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Blended Learning Approach of the Flipped Model for Partograph Short Course

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Abstract

Crucial demand of professional and well-trained midwives, midwifery lecturers, general practitioner, and Obstetrics and Gynaecology in Indonesia could be fulfilled by providing effective learning process to them. Udayana University through its Distance Learning Centre has offered Partograph short course in order to respond the demand. The short course has implemented blended learning approach of the flipped classroom with international collaboration. The course was joint by participants from 11 countries through video conference. The course was well designed, conducted follow Global Development Learning Network standard, and then it was evaluated. The course yielded high impact to the participants which could be seen from the participants' feedback. They testified that the course was marvellous, effective and informative. Finally the evaluation results showed that all components of the learning process have significant result to the overall learning quality which was shown by their correlation coefficients.

Keywords: *Blended learning, flipped class-room, Partograph short-course*

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Introduction

Globally according to Save the Children report (BBC, 2015) that almost 1 million babies have died before their ages reach one day. Number of death babies in year 2013 in Indonesia was still high around 228 of 100,000 babies. The rate was below than in year 1994 of around 390 babies per 100,000 infants. One factor reduction of the mortality rate was an increase of skilled midwives number in Indonesia to be 73% in year 2013. Other factor was a government program to place well-trained midwives in all villages in Indonesia. Moreover number of well-trained health practitioners increased from 32% in year 1991 to be 83% in year 2013 (Humas, 2015).

According to UNICEF Director in Indonesia (Humas, 2015), number of newborn mortality was 29 per 1000 newborns in year 2013 which was compared to year 1990 that achieved 84 death of baby birth per 1000 life newborn. In addition there were more than 10,000 women died during their labor process. Therefore the WHO Midwifery Educator Core Competencies program (WHO, 2013) was developed to have more competent midwifery educators who could prepare fully qualified midwives to provide good quality health services for all women, especially childbearing women and their infants. The program offered some topics to be implemented. One of the topics was proper utilization of Partograph.

No doubt that technology especially ICT has a significant role in today education system. The advancing technology makes blended learning integrated with flipped classroom model possible. Both blended learning and flipped model aim to encourage students' participation actively and to increase their interaction, creativity, and innovation to a higher level (Hoic - Bozic, 2009), (Bart Marty, 2014), (Center for Digital Education, 2012) in an online environment. As the need of competent midwives or health practitioner increases, Udayana University utilizing its GDLN (Global Development Learning Network) facility has conducted short-course of Partograph for midwives, midwifery lecturers, and OBGYN from health institutions around Denpasar, and Badung, Bali. The course utilized blended learning approach of flipped classroom model. One of important objectives is to train the participants with the WHO standard of Partograph. All learning activities were then evaluated by analyzing feedback results from the participants. Therefore the paper examines the whole learning implementations. The purpose is to know the level of participant's satisfaction to the short-course which applied blended learning approach of the flipped classroom method.

Blended Learning and Flipped Classroom Model

ICT has developed rapidly and changed people life style. It has changed learning method and learning style from traditional way to be technology based learning. Distance learning in combination with face-to-face and LMS (Learning Management System), or video conference and LMS, has been popular to implement in education institutions. That learning method is called blended learning (Hoic - Bozic, 2009), (Bart Marty, 2014), (Na Zhu, 2016). The blended learning can significantly change the relationships which have traditionally existed between teacher, learner, and learning resources. Therefore the learning method should not only focus on the technology itself, but also on the pedagogy and instructional system designs that aim to deliver education to students who are not physically "on site" in a traditional classroom. Other method that uses technology for learning is flipped classroom. The flipped classroom is focused on pedagogical model (Center for Digital Education, 2012), which learning material is explored outside of class by students. Typically the substance is in the form of video-based-lectures. Then teachers or lecturers employ the class time to interact with the students in activities such as discussion and Q&A session. Generally today class put material on line which is easily accessed by the students. Thus ICT plays important role in the flipped classroom. The study of Sahin (2011), revealed the opinions of trainers of Higher School of Vocational Education and Training on blended learning model. Focus group interview was selected to have the opinions which were grouped such as under students' positive response, financial and pedagogical aspects, flexibility, collaborative learning, and lifelong learning model. Ideal blended learning implementation took high cost in the beginning. Therefore the model was suggested to run as a lifelong learning model. In general, the model depends on the blended learning design approach. Three distinct blended learning design approaches were explained in Alammary (2014), i.e. low-impact blend approach, medium-impact blend approach, and high-impact blend approach. The approaches classification according to prospective deviations to the on-hand teaching and student understanding. When extra activities are added to an existing course, then it is called low-impact blend. Medium-impact blend is when a teacher replaces activities in an existing course, and high-impact blend is when a teacher builds the blended course from scratch. Thus the impact level is mainly determined by the teachers' experiences. Three types of experiences significantly contribute to the approach, i.e. their experiences in running a blended learning course, their experiences in teaching traditional courses, and their experiences in utilizing

