanwhile, a qualitative methodology was also used to gain deeper understanding of the enhancement of student teacher instructional competency through the process. The research process was conducted in four phases over six months in the second semester of the 2020 academic year.

### Research Sample and Sampling

The research sample included 191 second year undergraduate B.Ed. student teachers, in addition to 8 teacher educators responsible for the student teachers in the practicum course and 11 school mentors working in a Professional Development School (PDS). Purposive sampling was used to select the study participants. The sample included student teachers trained in all subjects and all levels of elementary school. All participants were informed of the research design and agreed to the use of their data.

### Research Process

This research was conducted in four phases as follows.

Phase 1: Studying the conditions and problems of developing the instructional competency of second year student teachers through the SIL process and their instructional competencies by collecting information from previous studies and related documents. This

included research notes taken from teaching and learning in the course ED16201. Collected data was used to determine the scope of the questions about the instructional competency of the second year student teachers and the process to enhance instructional competency through SIL.

Phase 2: Developing a data collection tool from a study of the state and problems about the instructional of the student teacher through SIL and previous studies found in phase one to synthesize the components of student teacher instructional competency and the attributes to enhance instructional competency through the SIL process for second year student teachers. The developed research tools were a questionnaire on the instructional competencies of student teachers and a questionnaire for the opinions on the process to enhance instructional competency through school integrated learning.

Phase 3: At the end of the semester, the researcher collected data using tools developed in phase 2 from the participants. The data was then analyzed and synthesized for the components of student teacher instructional competency and developed a process to enhance instructional competency through SIL for second year student teachers.

Phase 4: Presenting the student teachers' instructional competency and the process of enhancing instructional competency through SIL for second year student teachers to experts, educators, and school mentors in the focus group process. The results of the focus group analysis and synthesis used baseline data for improved instructional competency and the process to enhance instructional competency through SIL for second year student teachers.

**Ethical Considerations**

Ethical clearance was obtained from the Ethics Committee of the institution (ethics approval number MHESI 0622.7/264).

**Data analysis**

A mixed data approach was used to gather and analyze to identify and describe student teacher instructional competency and the process to enhance instructional competency through SIL. The analysis focused on the Exploratory Factor Analysis (EFA) to state the components of "instructional competency" for second year student teachers, and assessed the instructional competency of student teachers after participating in the SIL process, including opinions about the process developed in this research. The qualitative and quantitative data was analyzed in the following ways:

1. Quantitative data was analyzed using descriptive statistical measures such as frequency, percentage, arithmetic mean ($\bar{X}$), Standard Deviation (S.D.), Skewness (Sk), and Kurtosis (Ku) to present general findings including the instructional competency of student teacher assessment and opinions about the developed process. Moreover, Exploratory Factor Analysis (EFA) was used which extracts the principle component analysis, rotating the axes perpendicularly to become independent components by varimax rotation under the consideration criteria were eigenvalue ≥ 1 to the underlying structure of relative set of variables and groups the components of second year student teachers' instructional competency.

2. Qualitative data from the questionnaire and focus group interviews was analyzed using thematic coding (Creswell, 2014). This process involved the close reading and comparison of participant responses, followed by sorting the responses into theme and categories. The identification of emerging themes and patterns regarding participants' experiences of the developed SIL process and their suggestions for improving the process allowed the researcher to use an analytic induction method to draw conclusions and meet the research aims.

## Findings

This section presents the research question answers found from the research.

**1. Instructional competency of student teachers**

According to Kline (2014), reliability coefficient within the range of 0.90 to 0.70 is acceptable matching up to excellent, very good and adequate, although Slater (1995) suggests that certain 0.60 is regarded as reasonable. Table 1 shows the result of EFA, it was run using principal components with varimax rotation. No item was deleted from factor loadings, it ranges from 0.638 to 0.778 and they were all significant.

**Table 1** EFA of instructional competency of student teachers

| Domain and Items | loadings | α | Eigen values | Total% of Variance |
|---|---|---|---|---|
| Student-oriented instructional design. | | 0.751 | 18.251 | 60.837 |
| - Deepened and broadened knowledge of what to teach, identifying of the core concepts of content and the aims of teaching or learning. | 0.778 | | | |
| - Designing an instructional which focuses on student learning based on education trends and curricula. | 0.751 | | | |
| - Developing lesson plans towards the development of student quality and capacity. | 0.751 | | | |
| - Developing or selecting learning materials and learning resources which can support student learning. | 0.725 | | | |
| Implement and practice diverse teaching strategies. | | 0.945 | 2.131 | 7.103 |
| - Teaching with the understanding that students have different educational preparedness and learning styles. | 0.731 | | | |
| - Using proper positive discipline to manage classroom activities of various classes. | 0.692 | | | |
| - Promoting both acquisition and application of knowledge, understanding, skills, and attitudes. | 0.681 | | | |
| - Using various pedagogy to enable students to learn by doing, construct their concepts, and that they are happy to learn. | 0.638 | | | |
| - Adapting or alternating learning activities in the classroom to enable students to develop their potential. | 0.638 | | | |
| Assessment of student learning and self-learning. | | 0.767 | 1.053 | 3.511 |
| - Simply learning assesses based on student diversity. | 0.811 | | | |
| - Developing student learning through consistent formative and summative assessment. | 0.796 | | | |
| - Identifying reasonable strengths and weaknesses in pedagogy and learning activities in the classroom, including recommendations and solutions. | 0.761 | | | |
| - Engaging in sharing and reflection of PLC members in developing instructional design, teaching strategies, and student learning assessment. | 0.742 | | | |

