CHAPTER 1

INTRODUCTION

The knowledge age involves a knowledge-based society and knowledge-based economy as social and economic development. It refers to knowledge as a factor for development. Knowledge can be produced, distributed and utilized for the creation of production and education. This will lead people to wealth and employment. As well, it affects people's living standards and social development (NITC, 2003).

In the knowledge age, countries are trying to develop their people to create a knowledge-based society and economy. A way to develop people is providing a learning platform that people can create, share, and use knowledge. Information and communication technology (ICT) can be adopted as a learning platform (Timothy et al., 2010). The ICT is regarded as a main role for producing, accessing, storing and disseminating knowledge (NITC, 2003). Especially, it is a resource of knowledge for people to learn. International organizations like the United Nations Development Program (UNDP) and Asia Development Bank (ADB) are supporting ICT use for development. As a result, many countries have policies about using ICT to develop their people.

1.1 International Organizations Supporting ICT use

For human development, the UNDP supports the use of ICT, especially the Internet. The UNDP issues a Human Development Report to rank countries using the technology achievement index (TAI). TAI can categorize countries into four groups such as leaders, potential leaders, dynamic adopters and marginalized. This bases on how well each country as a whole is participating in creating and using technology. A part of TAI involves diffusion of innovation that is measured by the possibility of Internet use as a knowledge source for education and learning. TAI concerns that the Internet should be widely diffused and used to develop a technological skill base throughout the

population. The UNDP also proposed that the Internet is particularly valuable in countries where populations can improve their capacities (Desai, 2002).

To support ICT use, countries propose to utilize ICT for basic education to develop their students (Bolhuis & Voeten, 2001; Timothy et al., 2010). The ICT can be integrated into school practices for learning activities. It leads students to use ICT for independent learning and taking responsibility for learning in their leisure time. This involves preparing students for lifelong learning and higher education.

Therefore, ADB has funded developing countries in the Asia and Pacific region to encourage ICT in basic education (Watson, 2007). This affected the countries' policies and strategies about ICT in education. ADB concluded its study about success factors for integrating ICT into education practice. One of the success factors is awareness and information about the potential of ICT. Communication of good local practices should be performed.

1.2 Adolescents' Internet use

Due to the support of the Internet for education, adolescents who are in age of education have an opportunity to use the Internet. They can access the Internet in their school and houses. They are acquaintances to do activities on the Internet by using a variety of devices in their leisure time. Prensky (2001) mentioned about digital natives that concerns with adolescents who are living with digital technologies such as computers and the Internet, and other media devices. Their life is bounding Internet activities like informational and communication purposes. (Subrahmanyam and Smahel, 2011: 1-13).

The Internet provides popular applications for adolescents all over the world. From a survey in the U.S.A. and Canada in 2007, adolescents in the ages of 12 to 18 mostly used the Internet applications for communication and entertainment activities (Subrahmanyam and Smahel, 2011: 1-13). However, Subrahmanyam and Smahel (2011: 126-129) have mentioned about negative effects of adolescents' Internet use. Adolescents' Internet use can interrupt their learning and other activities. Whereas, their parents and schools provided the Internet to them with the expectation of educational purposes. Adolescents who spend excessive time for entertainment on the Internet

receive negative outcomes like changing sleep patterns, learning and memory problems and poorer school performance (Subrahmanyam and Smahel, 2011: 126-129).

1.3 Policies and plans about ICT for basic education in Thailand

Thai policies and plans are promoting Internet use in basic education with the vision of lifelong learning. The Thai government has issued policies and plans about ICT since 1996 that have been involved with ICT for education. These have included two IT policy frameworks; IT2000 (1996-2000) and IT2010 (2001-2010) (NITC, 2003). Moreover, there have been ICT plans of the ministry of education to follow ICT policy frameworks.