integrated technology in teaching. Finally the last factor in determining the impact level is high institutional support.

Definitions of blended learning and flipped learning model could be found in (Bart Marty, 2014). The study stressed that flipping is more than watching lectures video. A flipped classroom permits teachers to employ new technique or method in learning process. It shifts from teacher-centered learning to student – centered learning, and from individual to collaborative learning. In addition the utilization of extra activities such as quizzes and tutorial assignment are included in the flipped learning model for both individual and collaborative learning. The fundamental concept is to accomplish the activities in the class. Further studies on implementation of the flipped classroom are provided by Chen L. (2015), Er, E. (2015), Howitt, C. (2015), Kvashnina O.S. (2016), and Li Y. (2015). The flipped classroom is utilizing by providing text-based lecture notes, pre-recorded multimedia micro-lectures (four to five micro-lectures of 15 to 20 minutes), e-learning system as an online resource for students, and an individual assessment test for each class (Chen L., 2015) in order to systematically identify students' perspective of using cooperative learning in a flipped statistics classroom by utilising Q-methodology. The flipped classroom was applied in postgraduate education using case studies that was written as chronological stories from email correspondence between the two lecturers as critical friends, as well as from student feedback in the form of face-to-face discussions, online discussions, emails, mind maps, multimodal discussion boards and end-of-semester university surveys (Howitt, C. 2015).

In addition, the study on behaviour of college students' online help-seeking in a flipped classroom with a web-based help-seeking tool is conducted by Er, E. (2015). The web-based help-seeking tool was developed to enable students to ask questions about the course content and receive the needed help while studying the lecture themselves outside the classroom. Then an integration of MOOC content and flipped classroom practice was applied in undergraduate course named "Internet and Distance Education", and to see its effectiveness through students' experience and perceptions (Li, Y. 2015). Finally Kvashnina, O.S. (2016) describes significant benefits of the flipped classroom in ESL (English as a Second Language) teaching including an increase in students' overall performance on the course, enhancement of students' motivation and improvement of their autonomous learning skills.

As Internet becomes society basic need, then students are already comfortable with Internet, e-books, e-content, and social media as their life style. Therefore the students have been applied active learning which is recognized as flipped learning technique (Centre for Digital Education, 2012). The students are used to watch online lecture, courseware, language translation, social network, content access, webcast style before entering the classroom. On the other hand, in higher education environment, tough economy is a factor that pushing the education toward blended learning and flipped classroom model. Thus blended learning approach of the flipped classroom is suggested to apply for higher education to fulfil both individual and organization target.

The Partograph Short Course

Udayana University was interested to conduct Partograph short course which was offered by Tokyo Development Learning Center in collaboration with the WHO, and Kitasato University for the following reasons. Firstly, there is a curriculum problem among health education with the Partograph learning. Then there are many versions of the Partograph which are used in Indonesia. Thirdly, there is limited portion of the Partograph theory and laboratories practices in schools/university curriculum causing lack of understanding in using, reading, or interpreting the Partograph data. Finally there is low compliance of the Partograph usage in hospitals in Indonesia. Therefore the short course has significant objective, i.e. to gain participant skill and knowledge in using the Partograph with the WHO standard. Target participants of the course are midwives, midwifery lecturers, general practitioner, and OBGYN from health institutions around Denpasar, and Badung, Bali.