The first factor (Student-oriented instructional design) explained 60.837% of the variance, the second factor (Implement and practice diverse teaching strategies) also explained 7.103% of the variance while the last factor (Assessment of student learning and self-learning) explained 3.511% of the variance. The three factors eigenvalues, all greater than 1.0, collectively explained 71.451% by the variance. The above mentioned results showed that all loadings were significant. Furthermore, this study shows evidence of convergent and discriminates validity. The study tested the reliability estimates for the variables for each construct.

**2. Process of enhancing instructional competency through school integrated learning**

The purpose of the process is to enhance the instructional competency of second year student teachers through SIL, and because the process was based on WIL and PLC concepts, the role of student teachers, educators, and school mentors as PLC members involved sharing and reflecting according to the process in addition to facilitate student teachers as PLC members to develop their instructional competency. The role of PLC members will be described in each step of the process, yet for the effectiveness of the process, facilitators are important to coordinate, prepare, and consult.

The research found that there are nine steps of the process to enhance instructional competency for second year student teachers through SIL for one semester. Table 2 shows the process which can be called the PROACTIVE model.

**Table 2** The PROACTIVE model

| Step | Week | Details |
|---|---|---|
| Preparation | 1-3 | Course lecturer responsible for the course should prepare second year student teachers about the teacher profession, teacher jobs, teacher competency, the concepts of TPACK, an instructional design, and detail of the process to enhance instructional competency through SIL, including how to be a member of a PLC which has a role to share and reflect (in action, on action, for action) with educators and school mentors. |
| Recap the lessons learnt | 4 | Teacher educators should allow the student teachers to share and reflect from their preparation and review the knowledge, skills, and attitudes that are relevant and necessary for teaching and other assignments in the PDS. |
| Observe the classroom | 5 | The first week in the PDS. This step enables each student teacher to observe the classroom assigned in the PDS. In this week, the student teacher should identify the content of subjects to design an instruction in the next step and use the lesson plan designed in the classroom in weeks 7-9 with their educator and school mentors. |
| Apply knowledge | 6 | While student teachers are in the PDS. They will apply all knowledge from the two-first steps including the information about learning contexts from classroom observation in step three to design an instruction for the assigned classroom and performing teacher works or tasks assigned in the PDS. |
| Create a lesson plan | 6 | This step is also in week 6 in which student teachers or groups of student teachers present their lesson plans designed to PLC members, including student teachers, educators, and school mentors. Other members reflect on their design and lesson plan so all student teachers who are PLC members will know how to improve the instruction and lesson plan as assigned. |
| Teaching in the classroom | 7-9 | Student teachers or groups of them conduct their teaching and learning activities according to the instructional design within the PDS under classroom observation of educators, school mentors, and other student teachers. PLC members can take photos or record clips during the activities to inform members who are unable to observe the classroom in real-time and to share and reflect in the step "Visit other classrooms". |

**Table 2** The PROACTIVE model (cont.)

| Step | Week | Details |
|---|---|---|
| Identify student learning | 7-9 | Student teachers who teach in the classroom as a teacher should assess learning outcomes of their students and identify students' learning both during and after learning activities. |
| Visit other classrooms | 7-9 | Student teachers visit other classrooms or watch recorded clips, reflect on their visits, and share and reflect their learning from classroom observations with PLC members. |
| Evaluate Self Competency | 10-15 | Student teachers return to the university in which student teachers share and reflect in action, on action, for action from their practice in PDSs and assess their instructional competency based on their own perception. |

## Conclusions and discussions

From the study findings, the instructional competency of second year student teachers has three domains: 1) Student-oriented instructional design, 2) Implementation and practice of diverse teaching strategies; and 3) Assessing student learning and self-learning. The process of enhancing instructional competency of second year student teachers through SIL for one semester had nine steps which can be called the PROACTIVE model. This process requires the educator to be actively involved with the school mentor and student teachers in the PLC as members to share and reflect to enable students to develop their learning. During the process which identified the role of educators, school mentors, and student teachers in each step, including when and what they will learn at university and in the PDS, student teachers' instructional competency was developed.