With IT 2000, "SchoolNet Thailand" was established as a project to support the Internet use in Thai schools. It provided the Internet use to Thai schools without access charge (except the phone line charge) and created content for learning. The project was focused to drive e-Education in Thailand (Laohajaratsang, 2010). As beginning, it provided the Internet to Thai high schools for learning. Moreover, it created content for basic education in Thailand (Kiattananan & Koanantakool, no date). To support e-learning, SchoolNet Thailand achieved for providing Internet infrastructure and creating content for schools nationwide with low cost. This led to a good Internet infrastructure for Thai schools (Kiattananan & Koanantakool, no date). The infrastructure to connect the Internet was provided to over 4,300 public and private schools in Thailand (Thuvasethakul & Koanantakool, 2002).

Next, IT 2010 was issued to build ICT use with vision for creating a knowledge-based society and economy (NITC, 2003). It influenced basic education as targets of all schools connecting to the Internet and at least 30 percent of them use computer and IT in support of education and teaching. It comprised issues such as lifelong learning, computer literacy, human resource development and virtual education (NITC, 2003).

Table 1.1 Brief history of ICT for education in Thailand (Laohajaratsang, 2010)

	First phase	Second phase	Third phase
Major issues	- Prepare Thais for IT society and knowledge society	- Equal access and benefits from ICT for lifelong learning	- Smart Thais with information literacy
Key policies	- Distribution of ICT in schools - Professional development in ICT - Digital content and curriculum development	- ICT for effective management - Professional development in ICT and ICT information infrastructure	- Educational human resource and professional development (Cont') - ICT infrastructure - Digital content in every area
Teaching-learning	- ICT literacy - Introduction of ICT use in classroom	- The Internet as an educational tool	- Integrating ICT into Thai classroom - Blended learning
Successes	- Internet backbone & pilot project i.e. SchoolNet Thailand	- Awareness of change - Projects for remote areas	- Quantum lump policies and budgets to acquire hardware, software and content
Unfinished projects	- Educational infrastructure and HR development	- Educational infrastructure and HR development (Cont')	- Systematic/Holistic approach to restructure the entire system - Inappropriate use of Internet

To follow the IT policies, the Ministry of Education in Thailand had proposed the ICT Master Plan. Table 1.1 concluded ICT for education in Thailand. There were three phases.

The first phase (2000-2002) had focused on preparing learners and teachers for a knowledge society by providing computers and networks in schools, as well digital content for teaching and learning. This led to the concept of using ICT in classrooms. Actually, the first plan had supported the SchoolNet Thailand. However, it had some obstructions of educational infrastructure and the educational human resource development (Laohajarastsang, 2010).

The second phase (2004-2006) seeked to provide Thai people with equal to access ICT for their lifelong learning. To accomplish this, it had concerned effective management, professional development in ICT, and ICT educational infrastructure. Its goal was to provide Internet access to all schools in Thailand by 2005 and the use of the Internet as an educational tool. However, the educational infrastructure and the educational human resource development had still blocked its successfulness (Laohajarastsan, 2010).

The third phase of the ICT Master Plan of the Ministry of Education was implemented from 2007 to 2011. The plan involved three issues including quality to learning through increased access to new learning resources and improved teaching approaches, educational and ICT management information systems, and quality of ICT graduates and need for ICT specialists (Watson, 2007). With these issues, Thai classrooms had faced integrating ICT into teaching and learning. Moreover, there were three goals:

- All educators, college students, and school students should use ICT to access information and gain knowledge through self-paced learning or through interactions with teachers and fellow students.
- Linking schools, higher educational institutions and libraries to provide educators and students reaching distant resources for learning.
- Making maximum use of ICT and distance education to meet the needs of Thai people for continuing education and skill improvement.

With ICT policies and plans, educational core curriculum 2008 is encouraging students to use ICT. Its vision relates to lifelong learning. As well as, it is improving a capacity

for technological application as a learners' key competency. This capacity has involved skills in the application of technological processes for development of oneself and society in regard to learning, communicating, working, and problem-solving through constructive, appropriate and ethical means (Ministry of Education, no date: 4-7).

