CHAPTER 6

DISCUSSION

The Thai government has supported Internet use. It has provided the Internet to schools and communities throughout Thailand. It has also encouraged the private sector to provide the Internet at a low cost. Its vision relates to creating a knowledge-based society and economy (KBS and KBE). With KBS and KBE, people can use the Internet for learning. This leads to develop knowledge workers in Thailand.

With the support of the Thai government, Internet users in Thailand increased from 11.9 percent in 2004 to 22.4 percent in 2010 (NSO, 2008: 8). Especially, Thai adolescents have showed the highest rate of the Internet users. They have opportunities to use the Internet at school, in their houses and at Internet cafes. This delivers results in multiple sources for adolescents' learning.

Thai high school students can use the Internet in their leisure time for development and maladaptive pathways. They can develop their intellect by learning from the Internet. They use communication applications to develop their social skills. Furthermore, they can learn about their physical development. However, adolescents are immature and may have maladaptive behavior. They may use the Internet in inappropriate ways. For example, they used the Internet for a long time to fulfill their desire for entertainment. As well, they may use the Internet to contact strangers.

To encourage high school students' Internet use for learning in their leisure time, SDL is focused. SDL is learning skills that leads to lifelong learning and influences non-routine learning (Timothy et al., 2010). In fact, SDL involves learning to learn (Bolhuis and Voeten 2001), freedom, responsibility, and personal views to learn (Sofie et al., 2008). Students with SDL can acquire, create, and share about their learning.

6.1 Teachers' learning system to improve students' SDL for Internet use

To improve high school students' SDL for Internet use, teachers play a key role (Bolhuis and Voeten, 2001). Teachers influence students' learning. Therefore, they have to learn to improve students' SDL for Internet use. This is consistent with a study of Lin and Tsai (2002) who proposed that teachers influence students' Internet use. Moreover, Bolhuis and Voeten (2001) mentioned that teachers should take a new role to teach students how to learn. This can cultivate students' SDL skills.

The Thai government focuses on integrating ICT into school practice. Teachers have to adapt themselves to follow the Thai government policies about ICT for education. Teachers have to practice to improve students' SDL for Internet use according to a Thai curriculum and educational policies. First of all, they follow the core curriculum for the Thai basic education. It promotes lifelong learning and using IT for learning. Additionally, they have to meet standards of the internal quality assurance. They need to conduct activities or learning arrangements to develop their students' ability to use ICT for learning. These practices are outlined in Figure 6.1.