The Partograph itself is defined as a graphic tool used to assess the progress of labor and identify when an intervention is necessary. It is used to record information on mother's conditions as her labor progresses. Thus the graph is widely used to assist midwives in deciding accurate actions or steps for prolonged labor or obstructed labor.

Method

In this study, effectiveness of delivering a short course using blended learning approach of the flipped model was examined. The topic of the short course was Partograph usage for helping pregnant woman during her delivery process. One of important objectives is to train the participants with the WHO standard of Partograph. Totally three short courses were examined which each short course was run for 2 weeks per year. Target of participants was midwives, midwifery lecturers, and ObGyn from health institutions around Denpasar, and Badung, Bali. They joined the course by invitation. The

invitation letters were sent to all hospitals, faculty of medicine, local government health care centres in two regencies, i.e. Badung Regency and Denpasar City. Average of number of participants joined the course was 30 persons. Therefore most participants were health care professionals, such as midwives, midwifery lecturers, and Obstetrics and Gynaecology (ObGyn). All learning activities were then evaluated by analysing feedback results from the participants. The feedback is a questionnaire with 11 closed – questions and 3 open – questions. The questionnaire has three parts. The first part is about relevancy of the course, then followed by quality and usefulness of the course design and delivery. The last part is about participant recommendation for the course improvement.

There were three face-to-face sessions. The two sessions were in the class to explain a whole course design and delivery, and to watch and discuss a pre-recorded video. The video itself contains an explanation of Partograph e-learning tool. The two sessions were conducted in one week. Then the last session of face-to-face was conducted through video conference media which was joined by participants from 11 countries. At the end of this session, the participants had to fill in the questionnaire. The same questionnaire was fulfilled by all participants from 11 countries. However this study was limited to analyse the feedback from participants in Udayana University.

The learning method was chosen to deliver the short course was actually blended learning approach of the flipped technique. Components of the Partograph blended learning approach of the flipped model are below.

1. Face to face class was implemented for participants' discussion, and it was conducted twice in one week.
2. Pre-recorded video in DVD with duration of 1 hour which was to introduce and explain about basics of the concerned eLearning tool and Partograph, was played in the first face-to-face session in the class.
3. The CDROM tool kit was distributed to all participants for their self-learning for one or two weeks. The participants would study at home/office during 1-week or 2-weeks time with provided CDROM.
4. The participants would have certificates which were issued automatically from the CDROM when the participants successfully answered the self-study in the CDROM. CDROM itself is in English, and according to the subject-matter experts, it is not difficult to study. If study intensively, participants can finish it within a day. Features of CD ROM e-learning Tool Kit are interactive images as well as audio guides and instructional videos designed to convey the learning material to participants on the step-by-step procedures on using the WHO Partograph; slides by the WHO expert; room to exercise: participants can practice using multiple case scenarios; post-test to prove retention of information from the self-learning, and the WHO certificate. Figure 1 shows home display of the CDROM.

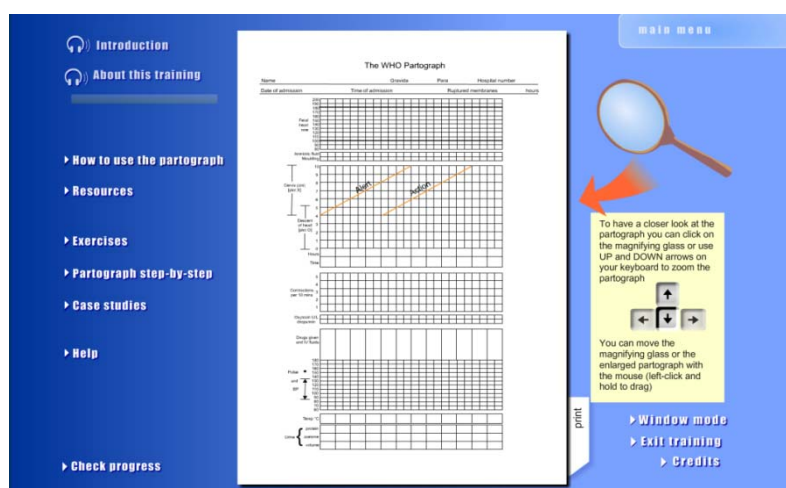


Figure 1. CD ROM e-learning tool kit

5. Next one or two weeks later, the second face to face session with the WHO expert and discussion among other participants from several countries through video-conference. The session had Q&A, case-sharing, deeply discussion on understanding of Partograph, and wrap up course. The session

was 3-hours video - conference session. Running order of video – conference session is shown in Table 1.

