



วารสารอิเล็กทรอนิกส์  
ทางการศึกษา

OJED, Vol.9, No.1, 2014, pp. 487-491

O J E D

An Online Journal  
of Education  
<http://www.edu.chula.ac.th/ojed>

การนำเสนอแนวทางการพัฒนาหลักสูตรการฝึกหัดครูภาษาอังกฤษ  
ระดับประถมศึกษาสำหรับวิทยาลัยการฝึกหัดครูระดับจังหวัดราชอาณาจักรกัมพูชา

PROPOSED GUIDELINES FOR DEVELOPING PRIMARY ENGLISH TEACHER TRAINING PROGRAMS  
FOR PROVINCIAL TEACHER TRAINING COLLEGES, KINGDOM OF CAMBODIA

นายปุม เจีย \*

Mr. Pum Chea

อาจารย์ ดร. จุฑารัตน์ วิบูลผล \*\*

Jutarat Vibulphol, Ph.D.

**บทคัดย่อ**

งานวิจัยครั้งนี้มีวัตถุประสงค์เพื่อนำเสนอแนวทางการพัฒนาหลักสูตรการฝึกหัดครูภาษาอังกฤษระดับประถมศึกษาสำหรับราชอาณาจักรกัมพูชา โดยมีวัตถุประสงค์ที่จะระบุเป้าหมาย สมรรถนะสำคัญ และขอบเขตเนื้อหาสำหรับการพัฒนาหลักสูตรการฝึกหัดครูภาษาอังกฤษระดับประถมศึกษาสำหรับวิทยาลัยฝึกหัดครูระดับจังหวัด (PTTCs) ราชอาณาจักรกัมพูชา การศึกษานี้ใช้แบบสำรวจออนไลน์ตามวิธีเดลฟาย จำนวน 3 รอบ การสำรวจทั้ง 3 รอบนั้นนำมาใช้เพื่อบ่งชี้ จัดลำดับก่อนหลัง และจำแนก เป้าหมาย สมรรถนะสำคัญ และขอบเขตเนื้อหา การสำรวจใช้เวลารวม 14 สัปดาห์ นักพัฒนาหลักสูตรและนักการศึกษาด้านการฝึกหัดครูภาษาอังกฤษจากกระทรวงศึกษา เยาวชน และกีฬา ได้รับเชิญให้ร่วมเป็นผู้ทรงคุณวุฒิ แบบสอบถามสร้างขึ้นจากการวิจัยเอกสารหลักสูตรฝึกหัดครูภาษาอังกฤษในกลุ่มประเทศอาเซียนหลายประเทศโดยอิงจากกรอบแนวคิด TPACK การวิเคราะห์ข้อมูลเป็นการวิเคราะห์ทั้งในเชิงปริมาณและเชิงคุณภาพ สถิติที่ใช้ได้แก่ ค่าเฉลี่ย ค่าเบี่ยงเบนมาตรฐาน ร้อยละ และการวิเคราะห์เนื้อหา

ผลการวิจัยจากการสำรวจความเห็นของผู้ทรงคุณวุฒิตามวิธีเดลฟายสรุปเป็นแนวทางสำหรับการพัฒนาหลักสูตรการฝึกหัดครูภาษาอังกฤษระดับประถมศึกษาสำหรับวิทยาลัยการฝึกหัดครูระดับจังหวัด ราชอาณาจักรกัมพูชา ประกอบด้วยเป้าหมาย 5 ด้าน สมรรถนะสำคัญ 14 สมรรถนะ และขอบเขตเนื้อหา 15 หัวข้อ