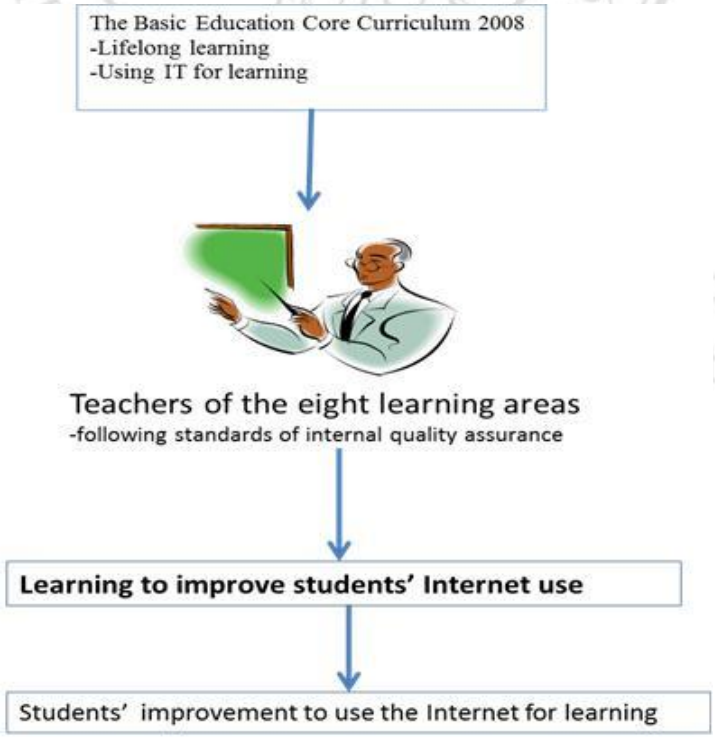

Figure 6.1 Teachers' practice to improve students' Internet use

Teachers can improve students' SDL for Internet use by following the steps shown in 4.3. This relates to teachers' regular work as the in a quality activity of QAD. It concern with continuous improvement. Teachers can follow PDCA as an experiential learning. They should plan an activity that lead to improve students' SDL for Internet use. They should also set time frame for their students. In terms of self-directed learning, teachers can act as facilitators to guide students and observe students. Then, they can assess their students about SDL for Internet use and evaluate the activity. This delivers suggestion for improving the activity.

In term of learning in action (Garvin, 2000), there are three steps comprising of acquiring, interpreting and applying information. First, acquiring information refers to finding relevant information for organizational development. Second, interpreting information involves using the processed information within a larger context, to make it useful for an organization. Lastly, the applying information relates to turn information to concrete behavior and adopt new behavior.

Teachers as knowledge workers can apply the steps of learning in action to develop students. Figure 6.2 applies the steps of learning in action as a continuous process. The first step of learning is acquiring data. It leads to finding the relevant data of students that the teachers require for development. The interpreting information delivers processed information within a school context, to make it useful for teachers. Last, applying knowledge involves turning information to conduct a research for improving students. Then, the knowledge will deliver a framework to collect data of students. Therefore, teachers can adopt it to analyze and apply for a research.

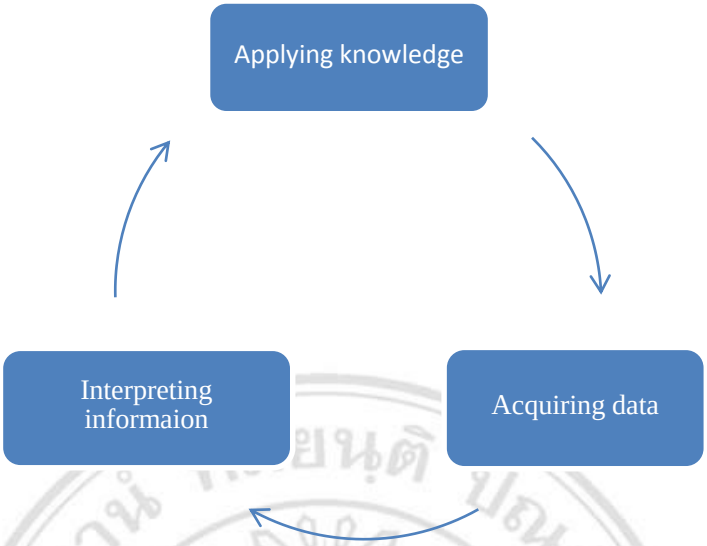

Figure 6.2 A learning system to improve students

Figure 6.2 begins with acquiring data. Teachers should have a good relationship with students, guardians, and communities. It is about data collection of students' SDL and their activities in leisure time. Then, teachers analyze students based on the data by classifying students' degree of self-direction and spending their leisure time. This involves interpreting information. Later, teachers conduct research to improving students' SDL for Internet use as applying knowledge. This process is continuous or consistency of operation. After teachers finished conducting the research they can assess the results by finding data of the students.

Teachers can conduct the learning system as shown in Figure 6.2 to reduce their workload of the internal quality assurance. The learning system includes gathering data, analyzing data, and applying them to develop their students as consistency of operation. Teachers can analyze data into information and use the information to conduct research. Before this project, teachers separated their work as silos' thinking. They followed standards of the internal quality assurance by conducting an analysis of students, and then they didn't use the information to conduct research to improve their students.