6. Then the course was evaluated by analyzing questionnaires results.
7. Finally, the WHO, Kitasato University, Tokyo DLC and Udayana University issued a completion certificate to those who join all sessions. Figure 2 shows the program flow.

Table 1. Video Conference Running Order for the second f2f session

Partograph Elearning Course
Time (24-Hour format)
Participating sites: Geneva/Tokyo/Ghana/Jordan/Tanzania/Madagaskar/India/Sri Lanka/Indonesia (Bali)/Manila/Mongolia
Delivery language: English

Time (Geneva)	Time (Tokyo)	Time (Ghana)	Time (Jordan Tanzania Madagaskar)	Time (India Sri Lanka)	Time (Denpasar Manila Mongolia)	Length	Speakers name	Action/ Event/ Topics
8:00	3:00	6:00	9:00	11:30	14:00	1:00		Connection Testing
9:00	16:00	7:00	10:00	12:30	15:00			Video Conference Session begins at 16:00 (Tokyo Time)
9:00	16:00	7:00	10:00	12:30	15:00	0:03	MC	Course opening and introduction of connected site
9:03	16:03	7:03	10:03	12:33	15:03	0:04	Director or Mother/ Child	Opening remark WHO
9:07	16:07	7:07	10:07	12:37	15:07	0:04	TM	Opening remark TDLC
9:11	16:11	7:11	10:11	12:41	15:11	1:45	Moderated by the WHO expert	Q&A and discussion session with all participants
10:56	17:56	8:56	11:56	14:26	16:56	0:03	MT	Closing remark by Kitasato University
10:59	17:59	8:59	11:59	14:29	16:59		MC	Close the seminar
10:59	17:59	8:59	11:59	14:29	16:59			Session will be closed at 18:00 (Tokyo Time)

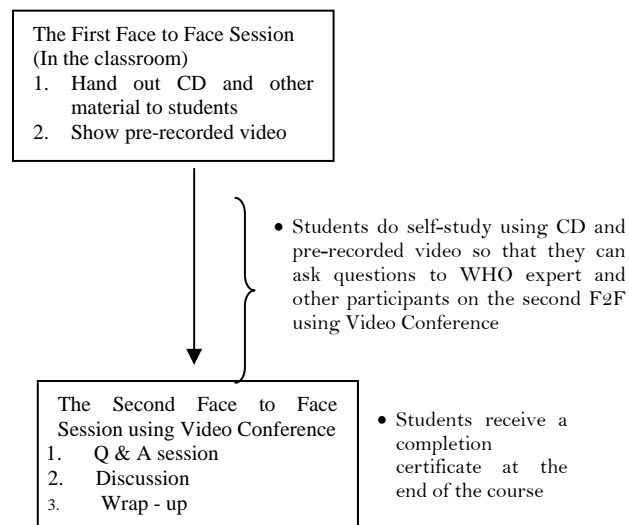


Figure 2. Program Flow of the Course

All data from all participants' feedback who attended three short courses were collected and evaluated both quantitatively and qualitatively.

Results and Discussions

For three years the short course was participated by health care professionals such as obstetrician/gynaecologist, midwife, medicine faculty lecturers, general practitioners, and government staffs. The course was demonstrated implementing blended learning approach of the flipped classroom

for the following reasons. At first, the participants were equipped with the CD-ROM for a week or two weeks self-learning and self-evaluation. Thus they can participate actively in the second face-to-face classroom using video conference facility. Then the pre-recorded video of the tutor which was stored in DVD, was also distributed to them on the first week.