Thai high schools also have to follow educational standards for internal quality assurance that has been established by the Thai government. The standards indicate teachers' practice and administration in Thai high schools (The Office of the Basic Education Commission, 2006). The standards are presented in the Appendix A.

There are standards that concern with teachers' practice for students' ICT use (The Office of the Basic Education Commission, 2006). First of all, the standard 5 in learner quality mentions that learners should have necessary knowledge and skills as prescribed by curricula. It includes students' ability to use IT technology to develop learning**.** Moreover, the standard 6 in learner quality relates to a skill for self-learning and love to learn, and self-develop continuously. It includes students are interested in seeking knowledge from difference sources and have own learning method.

1.4 Problems of students' Internet use in Thailand

From the support of the Thai government, the Internet was provided in public libraries, schools, Internet cafes, and households over the country. As a result, the number of Internet users in Thailand has nearly doubled from 2004 to 2010 (NSO, 2010 : 2).

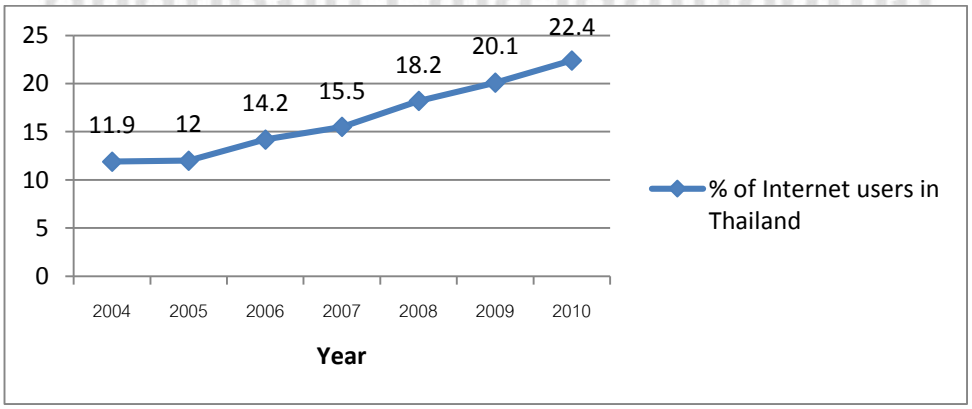

Figure 1.1 The percentage of Internet users in Thailand (Adapted from NSO, 2010 : 2)

Young people in Thailand had the highest rate of Internet use (NSO, 2010 : 8). As depicted in Figure 1.2, young people between the ages of 15-24 had the highest rate of Internet use. Those aged 6-14 years were the second highest group of Internet users. With this information, e-Education of Thai government had a vision of lifelong learning and ICT use for teaching and learning. This could drive Thai adolescents to improve their knowledge.

