# An Effect of interactive media in a social awareness ubiquitous learning community

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Chulalongkorn University collaboratively worked with the Office of Basic Education, and Department of Highways, with a support from a Corporate Social Responsibility Unit (CSR) of Toyota motor Thailand in a Road Safety Project. The project was aimed at cultivating a social awareness, "from a school to a community", using a set of interactive media that supports a ubiquitous learning environment.

A framework of "a Ubiquitous Learning Community: from a School to a Community", consisted of three phrases of work: (1) A development of interactive media for a social awareness, (2) An accelerate teacher training network, and (3) An establishment of a ubiquitous learning community. An interactive media so-called a "White-Road Social Awareness Toolkit", is a design of media for learning intervention based upon a continuum of an abstract to a concrete learning experience, consisted of a simple interactive paper-printed book integrated with an Augmented Reality (AR), an interactive game-based learning, a Virtual Learning Center, and a Multimedia Blog for an Appreciative Inquiry (AI), as well as a Digital Storytelling (DS) of a learning community.

The second phase of the project when the toolkits were fully developed, teacher training programs were offered to groups of teacher network. To lead an active learning in school and to bind teachers to be a network

group, teachers were invited shared a "WhiteRoad safety Wikipedia", a series of integrated Road-Safety Lesson Plan, based on a "Challenged-based Learning technique", that students together with community set a goal to achieve their own community road safety issue. In the final phase of establishing a ubiquitous learning community, teachers led students to perform a road safety learning task in their communities, and using their mobile devices archives evidences of their works, and produce a video product in a digital storytelling fashion, and eventually uploaded to a social network community platform.

A mix method research method was applied in this final phase. The framework of "a Ubiquitous Learning Community: from a School to a Community" was deployed to a group of 68 teachers and 124 students from 20 schools and communities in the central part of Thailand. The result showed the high level of road-safety social awareness of the sampling group. There were evidences of the establishment of seven active learning communities. The interactive media were found to be instructional realistic, purposefully emotional involvement, and meanwhile bridging learning tasks to a social awareness in a ubiquitous learning environment.

# Introduction

In a decade in which wireless technology flourished in Thailand, new generation spends hours of learning and playing on their mobile devices. A neo-millennium learning style is defined to describe a young generation who interweaves their learning and playing in a face-to-face and online to communicate and connect with others across a distance and a time difference. This learning and life style has dramatically changed the way of people communicate and learn. Adult or even elderly group needs to adapt this new communication skill to keep up with the changing world. This new dimension of communication and learning hence opens up an opportunity for learning to take place without a scope of time, limitation of age & genders or in a boundary of classroom. An online Learning Community becomes an approach of learning that formal and non-formal learning is met. A Learning community, a physical or a virtual one, is a group of people who share common emotion, value and belief, and are actively engaged in learning together and from each other. Members of a learning community feel some sense of loyalty that drives their desires to keep working and helping each other continuously learn throughout a circle of learning interest.

An increase use of handheld and portable devices, along with pervasive wireless networking, binds schools and communities together. People in this age carry the Internet in their pockets; teaching and learning is definitely re- positioned to a learning that not limit in a boundary of classroom, but being authentic and lean more to a community context. Classroom and community together can learn and share their values and beliefs though a geographical dispersion. Social value, then, can be naturally embedded in a learning community via a wireless technology. An online learning community although can occur by an arrangement of a purposive communication; a particular pedagogical design enhanced by an interactive media can help a learning goal and a social value outcome to be achieved.

With a support from a Corporate Social Responsibility (CSR) unit of Toyota motor Thailand, Chulalongkorn University collaboratively worked with the Office of Basic Education, Department of Highways on a Road Safety Project to establish a white road learning community. The project was aimed to cultivate a road safety

social awareness, "from a school to a community", by using interactive media to enhance a Ubiquitous Learning environment, that learning can occur at anytime, in anywhere, and accelerated its outcome by computer, telephone or mobile devices. The framework of "from a school to a community" is simply an attempt to cultivate a social value in terms of road safety awareness through a school activity in a contextual learning, students carry out their own community problem solving that reflected learning tasks in a real world.

## Social awareness: A social Value and an Attitude change

Social awareness is one type of values. Value is a part of an individual's attitude, predeposition to respond to people, environments, or objects. Values can be defined as broad preferences concerning appropriate actions or outcomes. Personal values generate behaviors, providing an internal reference in favor of good, beneficial, or important, etc. Values represent what individuals think, are worthwhile and accepted it as a belief or idea of their own. When individuals experience a particular event, they decide either to put values into decision every time. Values are basic conduct of stays and practice of people in everyday life. For example, the values of Thai people in general, differ from the values of Western, such as Thai consider peaceful emotional merit, respectful behaviors to parents and grateful those who are to be honored.