Figure 6.2 also refer to learning from experiences (Garvin, 2000). Learning from experiences leads teachers to learn from their past practices with a continuous process. Teachers as knowledge workers have to improve their practices that affect their student

improvement. They can adopt repetition and exposure. Repetition implies that teachers do the same task over time. When teachers finish applying information, they can continue to acquire data, and then interpret information. This leads to newly applying information. These practices have to get better than the past. In term of exposure, teachers receive a new set of talents or skills that are added through their practices.

Teachers can develop their new practices by adopting reflection and review (Garvin, 2000). The reflection and review means getting detail of past practices for designing future practices. It provides a better practical guideline in the future. A review of each teacher delivers refinement of future practice. It includes tricks of best practitioners. After applying knowledge, teachers can do reflection and review. Then, they can do a better project for student improvement. Teachers can improve their acquiring data, interpreting information and applying knowledge.

With a way of applying knowledge, teachers conduct research for student improvement. The research is regular work of teachers as a standard of the internal quality assurance. Teachers require a way of the research. This study proposed experiment (Garvin, 2000) to improve students. Teachers create a framework as a try-it-and-see and prove it.

To improve students, teachers can adopt the hypothesis-testing. The hypothesis-testing leads to find out new explanations and confirming prevailing views. Teachers can adopt it to test by proving relationship of variables as shown in Figure 6.3. The short film production that was designed following a process of SDL and sequencing planned e-learning interactions was an independent variable (x). The students' SDL improvement for Internet use was a dependent variable (y).

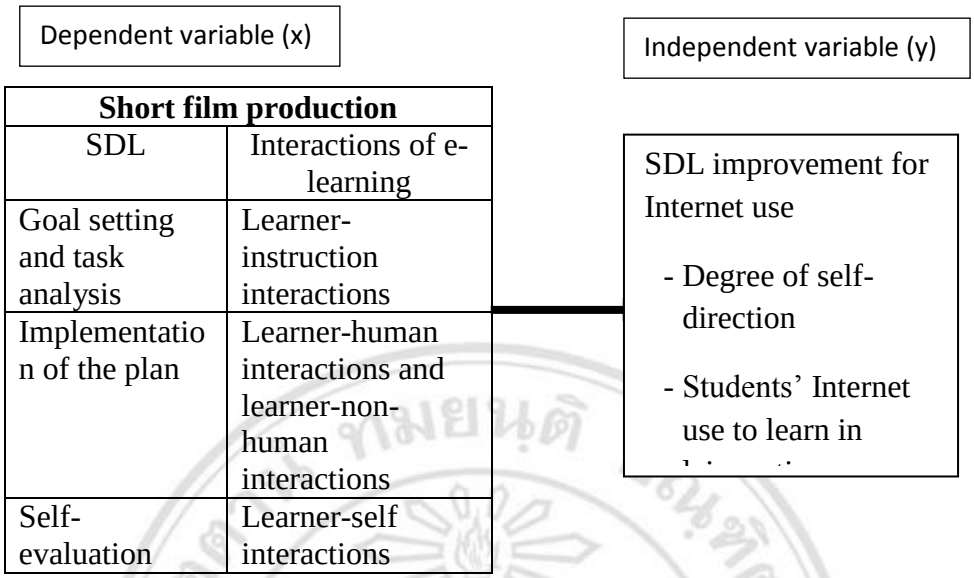

Figure 6.3 The hypothesis-testing to improve students' SDL for Internet use

The hypothesis-testing need clear purpose that presents a relationship of variables. Questions of research and measurements have to be framed. Research methodology is well discipline. The hypothesis-testing can lead to generating data, validating theories, and accepting new ideas.

6.2 An activity to improve students' SDL for Internet use

High school students have choices for doing activities in their leisure time. However, teachers can guide them to conduct activities that impact their learning. With the framework of the process of SDL (Timothy et al., 2010) and three levels of e-learning's interactions (Hirumi, 2000), teachers create an activity for improving students' SDL for Internet use to learn. This leads to the spending of useful time by the students. Moreover, it delivers an experience of Internet learning to students.