\* Teacher Trainer, Provincial Teacher Training College

Kampong Thom, Cambodia

E-mail Address: cheapum@gmail.com

\*\* Lecturer, Department of Curriculum and Instruction

Faculty of Education, Chulalongkorn University, Bangkok, Thailand

E-mail Address: jutarat.v@chula.ac.th

ISBN 1905-4491

## Abstract

The purpose of this research was to propose guidelines for developing primary English teacher training programs in Cambodia. Specifically, the objective was to ascertain the aims, key competencies, and content domains for developing primary English teacher training programs for Provincial Teacher Training Colleges (PTTCs) in the Kingdom of Cambodia. The study employed three rounds of an online Delphi survey. The three rounds were used to identify, prioritize, and classify the aims with key competencies and content domains. The survey lasted for 14 weeks. A panel of English curriculum designers and English teacher trainers from the Cambodian Ministry of Education, Youth and Sports were invited to participate as the experts. The questionnaire was generated from documentary research of primary English teacher education programs in several ASEAN countries based on the TPACK framework. The data were analyzed quantitatively and qualitatively according to the responses received. Percentages and content analysis were employed in the data analysis.

The findings of the Delphi survey were used to propose the guidelines for developing primary English teacher training programs at PTTCs in Cambodia. The guidelines consist of 5 aims, 14 key competencies, and 15 content domains.

**คำสำคัญ:** การพัฒนาหลักสูตร/ หลักสูตรฝึกหัดครูสอนภาษาอังกฤษ/ วิจัยเดลฟาย

**KEYWORDS:** CURRICULUM DEVELOPMENT/ ENGLISH TEACHER TRAINING PROGRAM/ DELPHI METHOD

## Introduction

Education is regarded internationally as an important field in ensuring the human resource development in order to meet national needs. While the world is changing, education reform is also needed. Each country has to develop human resources continuously to respond to the changes. In order to fulfill these needs, higher education plays a prominent role in responding to the changing of the society. Additionally, the experiences from developed countries in the world demonstrate that developing human resources in higher educational institutions is essential for advancing the country (Ministry of Education, Youth and Sport, 2010). Teacher education is viewed as one of the most critical processes for strengthening the education. It has been identified as a central variable in the transformation and reform of educational systems at national and local levels (Freeman, 2001). Several countries around the world have witnessed these major changes and development in teacher education (Sinlarat, 2003).

As the coming of the ASEAN Community in 2015, each ASEAN member state is preparing itself for the integration. The Educational system is expected to be changed to educate their citizens for this new community. Since the ASEAN Charter stated “The working language of ASEAN shall be English.” (ASEAN, 2008), to strengthen the integration, English is an important

subject to be reformed in non-English speaking member states. Being able to communicate directly with one another, people in the ASEAN countries need to be proficient in the English language (ASEAN, 2009). Therefore, some ASEAN nations are concerned about amendments to the English curriculum since primary education level in preparation for the upcoming integration. In Cambodia, in particular, English is not included in their primary education. Therefore, the Ministry of Education, Youth and Sports (MoEYS) has initiated the idea to update their national curricula to equip Cambodian students with English ability from the primary school level.

To put this primary English education policy into practice, English teacher education system in Cambodia will need to be changed. MoEYS will have to prepare the Provincial Teacher Training Colleges (PTTCs) for the training of English teachers for primary education. Since there has been no research study regarding to English teacher training programs for the primary education level in Cambodia, this research study aimed to provide ideas based on the review of current English teacher training programs in several countries in the same region and the Delphi survey of Cambodian educators' opinions in this regard for the development of the primary English teacher training programs at PTTCs in Cambodia.

### **Objective**

The objective of this research study was to propose the guidelines for developing primary English teacher training programs for Provincial Teacher Training Colleges in Cambodia.

### **Methodology**

The Delphi method was employed to determine the most important key competencies required for primary English student teachers and to ascertain a set of aims and content domains to develop guidelines for primary English teacher training programs at PTTCs in Cambodia. The policy Delphi was employed because it is used for generating alternative ideas.