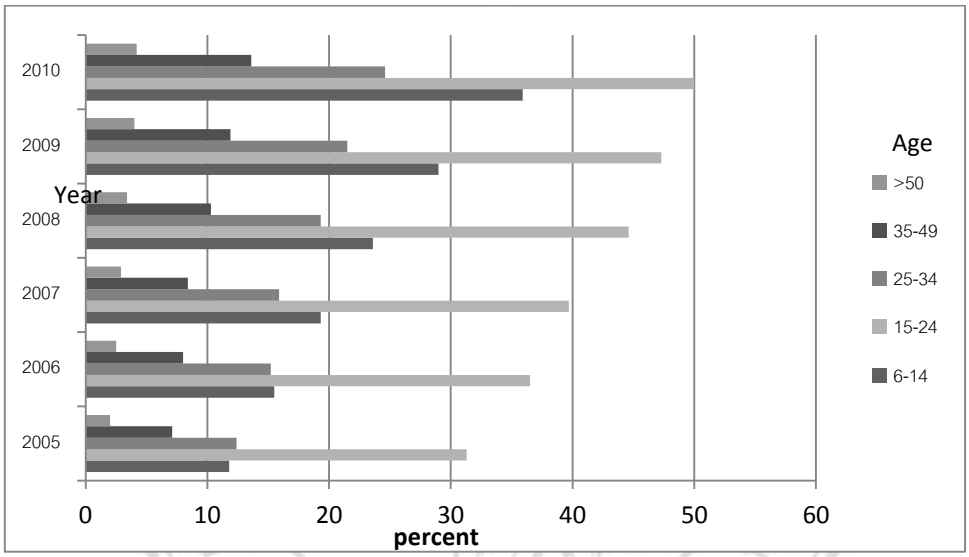

Figure 1.2 The percentage of Internet users in Thailand (2005-2010)
(Adapted from NSO, 2010 : 8)

Truehits Statistics (no date) identifies that Internet use in Thailand is mostly concerned with entertainment. Figure 1.3 identifies percentages of websites visited from 2006 - 2009. Entertainment websites had the highest visited rate at 38.41 percent in 2009. Games are the second highest with a share of 12.64 percent in 2009. On the other hand, educational websites accounted for the lowest usage rate at 2.16 percent in 2009. Lastly, the most popular search terms in Thailand has been related to games and music from 2006 to 2010.