According to (Alammary, 2014) this course was eligible to categorize as high – impact blended learning design approach. The course was designed by experts from the WHO and Kitasato University for academic contents, from GDLN of Tokyo and Udayana University for technology side, and was supported institutionally by GDLN Asia Pacific, Tokyo DLC, the WHO, Kitasato University, and Udayana University. The impact was evaluated using the questionnaire at the end of the course. The evaluation form was composed of 11 closed questions and open questions for additional comments. Table 2 shows summary of the evaluation and Table 3 presents participants comments. Finally Figure 3 to Figure 6 present the result of the closed questions questionnaire. From the evaluation results, it was indicated that most of the participants especially obstetrician/gynaecologist and midwife, had experiences with Partograph. They had clinical experiences from 0.5 year up to 14 years.

Table 2. Evaluation Results

No	Description	Score (%) From 1 (Bad) to 5 (Excellent)				
		1	2	3	4	5
1	This learning course as a whole was	0	0	27.78	22.22	44.44
2	Relevance of the activity to your current and future work	0	0	11.11	38.89	50.00
3	Relevance of the activity to your organization's need	0	0	16.67	22.22	61.11
4	Relevance of the activity to your country's needs	0	0	27.78	33.33	38.89
Design and Delivery of the activity						
5	Clarity of the course objective	0	0	44.44	33.33	16.67
6	Usefulness of the event format in maintaining your interest	0	0	11.11	72.22	11.11
7	Usefulness of the presentation video before starting self-study CDROM	0	0	16.67	44.44	33.33
8	Usefulness of the self-study CDROM	0	0	22.22	50.00	27.78
9	Usefulness of Q&A session on VC	0	0	33.33	16.67	16.67
10	Effectiveness of this way learning	0	0	33.33	38.89	22.22
11	Effectiveness to upgrade your professional skills & to advance your professional career	0	0	11.11	44.44	38.89

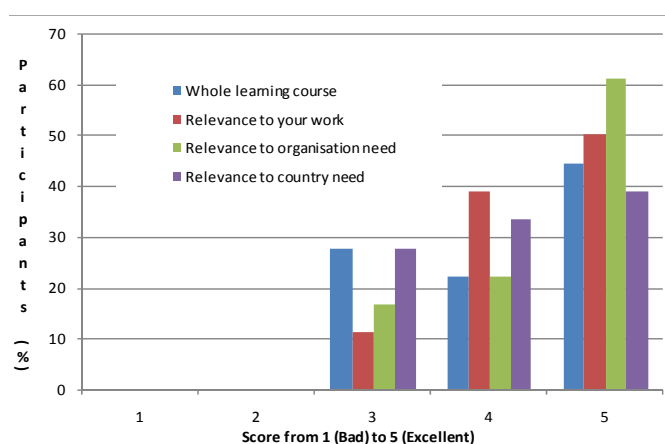


Figure 3. Comparison of relevance of the course to overall learning course

Table 2 shows that most participants agreed that the learning course was excellent as the course was relevant to their activities and their organization need. However design and delivery of the course needs improvement on course objective, Q&A sessions using video conference, and its effectiveness. Additionally, Figure 4 shows that there are increase trend for number of participant who agree that the topic and content of the course are relevant to their work, their organization need, and their country need. Moreover, increase trend for positive result to the overall course is shown. More than 50% of participants were satisfied with the content of the course, as most of them gave score 4 and 5. Furthermore almost 45% participants put excellent score for the course and more than 67% of

participants gave very good score (score 4 and score 5). Subsequently, Figure 4 proves that most participants which is more than 70% (score 4 and 5) were satisfied with learning materials such as pre-recorded video and the CD-ROM. However around 34% of participants gave average score (score 3) for face to face session using video conference facility. This result occurred as time limitation of the session, since many participants from 11 countries joined the session. The session was conducted in each video conference studio room which was provided by the GDLN. The connecting host was the Tokyo DLC that was connecting 11 studio rooms from 11 countries. As a result each site was restricted to ask maximum two questions. Furthermore Figure 5 presents that more than 60% of participants confirmed the effectiveness of the learning method and believe that the course will improve their professional skill and career.