#### **Delphi Method**

The three-round online survey was designed to obtain experts' opinions about the aims, key competencies, and content domains for primary English teacher training programs in Cambodia. The first round questionnaire was generated from the review of primary teacher education programs in several countries in ASEAN including Singapore, the Philippines, Malaysia, Thailand, Vietnam, Lao PDR and lower secondary English teacher training program in Cambodia. For the following rounds, the responses from the previous round were summarized and used to generate a new questionnaire (see Figure 1). The criteria for consensus in this study as the agreement on any particular item of the questionnaire was determined to be 75% as in Murry

and Hammons (1995). For the additional comments and suggestions, they would be considered when being recommended by at least three experts.

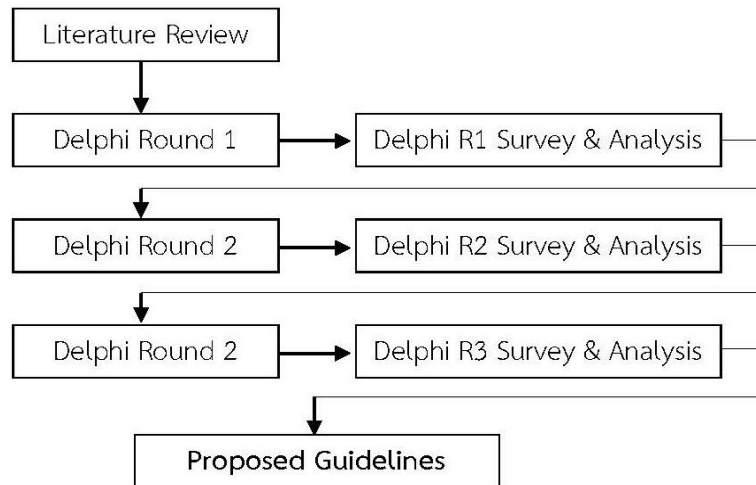


Figure 1. The Delphi process

### Delphi Round 1

In Round 1, the participants were asked to rate the importance of aims, key competencies, and content domains for the primary English teacher training programs at PTTCs on the online questionnaire using a four-point Likert scale ranging from Very Important (4), Important (3), Somewhat Important (2) to Not Important (1). They were also encouraged to give additional comments and suggestions for each item.

### Delphi Round 2

The objective of Round 2 was to confirm the answers from Round 1. The participants were also shown the previous round response of the panel for each item in terms of mean, standard deviation and percentages.

### Delphi Round 3

The objective of Round 3 was to classify the aims with key competencies and content domains. In this round, the participants were asked to rate their agreement with the classification of the top prioritized aims, key competencies, and content domains, and to provide suggestions for making them more relevant and inclusive. This round, a different set of four-point Likert scale indicating the degree of agreement ranging from Strongly Agree (4), Agree (3), Disagree (2) to Strongly Disagree (1) was employed.

## Delphi Panel

Two groups of panelists were purposively selected, the first group was the English curriculum developers from the Department of Curriculum Development and the Department of Teacher Training of the Cambodian MoEYS, and the second group included English teacher trainers from National Institute of Education (NIE), Regional Teacher Training Colleges (RTTCs) and PTTCs. A total of 27 participants—8 from the first group and 19 from the second—participated in Round 1 survey.

For Round 2 and Round 3, all 27 participants from Round 1 were sent the questionnaires. A total of 20 (74%) and 17 (85%) responded to the questionnaires in Round 2 and Round 3 respectively. There was a notice of a drop out of participants across the three rounds, 7 participants (26%) from Round 1 to Round 2 and 3 participants (15%) from Round 2 to Round 3, resulting in an overall drop out of 10 participants (37%) from Round 1 to Round 3. However, the overall number of participants remained acceptable and in line with other research studies such as Senyshyn (2002), Kantz (2004) and Clark (2005).