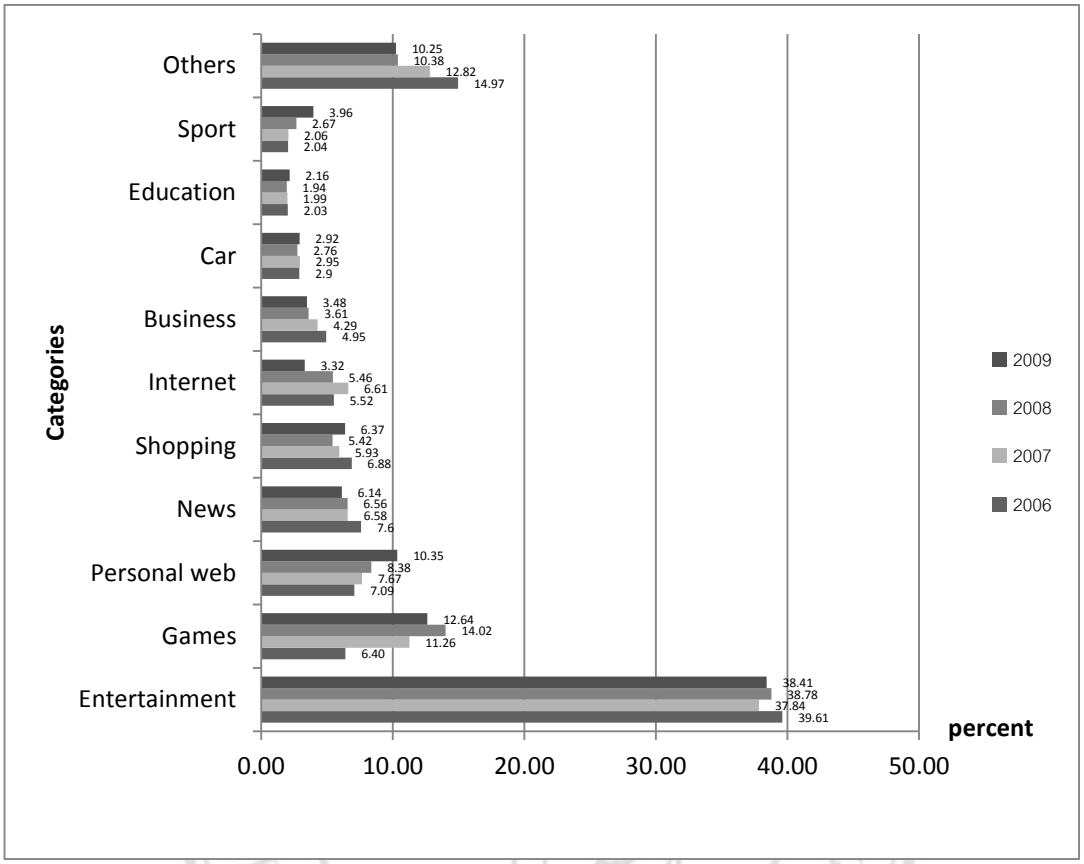

Figure 1.3 Percentage of websites visited in Thailand based on category (Adapted from Truehits Statistics)

As the results from the SWOT analysis of the first Thailand ICT Master Plan (2002-2006) (NECTEC, 2003), there was one problem about adolescents' Internet use. The ministry of information and technology (MICT, 2009) showed that the Internet use in Thailand mostly related to inappropriate usage. Most of the use of Internet was for entertainment (more than for educational purposes, commercial transactions or government transactions), the inflow of foreign cultures and inappropriate content, and an increase in computer crime. Thai adolescents particularly trended to involve inappropriate Internet use. They liked to play computer and online games regularly and most of them used the Internet for entertainment.

Moreover, SchoolNet Thailand found a problem about students' Internet use in Thailand. The problem concerned with students' leisure time on the Internet for entertainment like playing games and chatting with peers for fun. Students can also

access to inappropriate content (Kiattananan & Koanantakool, no date). The problem obstructed students' Internet learning because students aimed to take a long period of time to use the Internet for entertainment. It could interrupt students' learning.

A study of Tawata (2011) presented three places of Thai high school's Internet use that included schools, households, and Internet cafes as Figure 1.4. Thai high school students may do Internet activities that involved inappropriate use. As a result, they received negative outcomes.

In the school, students can do Internet activities in their leisure time. Students' Internet use mostly involves entertainment like playing games, watching video clips and visiting social networking sites (Tawata, 2011). In addition, very few teachers have created content to enhance e-learning. Students can use the Internet as a source for copying information to finish their assignment without reading, analyzing, and adjusting the content. This leads to a lack of learning.