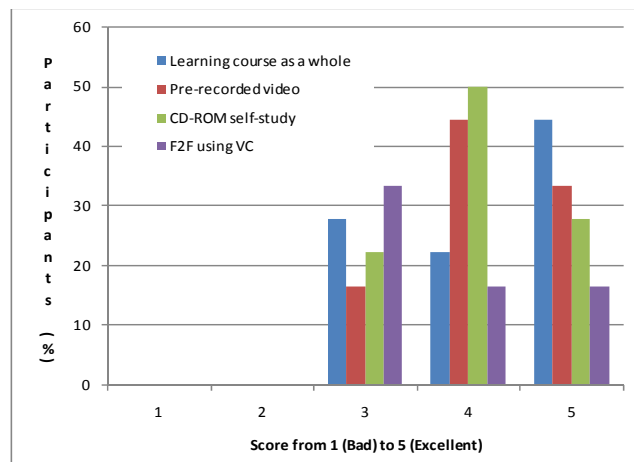


Figure 4. Comparison of learning components to overall learning course

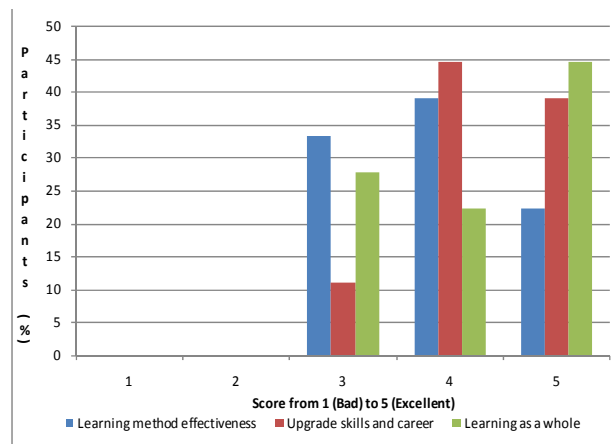
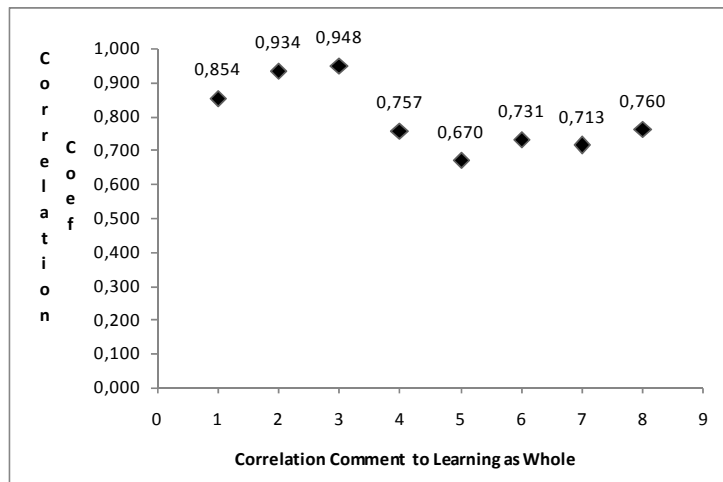


Figure 5. Comparison of learning effectiveness to overall learning course

Figure 6 explains which factors and components of the course has strong impact to overall learning quality, since more than 67% of participants appreciated the course very good and excellent. In general all important components of the course have positive correlation to the learning quality. All correlation coefficients are bigger than 0.7. Relevance of the course has the highest correlation coefficient that is more than 0.85. This means that topic and content of the course are suitable to the participants' need. Other components have correlation coefficient more than 0.72 except self-study CD ROM component. Surprisingly the CD ROM component has the lowest coefficient of 0.67 compared to the video conference session.