Table 1 presents the profile of the participants across the three Delphi rounds. In terms of professional experiences, at least 53% of the participants in all rounds had ten or more years of professional experiences. Likewise, more than half of the participants (59%) had a master's or doctorate degree. There was slightly more representation of English teacher trainer professionals (59%) in the last round. Remarkably, only 29% of respondents were from curriculum development disciplines which 41% of respondents were curriculum developer professionals.

In sum, the panel profile suggested that the panel had credentials to contribute valuable and diverse viewpoints for the study. As seen in the profile, the participants comprised Cambodian educators from the fields related directly to the scope of the study—curriculum developers and English teacher trainers. In addition, most of them had an adequate number of years working in the fields as well as pursued education after the bachelor's degree. This indicates that the participants had considerable professional and academic experiences in teacher education, especially in the TEFL field, which would yield trustworthy findings in this study.

Table 1

*Profile of the Participants in Each Round*

	<u>Round 1</u>		<u>Round 2</u>		<u>Round 3</u>	
	f	%	f	%	f	%
Professional experiences (years)						
5-9	14	52%	11	55%	8	47%
10-14	8	30%	4	20%	4	23%
15-20	3	11%	3	15%	3	18%
20+	2	7%	2	10%	2	12%
Highest educational degree						
Bachelor's	12	44%	6	35%	7	41%
Master's	14	52%	12	60%	9	53%
Doctoral	1	4%	1	5%	1	6%
Profession						
Curriculum Developer	8	30%	7	35%	7	41%
English Teacher Trainer	19	70%	13	65%	10	59%
Disciplinary expertise						
Curriculum Development	6	22%	5	25%	5	29%
TEFL	21	78%	15	75%	12	71%
<b>Total</b>	<b>27</b>	<b>100%</b>	<b>20</b>	<b>100%</b>	<b>17</b>	<b>100%</b>

**Research Instruments**

Three instruments that were referred to as Round 1 Questionnaire, Round 2 Questionnaire and Round 3 Questionnaire were used. Round 1 questionnaire was designed based on the review of the primary teacher education programs in Singapore, the Philippines, Malaysia, Thailand, Vietnam, Lao PDR, and Cambodian lower secondary school teacher training program. It comprised 5 aims, 16 key competencies, and 18 content domains, which allowed the participants to rate the importance of each item and to suggest additional aims, key competencies and content domains to be included in the list. Round 1 questionnaire was checked by 3 experts in the fields before administering it. Round 2 and 3 questionnaires were designed based on the responses received from its previous round. The questionnaire for Round 1 consisted of 4 parts, Round 2 consisted of 3 parts and Round 3 consisted of the classification of aims with key competencies and content domains. The questionnaire was distributed to the participants in an electronic format via email.

### **Data Collection Procedures**

The data were collected in October-December 2013 and lasted for 14 weeks. The invitation included the informed consent and Round 1 questionnaire. This Round 1 package was sent out to the panel members as e-mail attachments. The identities of the panel members were kept confidential throughout the study. In each round, the panelists were provided 10-day time for completing and returning the questionnaire. A reminder was sent to the non-respondent after 5 days and on the day of the deadline. Each round took approximately one month. The data from each round were analyzed before the subsequent round was conducted.

### **Data Analysis**

The data analysis was conducted immediately after each of the three rounds of the survey. Both quantitative and qualitative data analysis were employed. Quantitative data analysis was conducted in the form of statistical aggregation of group responses to each questionnaire item in term of percentages. Qualitative data analysis was conducted with the open-ended comments and suggestions.

### **Results**

Based on the data analysis of Round 1 survey, two key competencies were modified and one content domain was added. As a result, Round 2 survey was developed and comprised 5 aims, 16 key competencies, and 19 content domains. The data analysis of Round 2 survey suggested two key competencies to be merged leading to the revised list of 5 aims, 14 key competencies, and 15 content domains in Round 3 questionnaire.