The short film production as a quality activity was designed by focusing on the process of SDL. SDL is an important skill for learning by using ICT in a knowledge-base society (Timothy et al., 2010). As a result, people with SDL can perform learning in their leisure time and solve complex problems by using ICT. Timothy and colleagues (2010) mentions three components of SDL. They comprise goal setting and task

analysis, implementation of the plan, and self-evaluation. They can be a framework of an activity to improve students' SDL.

To support students' Internet use to learn, the short film production was designed by integrating with interactions of e-learning. Hirumi (2002) proposed three levels of e-learning interactions that relate to students' Internet use for learning. They include learner-instruction interactions, learner-human interactions and learner-non-human interactions, and learner-self interaction.

The components of SDL has three components that match with three levels of e-learning interactions. As depicted in Table 2.5, the goal setting and task analysis are the same as learner-instruction interactions. The implementation of the plan is similar to the learner-human interactions and learner-non-human interactions. The self-evaluation is the same level with the learner-self interactions. These matching are the famework of an activity to improve students' SDL for Internet use.

With this project, the short film production had the greatest impact on students' Internet activities in their leisure time. There was no book about making a short film in the school and buying a book could take a long period of time. Therefore, the Internet seems to be only source for students. Moreover, content of a learning area can be easily found on the Internet. Therefore, in leisure time, a number of participating students who used the Internet in an appropriate way was increasing, but in an inappropriate way was decreasing, as shown in Figure 5.6. As well as, the next section will be more detail about spending leisure time for Internet learning of participating students.

6.3 Students' SDL improvement for Internet use

High school students will be college students and workers in orgainzations. They will take particpation to develop organizations and countries. Therefore, they should be cultivated SDL skills to be knowledge workers in the future. In higher education, students with SDL skills can succed learning (Fellows et al., 2002). They can take autonomous learning in courses like learning via the Internet in their leisure time. This leads to survive and receive good study performance in higher eduction. Additionally,

workers who have SDL skills can learn to develop their organizations. They can create competitive advantages to their organization (Ellinger, 2004).

This project tried to improve high school students' SDL for Internet use. It followed Timothy and colleagues (2010) who suggested that building students' SDL can support ICT use for learning. This relates to students' Internet learning as in classroom practice and their leisure time. Students can use the Internet to learn in a subject matter of a learning area, to learn about things they like, and to solve their problems in daily life. As a result, this project supports human development by focusing on Interenet use for learning that involve lifelong learning and a knowledge-based society (Timothy et al., 2010; Desai, 2002).

With this project, high school students as adolescents who are in a significane period of development and most of Internet users in Thailand (NSO, 2010: 8) were focused to improve SDL for Internet use. They are developing their social skills, intellectual skills and body. The participating students joined the short film activiy that was designed to improve SDL skills for Internet use. As a result, students had an expericence of Internet learning by themselves. They also learned to use their leisure time for learning. This related to students' SDL improvement.

High school students can learn to make a short film that relate to a learning area in their school. They learn by following a process of SDL that integrates with the sequencing planned e-learning interactions as shown in Table 2.5. They begin with goal setting and task analysis that matches with learner-instruction interaction. Students can set a story that involves a learning area. They also plan to finish a short film and assign task for each group member. This step can be facilitated by a teacher who guides an instructional method. Later, students implement their plan. They interact with human and non-human resources. They contact other people like peers and teachers, and access online content for learning. Students can easily and conveniently access online learning resources. Next, students can do self-evaluation of their learning process as learner-self interactions. As a result, they can find their strenths and weakness for learning. This involves doing reflection and review that imply learning from thier expericence (Garvin, 2000).