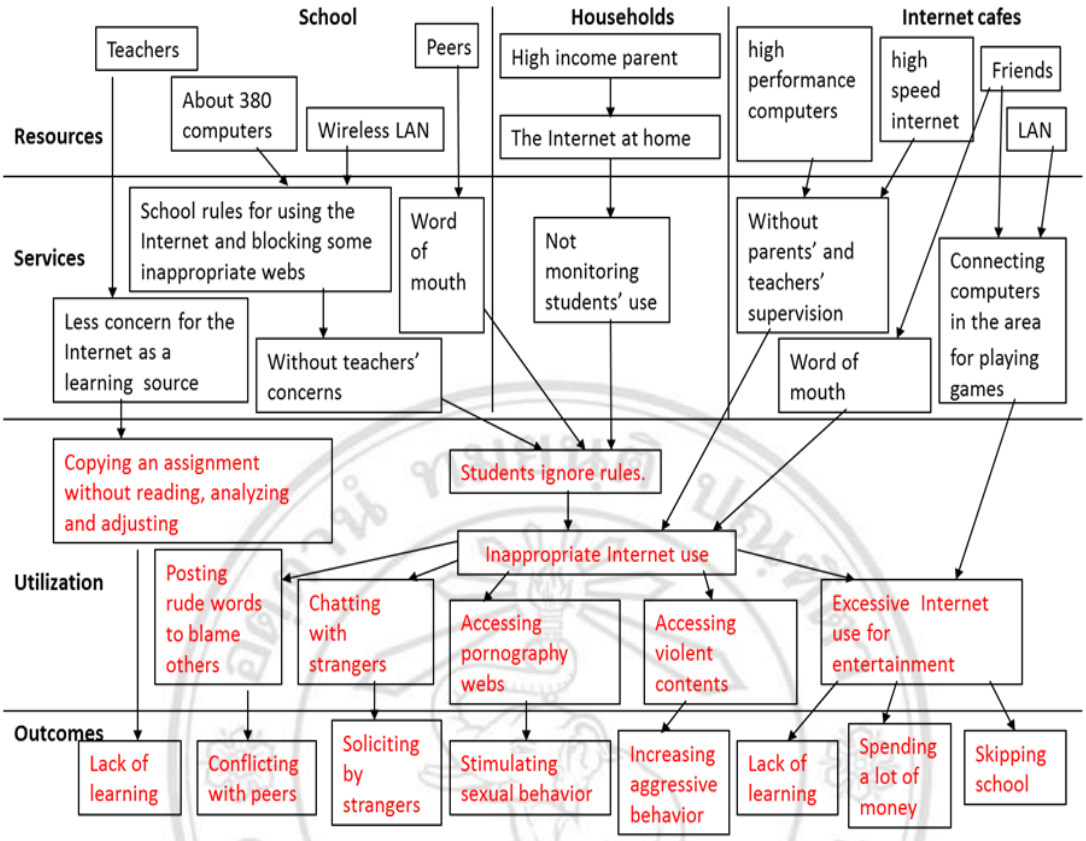

Figure 1.4 High school students' inappropriate Internet use and negative outcomes (Tawata, 2011)

In households, many parents support the Internet in their home for their children with expectation of students' Internet use for learning and complete their assignments. However, students found that Internet use at home was privacy. Students may access inappropriate websites (Tawata, 2011).

The Internet cafes can attract students with services shown in Figure 1.5 (Tawata, 2011). They provide online entertainment to students with high speed Internet. They are located in close proximity to the school. Therefore, some students like to use Internet cafes after school to play games with their peers because Internet cafes support LAN games for groups of students and online games with high speed. Students are free to use the Internet in an appropriate way at Internet cafes due to no parental or teacher supervision.