In Round 3 survey, the participants were asked to identify their agreement with the classification of the 5 aims with the 14 key competencies and the 15 content domains identified and prioritized by the panel from the previous round. The data showed that 94% of the participants either agreed or strongly agreed with the proposed classification (see Table 2). In addition, 5 titles of aims and 1 title of content domain were modified on wording, and 2 key competencies and 1 content domain were added, and 3 content domains were deleted. The final list therefore consists of 5 aims, 14 key competencies, and 15 content domains to be proposed for the primary English teacher training programs at PTTCs in Cambodia (see Figure 2).

Table 2 shows the classification of the aims with key competencies and content domains while Figure 2 shows the final list of 5 aims, 14 key competencies, and 15 content domains.

Table 2

*Final Classification of Aims with Key Competencies and Content Domains*

Aims	Key Competencies	Content Domains
1. To develop English professional teaching skills and teaching methodology consisting of teaching techniques, methodologies and approaches.	<ul style="list-style-type: none"> <li>- Ability to produce effective instructional materials and learning resources.</li> <li>- Ability to cultivate knowledge regarding educational psychology, educational research, teaching-learning approaches and classroom management.</li> <li>- Ability to provide sufficient knowledge of subjects related to local syllabi and curriculum development.</li> <li>- Knowledge of planning, monitoring, assessing and reporting.</li> </ul>	<ul style="list-style-type: none"> <li>- Practicum</li> <li>- Educational Measurement and Evaluation</li> <li>- Instructional Material Development</li> <li>- Psychology for teachers</li> <li>- Theories, teaching techniques, methodologies, and approaches Educational Research Studies</li> <li>- Educational Innovation and Information Technology</li> <li>- Educational Leadership Management</li> </ul>
2. To enhance the ability to effectively deal with the diversity of student learning needs, students' different socio-economic backgrounds as well as student interests.	<ul style="list-style-type: none"> <li>- Being confident and understanding the work environment and teamwork, partnering community/society.</li> <li>- Talents in cultivating knowledge with subject mastery, initiative, critical thinking, creative teaching and future focus.</li> <li>- Ability to nurture the child and provide quality learning of the child.</li> </ul>	<ul style="list-style-type: none"> <li>- Practicum</li> <li>- Instructional Material Development</li> <li>- Theories, teaching techniques, methodologies, and approaches</li> </ul>
3. To provide integrated academic knowledge, a strong general educational foundation, multiple specializations, universally communicative languages, current ICT, and educational management.	<ul style="list-style-type: none"> <li>- Knowledge of Communicative skills.</li> <li>- Ability to nurture the child and provide quality learning of the child.</li> <li>- Talents in cultivating knowledge with subject mastery, initiative, critical thinking, creative teaching and future focus.</li> <li>- Knowledge of World knowledge and life-long learning skills.</li> </ul>	<ul style="list-style-type: none"> <li>- Language Skills</li> <li>- Literature</li> <li>- Culture</li> <li>- Linguistics</li> <li>- Educational Research Studies</li> <li>- Educational Innovation and Information Technology</li> <li>- Health Education</li> <li>- Khmer studies</li> </ul>



	<ul style="list-style-type: none"> <li>- Knowledge of how to cherish the national cultural heritage and ability to uphold the aspiration of the nation/national identity.</li> </ul>	<ul style="list-style-type: none"> <li>- Educational Leadership Management</li> </ul>
4. To promote the development of a professional conscience and integrity in which teachers will become ethical and enthusiastic in their professional careers.	<ul style="list-style-type: none"> <li>- Knowledge of how to develop personal and professional integrity.</li> <li>- Learning enthusiasm.</li> <li>- Loyalty to the profession.</li> <li>- Knowledge of resilience and adaptability.</li> </ul>	<ul style="list-style-type: none"> <li>- Practicum</li> <li>- Teacher Characteristics Development</li> <li>- Educational Leadership Management</li> </ul>
5. To promote high professional standards of behavior and maintain continuous professional development.	<ul style="list-style-type: none"> <li>- Learning enthusiasm.</li> <li>- Loyalty to the profession.</li> </ul>	<ul style="list-style-type: none"> <li>- Practicum</li> <li>- Teacher Characteristics Development</li> </ul>