Previous research has found that teacher education should include academic knowledge (theory) and professional experience (practice) which is gained from university, and also includes knowledge about teaching and other responsibilities as a teacher in the school context (Zeichner, 2010). Student teacher education programs around the world are increasingly becoming field based with student teaching as the capstone experience for learning in the program.

Shulman (1986, as cited in Mishra and Koehler, 2008) suggested that pre-service teacher preparation must focus on preparing student teachers as professionals with pedagogical knowledge and content knowledge as well as pedagogical content knowledge. Meanwhile, Zegwaard et al. (2019) asked student teachers to indicate the topics for which they needed professional development in a separate question, in which the student teachers were asked to indicate the top three professional development needs and they found that pressing needs could be broadly themed around student learning i.e., learning outcomes, curricular design, reflective learning, and assessment.

This study indicated the instructional competency for second year student teachers who were teaching in the classroom for the first time and the core need of the PROACTIVE model focused on developing instructional competency of student teachers through SIL. Due to researcher realized the need and importance of student teacher training, and also found that practicum is a critical stage of student teachers transition, to be both socialized in the environment of university life and studies in addition to preparing for a dynamic social and professional environment in which they will work as the teachers.

Regarding the process of enhancing instructional competency through SIL, the PROACTIVE model focused on developing instructional competency of second year student teachers, which should involve the educator being actively involved with the school mentor and student teachers in the PLC as members in the PDS.

Niess et al. (2008) suggested that student teacher preparation through training in PDS would have a direct impact on their future teaching ability, while Meyer (2002) found that novice teachers who lack teaching experience would benefit from being a member of a PLC. In this study, the role of mentors from school and educators is very important to prepare student teachers because the educator would both actively engage with the PLC with a scholarly focus and they would also get support from their school mentor and other student teachers.

The connection between both the educator from the faculty and the school mentor is notably strengthened and the connections developed as collaboratively work are strengthened significantly. The shift is thus from being engaged in terms of supporting the learning of the student teacher to supporting the systematic reflection in, reflection on and reflection for their teaching and also their student learning with the aim of adapting or alternating learning activities in the classroom to enable their students to develop their potential. The proposed model, PROACTIVE, then increases the value of the membership for all parties and forms the basis of sustainable improvement in teaching and learning for all members, including educators, school mentors, and student teachers to align with Hay (2020) which attested to the importance of placing field educators into this traditional tripartite relationship thus celebrating their central role in student learning.

The student teachers who participated in this research stated that it was important for student teachers to be able to truly understand their students before designing and appropriate instruction. The positive experience of PROACTIVE model which prepared student teacher readiness for WIL is premised on passing pre-requisite courses, having sufficient disciplinary knowledge to begin the theory-practice integration, and in the social work discipline, meeting the regulatory fit and proper person criteria. The present study highlighted a focus on appropriate fit between the student teacher and their school mentors or educators rather than a student's readiness stemming from previous course completion. This finding is supported by Hay and Brown (2015) which recommended increasing attention by higher education institutions on the development and assessment of attributes and interpersonal capabilities of student teachers.

The combination of group-work and reflection is an effective way to develop student teacher autonomy and prepare them for real-life classroom teaching (Kazeni & McNaught, 2020). In this study, during work-integrated learning (WIL) through the PROACTIVE process, student teachers usually practiced what they learned in theory under the apprenticeship of educators and school mentors, including other student teachers and PLC members who attempted to design an instruction and develop lesson plans by sharing and reflecting with all members. The student teachers then implemented what they had suggested and reflected on their learning experiences and other members observed their classroom. The findings indicate that the use of group discussion and reflection developed the student teachers' instructional competency, which resulted in improved teaching.

## Recommendations

In light of this research on instructional competencies of second year student teachers and the process of enhancing instructional competency through SIL, the researcher offers the following suggestions to maintain instructional competency and enhance student teachers' weaknesses for better teaching performance through SIL.

Regarding their competencies that require improvement, student teachers should attend seminars about instructional competency organized by universities or institutions before attending to the process of enhancing an instructional competency through school integrated learning. Knowing the aspects will allow them to better develop their instructional competency during WIL. School mentors and educators from the university who handle student teachers through the PROACTIVE process should provide guidelines, especially in the final demonstration to enhance instructional competencies that need improvements, and close collaboration possible between the educator and the school mentor must

be established so that both work together to coach and mentor student teachers to improve all aspects of their instructional competence.

However, the process to enhance instructional competency through SIL based on the PLC and WIL approach, which can be considered as a culture of work within school and can be adjusted to the context of each PDS, so consider the appropriateness of applying this process in a work culture that can support the tripartite relationship between educators, school mentors, and student teachers.

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