After the participating students joined the short film production, most of the students involved adaptive direction by considering Internet activities in their leisure time. A study of Holmbeck and Kendall (2002) found that adaptive direction of adolescents can be built by an intervention that imply to a designed activity. Figure 5.6 shows a number of students did learning on the Internet, listening to music and/or watching movies on the Internet, and communication on the Internet was steadily increasing; as well, using social network sites increased a lot during ongoing-test. An increase in a number of students who learned on the Internet showed statistical significance in Table 5.10. For the increase of listening to music and/or watching movies on the Internet, students who were interviwed identified that they watched a short film on the Internet as an sample. Then, they can have an idea or find effects for making a short film. This may refer that students used the Internet as a source of short films for learning. In addition, they can learn how to make a short film from medias on the Internet. Communication on the Internet can refer to learner-human interactions of e-learning (Hirumi, 2002). Students used the Internet to contact with group members about making an appoinment and planning action, and peers in other groups to ask for a knowledge source and exchanging ideas. Some students contacted teachers online to ask information about time frame and content of a learning area. Furthermore, using social network sites increased a lot during ongoing-testing with statistical significance, as shown in Table 5.10. This can relate to communication on the Internet because a social network site is a popular channel for communication on the Internet according to a study of Subrahmanyam and Smahel (2011: 1-13).

In the other hand, the short film production related to reduce time for Internet entertainment in their leisure time. As shown in Figure 5.6, a number of students who play online, computer, and video games as the most frequency Internet use of adolescents (Subrahmanyam and Smahel, 2011: 1-13) was steadily decreasing. Students may be interrupted by the short film production.

Figure 5.7 presents a number of students who had the ability and willingness to learn was increasing. According to a study of Grow (1991), self-directed and involved students have the ability to learn, and self-dirented and interested students have the willingness to learn. After paricipating in the activity, most of the students (73 percent)

had the ability to learn because they were in degree of self-directed and involved students. Whereas, before participating in the activiy, there were 40.6 percent. Therefore, an increase of the ability was 33.4 percent. Moreover, after participating in the activity, there were 51.4 percent of self-directed and interested students who had the willingness to learn. Whereas, before participating in the activity, there were 41.9 percent. Therefore, an increase of the willingess was 9.5 percent. From the information above, the short film production can increase a number of students in ability to learn more than willingness to learn. As a result, percentage of students who was increasing in ability to learn was 33.4, but in willingness to learn was 9.5. This may reflect doing an activity, later. An later activity should be concerned with increasing students' willingness. Following Grow (1991), students' willingness can be increased by teachers' motivation.

For the tracked risk students, Table 5.11 shows changes in the degree of self-direction. Most of them (six students) were improving their ability to learn because they changed from the dependent group to the involved group. The risk students may have an opportunity to use their skills to learn. This activity gave them the ability to learn as active learning instead of passive learning. In regular classrooms, they may not have an opportunity to learn as active learning. As interview from teachers, the risk students did not like to study in a classroom. They show poor study performance. Therefore, teachers should identify their learning style. Perhaps, learning as doing an activity that occur out a classroom can match with their learning style. Three of the tracked students (No.1, 5, and 6) liked to do this activity because they acted as a group leader. Moreover, students 2, 7, and 8 reported that they decreased playing online games, because they spend much time conducting this activity.

However, most of the tracked risk students were in degree of involved students. According to a study of Grow (1991), they had ability not the willingness to learn. Therefore, teachers should be concerned with motivating them to increase their willingness. There were three students of the tracted risk students acted as leading students.

In conclusion, a number of participating students who had a SDL skill for Internet use was increasing. This can be affected by the designed activity. A number of participating

students was increasing SDL in ability to learn (33.4 percent) which was more than willingness to learn (9.5 percent). This may relate to an opportunity to use their learning skills for learning. However, teachers should be aware of this and adapt an activity to improve students' willingness. Students' willingness can be improved by teachers' motivation. Moreover, most of the risk students can improve their SDL skill. This can related to their learning style. In this project, increases in SDL and spending leisure time for Internet learning were related. As a result, a number of participating students who had a SDL skill was increasing and a number of participating students who did Internet learning in their leisure time was increasing.