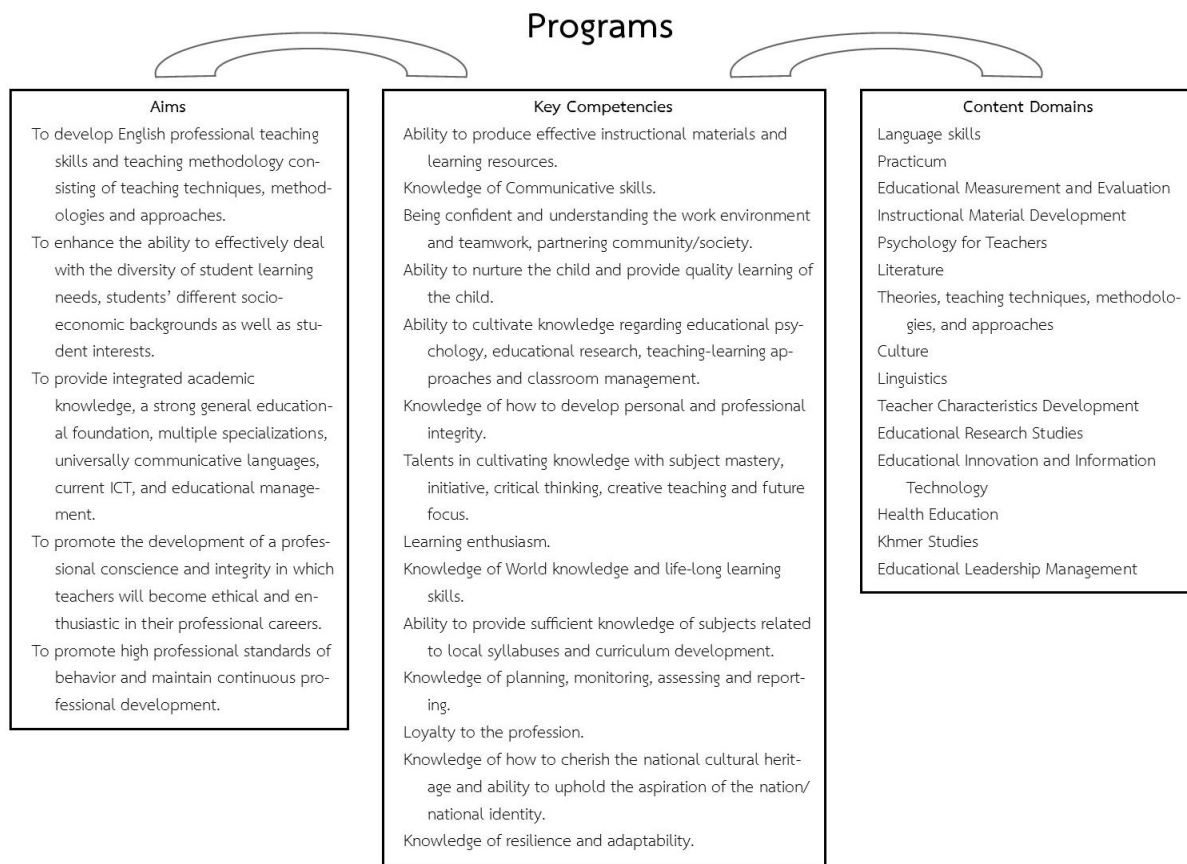


Figure 2. Proposed Aims, Key Competencies, and Content Domains for English Teacher Training Programs at PTTCs in Cambodia

## Discussion and Recommendations

The findings from this Delphi survey suggest 5 aims, 14 key competencies, and 15 content domains to be proposed as the guidelines for developing primary English teacher training programs at PTTCs in Cambodia. These findings are noteworthy since they are consistent with related literature in a number of aspects as follows.