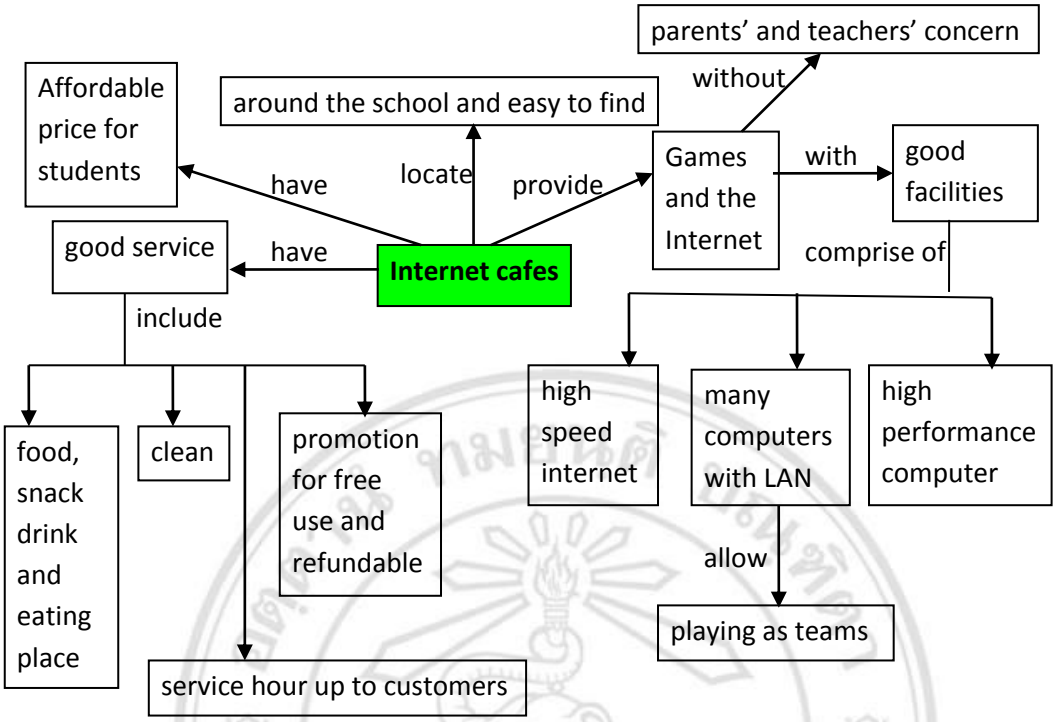

Figure 1.5 Internet cafes as providers of high school students' Internet use (Tawata, 2011)

1.5 Thai Teachers' role for students' Internet use

Thai teachers have had a problem about integrating ICT use into students' learning. From a study by Laohajarastsang (2010), ICT policies and plans about education of Thai government was less progressive. As a result, there was a sensitive issue of ICT use in Thai education from teachers. Most Thai teachers were sensitive to change, even though had attended development programs and been trained by the development programs. Thai teachers have not adopted an instructional method that leads to students' Internet use for learning. Their practice has involved passive learning (Pagram and Pagram, 2006).

From a study of Timothy and colleagues (2010) ICT use for learning requires a self-directed learning (SDL) skill. A SDL skill can be implied to an important skill for Internet learning that relates to lifelong learning and drives a knowledge-based society. With the study, teachers can adopt SDL as instructional methods to cultivate students' SDL skill. They can also integrate SDL into Internet learning in leisure time. Then,

students can conduct learning by using the Internet in their leisure time. This can improve students' SDL skill.

To cultivate students' SDL skill and Internet learning in leisure time, teachers play a key role (Bolhuis and Voeten 2001). They can be identified as knowledge workers. They are responsible for students' learning. They should be aware and involve creating an activity for students to learn how to learn. From a study of Lin and Tsai (2002), teachers play a key role for positive high school students' Internet use. They can assign students to use the Internet for academic purposes. Teachers need to utilize the Internet as a tool for learning and understand the negative impacts of students' Internet use. This will affect the students' Internet use to improve their learning (Koster et al., 2011).

1.6 Conclusion of a problem of high school students' Internet use in Thailand

Thai high school students have had opportunities to use the Internet because the Thai government's support of proposing and implementing ICT policies and plans. They can spend their leisure time on the Internet. Obviously, Thai young people who are about age of high school students have liked to use the Internet in their leisure time. However, their Internet use mostly related to entertainment. They have liked playing games and other activities that have led to negative outcomes. Thai high school students' Internet use has not been consistent with learning that supports knowledge-based society and knowledge-based economy. Their Internet use has not fulfilled ICT policies and plans of Thai government. It also seems to have interrupted their learning.

In Thailand, integrating ICT into school practices has been less progressive. Thai teachers normally influence students' Internet use for learning both in class and leisure time. Teachers can assign students' to use the Internet for completing assignments and extracurricular activities. However, teachers have not adopted their teaching and learning that leads to students' Internet use for learning.

SDL is an instructional method and students' skill that relate to learning. It refers that students can use resources to learn. The Internet as a learning source should be focused by teachers. Teachers can adopt SDL as an instructional method in Internet context to improve students' SDL. This can lead to students' Internet use for learning in leisure time.

1.7 Research question

How can teachers improve high school students' SDL for Internet use to learn in their leisure time?

1.8 Research objectives

- To determine the characteristics of a self-directed learning (SDL) improvement system for high school students' Internet use
    - This concerns teachers' regular workload and a framework of students' SDL and online learning.
- To develop the SDL improvement system
    - Participating teachers' awareness and understanding leads to create an activity for the SDL improvement system.
- To test the SDL improvement for students' Internet use to learn in leisure time
    - Participating students are tested by the activity to see improvement before, ongoing, and after joining the activity.