6.4 Recommendations

6.4.1 Practical level

The Thai government supports the Internet use in schools. However, students' Internet use for learning requires teachers' new practice. Teachers have to set an instructional method to support students' Internet use. SDL can be a good choice of teachers. It matches with students' technology use (Timothy et al, 2010). SDL leads students to set learning goals and implement learning. Then, students can access learning content and expertise on the Internet. The Internet provides a wide range of information and experts that can meet students' learning goals.

This study created awareness and involvement of teachers in the selected Thai high school to improve students' SDL for Internet use. This could be published as a research paper. However, there is a gap for generalizing teachers in other Thai schools. Therefore, the Thai government should have a program that encourages teachers to build students' SDL for Internet use. This is consistent with a success case as a study of ADB (Watson, 2007). The program can focus on knowledge management. For example, teachers who have experience should share their findings with other teachers.

The participating students were tested through experimentation with an activity. The results showed that the number of students spending their leisure time to use the Internet for learning increased. Moreover, most of the students have improved their degree of self-direction. However, some students did not improve. Therefore, the teachers should

focus on the students to find a way to improve them. The teachers' learning as experiential learning can be considered to improve teachers' practice. Teachers can learn from their experience. Students may like different activities. For example, risk, non-risk and leading students have different learning styles. The leading students may combine their online learning in the classroom due to their high performance in the classroom. Therefore, the framework of the three levels of online learning's interactions and the process of SDL can be applied with other activities that match with students' learning style.

A number of participating students who improved the ability to learn increased 33.4 percent. The willingness to learn increased 9.5 percent. This project influenced improvement of the ability more than the willingness. Students had an opportunity to use their learning skills. However, the willingness that implies to teachers' motivation should be concerned. The motivation can be things that relate to students' interesting like grades as studying outcomes, and acknowledgement of teachers. As well as, motivation of community and experts may build students' willingness.

In term of adolescent development, teachers can design an activity to intervene their students. Brinthaupt & Lipka (2002) mentioned that an effective intervention can be adopted for early adolescents as junior high school students. Early adolescents begin to develop the abilities of cognitive changes. They are improving their learning skills like SDL skills. Learning skills of early adolescents set foundation for later learning. Moreover, early adolescents normally enter a new school as grade 7 of junior high school. This leads to opportunity of an effective intervention because teachers can guide them to settle into the new environment. Therefore, an intervention to improve SDL skills should be conducted for early adolescents especially junior high school students.

6.4.2 Policy level

With this project, teachers created a learning activity for their students and supported students' learning. Then, students learned by doing a learning activity. The project is consistent with Singapore's educational vision as "teach less learn more" (Lateef, 2010). This refers that teachers innovate their practice for students' learning. Teachers produce curriculum, pedagogy and assessment based on their specific school. As a

result, they create a learning activity for their students and act as facilitators to support their students for learning. However, the basic education core curriculum 2008 (MOE, no date) of Thailand do not open an opportunity to "teach less learn more" in high school level. It specifies full content of each learning area and learning hours in classroom. Thai teachers have to follow its prescript. They focus on teaching time in classroom but innovation for students' learning.

Moreover, the ministry of education (MOE) in Thailand has supported distance education through satellite (Yamwagee, 2014) and the SchoolNet Thailand program since 1995. This is a way of educational opportunity extending. Thai schools in remote areas do not have enough teachers. The Internet can be a tool to expend an educational opportunity. Therefore, the MOE in Thailand operates the SchoolNet Thailand program to support infrastructure of the Internet in Thai schools and provides learning contents on the Internet. However, teachers' practice should be concerned by the MOE. The MOE should prepare teachers to integrate the Internet for their practice. It should provide a policy that focuses on building teachers' ability to create an instructional method. Teachers should have an ability to set an instructional method that supports students' Internet learning. Then, students can use the Internet for learning.