First, the set of aims proposed by the panel reflects the structure of the two key strands of content in second language teacher education. Burns and Richards (2009) proposed that second language teacher education programs should equip the prospective teachers with knowledge about classroom teaching skills and pedagogical issue, and academic underpinning of classroom skills. In this study, the panel also agreed to include the aims that focus on professional teaching skills and teaching methodology as seen in the first aim and integrated academic knowledge in the third aim.

Second, the findings about the content domains were consistent with the TPACK framework. Based on the TPACK framework, Mishra and Koehler (2006) suggested that teacher education programs should include three integrated areas of content which are: content knowledge, pedagogical knowledge and technological knowledge. The panel in this study also agreed on the integration of three areas of content as shown in the list of the 15 content domains.

When comparing the proposed guidelines to the existing two-year lower secondary school English teacher training programs, the guidelines proposed in this study showed differences in all components: aims, key competencies and content domains.

For the aims, two aims namely to enhance the ability to deal with learners and to provide ICT skills and educational management, were suggested to be included as the aims of the future primary English teacher training program while the existing programs for secondary school English teachers do not address these abilities. The inclusion of the aim concerning the ability to deal with learners may be due to the fact that classrooms have become more diverse in terms of cultures, knowledge, and behaviors. Thus, the ability to deal with learners may be deemed important for teachers nowadays and was proposed to be an aim for the new teacher training program. This ability also receives similar attention in the teacher education programs in some other ASEAN countries including Singapore, the Philippines and Lao PDR. For the aim addressing the ability to use ICT, this finding supports the fact that ICT has become a part of life skills for people in this information and technology age. The ICT skills are also important for instructional activities. Teachers who possess ICT skills will be able to keep themselves up to date to the current world and conduct their teaching by using technology. Interestingly, in the findings, the experts did not rate the ICT skills as one of the key competencies, but they did rate ICT skills as one of the aims and content domains. As we are living in the technological era, experts may view that ICT skills are important. However, the limited resources regarding electricity and computers in Cambodian schools may be the major barriers in instilling this competence.

Regarding to the key competencies, the finding suggests including the ability to provide knowledge of subjects related to local syllabi and curriculum development, loyalty to the profession, knowledge of how to cherish national cultural heritage and ability to uphold the aspiration of nation/national identity. The findings on the ability to provide knowledge of subjects related to local syllabi and curriculum development were in line with the current situation of education in many countries, where there are core standards prescribed at the

national level and each school has to develop its own curriculum to suit its local contexts. Thus, it is necessary that teachers are able to develop their local curriculum. The proposal of the ability to develop local syllabi shows the shift of the reform of the curriculum policy and the decentralization of authority to grassroots level curriculum developers in Cambodia. Unlike in the past in which central curriculum was strictly used in all schools nationwide, the findings in this study confirms this new trend of localized curricula and the teachers' ability to design local curricula as the key competencies of the primary English teacher training program.

Regarding the content domains the finding suggests including the educational research study, literature, culture, and health education in the teacher training programs for English teachers. The finding was also in line with other developed countries that those contents are very important for primary teachers.

Over all, the new findings in this study suggest that the future primary English teacher training programs in Cambodia should include new aims, key competencies, and content domains that will equip the pre-service teachers with knowledge and skills necessary for future English teachers.

### **Recommendations**

The results of this study proposed guidelines for developing primary English teacher training programs at Provincial Teacher Training Colleges in Cambodia. These guidelines can aid curriculum developers in designing the programs effectively. The new programs should aim to produce pre-service primary English teachers who are able to implement English language teaching methodology; deal with diverse learners; integrate content knowledge, pedagogical knowledge, ICT, and educational management; develop own professional conscience and integrity; and continuously develop themselves professionally.