Note for horizontal axis:

- 1 Correlation between 'Relevance of the activity to work' to 'Overall Learning'.
- 2 Correlation between 'Relevance of the activity to organization's need' to 'Overall Learning'.
- 3 Correlation between 'Relevance of the activity to country's needs' to 'Overall Learning'.
- 4 Correlation between 'Usefulness of the pre-recorded video' to 'Overall Learning'.
- 5 Correlation between 'Usefulness of the self-study CDROM' to 'Overall Learning'.
- 6 Correlation between 'Usefulness of f2f session using Video Conference' to 'Overall Learning'.
- 7 Correlation between 'Effectiveness of the learning method' to 'Overall Learning'.
- 8 Correlation between 'Effectiveness to upgrade skills & career' to 'Overall Learning'.

Figure 6. Correlation between specific comments of participants to overall learning course

The course has brought good impact to the participants, as it was confirmed by comments from participants in Table 3. The comments strongly verified that the course design and its delivery were effective. Therefore the participants willing to share and promote the course to their colleagues. In addition, Table 3 proves that the course with the learning method is interesting as the course helped the participants to understand the Partograph easily. Finally they expect the same course and other courses with the same learning method.

In summary the learning method that was well designed and well implemented has high-impact on the participants. They were really enthusiastic to propose next course for the same topic and other topics using the same learning method. Although the course is categorized as a short course and involved high technology, all steps starting from course design until course evaluation has to be well planned and well prepared. Finally, video conference session has been qualified to be applied as face-to-face session, since the participants have good understanding of the course content after they did self-learning and self-evaluation for maximum two weeks using the CD and pre-recorded video.

Table 3. Summary of Participants Feedbacks

<p>What are your plans for putting what you gained from this course into your future work and practice?</p> <ol style="list-style-type: none"> 1. To share the knowledge to our colleagues in the workplace. We have used Partograph at work, so the information is not a new one but it is refreshed our knowledge. 2. Share to other lectures & clinical instructors.
<p>Additional comments that will assist us in making future courses more effective?</p> <ol style="list-style-type: none"> 1. I think everything very good. I would say thank you to the host especially for the team because the job is very good. 2. Good, because we get certificates from the WHO. 3. I think this course is very interesting for me or my job, with a CD I can learn Partograph easier. I hope the course will continue next year. 4. Good for my knowledge.
<p>Participants expect following topics for next course:</p> <ol style="list-style-type: none"> 1. Management of hemorrhage post partum, Early breastfeeding, Delayed umbilical cord clamping, Neonatal resuscitation, Dystopia of power, Neonatal asphyxia, Hypnobirthing, Water birth, Active management of the third stage of labor

Conclusions and Lesson Learned

Overall the Partograph blended learning approach of the flipped short course is satisfying participants. Most participants, more than 44% approved that overall programs were excellent, and more than 67% agreed that the course was very good. In addition they agreed that the course was effective and informative. The approval was more depend on its relevance to their needs and organization' need; and other components of the course such as pre-recorded video, self-study CDROM, and face-to-face session using video conference. Thus the course gives excellent impact to the participants. They agreed that the course would upgrade their professional skills and advance their professional career. However Q&A session using video conference needs improvement as around 30% of participants put average rating on this session. In conclusion the learning method effectiveness was notably affected by overall program, starting from good learning design up to learning implementation.

The outcomes or lesson learned from the course should be noticed to keep implemented in the future. The first notice is that participants have international experience in learning Partograph. They were able to do sharing and discussion with the WHO expert in Geneva and with international participants from 11 countries. In fact, they enjoyed the learning process that was utilized integrated technology. Then academic content is easy to comprehend because of multimedia facilities in the CD, slides, and pre-recorded video. Therefore the learning method is suitable for busy people and makes the participants could do self-study comprehensively. This learning method has no time boundaries and no place boundaries for international learning in effective way. Next best practice is that participants are eager to share their local experience to the international counterparts, and catch the global solution and implement it in their workplace. Finally the learning process can enhance the participants' skill, knowledge, and professionalism. Therefore the course would enhance the participants' careers.

This research was limited since it was conducted for short course with health care professionals who are often more motivated and committed than undergraduate students. Moreover most of the professionals' participants already have had the course knowledge. Therefore further study should be conducted especially for undergraduate students who learn the course for the first time, in larger classes, and for multi – discipline of education.

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