In implementing this new teacher training program, PTTCs may need to change some instructional strategies such as integrating the use of ICT in their programs to model how ICT can aid instruction as well as to enhance ICT skills for the pre-service teachers, implementing curriculum design tasks to enhance the knowledge and skills of how to develop a local curriculum that suits with the context of the school and community, exposing the pre-service teachers with direct classroom experiences to promote the understanding of the learners and classroom so that the pre-service teachers will be able to design instruction and manage the classroom effectively, and last but not least, promoting the love for learning in the pre-service teachers in order to enhance their continuous professional development.

### **Limitations of the Study**

Like any research study, this study has some limitations. Firstly, the limitations come from the use of the Delphi method. The purposeful sampling strategy and limited number of participants restricted the possibility of conducting inferential statistical analysis.

Secondly, in this Delphi study which consisted of three rounds, the initial list of aims, key competencies and content domains included in Round 1 questionnaire were generated from the literature. Instead of expressing their ideas freely, the listed items may bias some experts' thought process.

Finally, since the participants had different disciplinary backgrounds, their interpretation and understanding of the aims, key competencies, and content domains may not be consistent. The background of the two groups of participants, English curriculum developers and teacher trainers with their diverse perspectives may have affected the content validity of the findings in this study.

### **Implications for Future Research**

This study has several suggestions for future research. First, in terms of the study design, Delphi method was found to be highly appropriate for the exploratory nature of this study where the experts were geographically dispersed and no research was available on the topic of investigation. Future studies for program or curriculum development are encouraged to use the Delphi method. Second, this study used Microsoft Excel to conduct the survey, which had its benefits and limitations. The benefits included the ability to add open-ended comments for each item and also include participants' individual responses along with the statistical summary of the group responses in Round 2 survey. In addition, in the context of Cambodia where Internet may not be easily accessed in all areas, Microsoft Excel served the purpose of the study very well. However, the limitation of using Microsoft Excel was time consuming for organizing multiple files for each participant over the three rounds and data compilation. Future studies may develop web-based survey instruments to specifically meet the needs of the Delphi method.

## References

- ASEAN. (2008). *The ASEAN charter*. Jakarta, Indonesia: ASEAN Secretariat.
- Burns, A., & Richards, J. C. (Eds.). (2009). *The Cambridge guide to second language teacher education*. New York, NY: Cambridge University Press.
- Clark, T. G. (2005). *Defining a competency framework to shape the professional education of national security master strategists: A web-based Delphi study*. (Doctoral dissertation, Texas A&M University, 2005). Retrieved January 21, 2013, from <http://handle.tamu.edu/1969.1/3249>
- Franklin, K. K., & Hart, J. K. (2007). Idea Generation and Exploration: Benefits and Limitations of the Policy Delphi Research Method. *Innovative Higher Education*, 31(4), 237-246.
- Freeman, D. (2001). Teacher learning and student learning in TESOL. *TESOL Quarterly*, 35, 608–609.
- Kim, Y. (2011). *Developing a model of effective English teaching for pre-service teacher education*. Retrieved July 5, 2012, from <http://www.ed.psu.edu/educ/faculty-cvs/yzk1.pdf>
- Mishra, P., & Koehler, M. J. (2006). Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge. *Teachers College Record*, 108(6), 1017–1054.
- Ministry of Education, Youth and Sport. (2010). *Policy on research development in the education sector*. Phnom Penh, Cambodia: Author.
- Murry, J. W., & Hammons, J. O. (1995). Delphi: A Versatile Methodology for Conducting Qualitative Research. *The Review of Higher Education*, 18(4), 423- 436.
- Sinlarat, P. (2003). Message from the Dean. In P. Sinlarat, C. Lertchalolarn, & C. Kavin (Eds.). *Thoughts on reforming teacher education in Thailand*. Bangkok, Thailand: Chulalongkorn University Printing House.
- Stewart, J. (2001). Is the Delphi Technique a Qualitative Method? *Medical Education*, 35, 922-923.