Features of values can be determined by the characteristics that:
- individual has an opportunity to choose from several options without forcing it, and feel it's fit an operational,
- individual feels honored and proud to accept, support and worship
- individual holds real action, not just a surface behavior, and importantly react to the situations based on the value as a permanent behavior.

Values can be obtained in many ways. The most important places for building values are from home and school. Family is responsible for teaching children what is right and wrong long before there are other influences. Social Practitioners found values are formed during three significant periods: (1) imprint period from birth to 7 years of age, especially when it comes from parents. (2) modeling period from 8 -14 years, learning by trying things how people feel suit

and fit, and  (3) socialization period from 15 -21 years naturally turn to people that seem more alike, and exchanging with a social and peer groups(Massey, 1998).

**A social value**: A social value can be altered by a process of learning-- three domains of learning: Cognitive-- mental skills (Knowledge); Psychomotor-- manual or physical skills (Skills); and Affective--growth in feelings or emotional areas (Attitude) (Krathwohl, 1964). Five stages of affective domains are Receiving, Responding, Valuing, Organization, and characterization.  "Receiving" or "Awareness" is a stage individuals are being aware of or sensitive to the existence of certain ideas. "Responding" is a stage of committing in some small measure to the ideas, materials, or phenomena involved by actively responding to them. "Valuing" stage is willing to be perceived by others as valuing certain ideas, materials, or phenomena.  Individuals "organize" by relating the value to those already held and bring it into a harmonious and internally consistent philosophy. The "Characterization", finally, come by value or value set is to act consistently in accordance with the values individuals have internalized.

Affective responses are parts of attitudes that are learned or established predispositions to respond (Zimbardo&Leippe, 1991). Attitudes are systems or constructs that are composed of four interrelated qualities: affective responses, cognitions, behavioral intentions, and behaviors. Attitudes are acquired, although arguments are that some attitudes may be innate or may have biological origins. Attitudes are not directly observable, but the actions and behaviors to which they contribute may be observed. Although the cognitive and affective "domains interact significantly in instruction and learning", a behavior that has an emotional component lies within the affective domain.

**Instruction and Attitude Change:** Attitude change is an alteration in the direction, degree, or intensity of an attitude. A change in one component of a given attitude may produce change in other components. Moreover, attitudes about one object/event may be connected to attitudes about another object/event, and change in one attitude may lead to change in others (Zimbardo&Leippe, 1991).

Theorists (Smith & Ragan, 1999) considered an affect to be a post-cognitive process. An affect is thought to be elicited only after a certain amount of cognitive processing of information has been accomplished. In this view, an affective reaction is based on a prior cognitive process in which a variety of content discriminations are made and features are identified, examined for their value, and weighted for their contributions (Brewin,1989). Some scholars (Lerner and Keltner

2000) argue that an affect can be both pre- and post-cognitive, with thoughts being produced by initial emotional responses, and further affect being produced by the thoughts. In a further iteration, some scholars argue that an affect is necessary to enable more rational modes of cognition.

Several educators proposed strategies to alter individuals' attitudes. Simonson and Maushak (2001) drew findings from numbers of studies, and created six guidelines for effective design of attitude instruction. These are:
- make the instruction realistic, relevant, and technically stimulating,
- present new information,
- present persuasive messages in a credible manner,
- elicit purposeful emotional involvement,
- involve the learner in planning, production or delivery of the message,
- provide post-instruction discussion or critique opportunities.

Smith and Ragan (1999) focused on the behavioral aspect of attitude learning and emphasize the importance of three key instructional approaches:
- demonstration of the desired behavior by a respected role model
- practice of the desired behavior, often through role playing
- reinforcement of the desired behavior

Bednar and Levie (1993) proposed an instructional design for attitude change with three approaches emerged from theoretical literature: providing a persuasive message; modeling and reinforcing appropriate behavior; and inducing dissonance between the cognitive, affective, and behavioral components of the attitude. Researchers suggest that learners will experience more attitude change if the cognitive aspects of a lesson are presented before the affective aspects being introduced, while some others suggest the opposite effect. However, Zimbardo and Leippe's study (1991) proposed presenting first the general and then the particular, first the abstract and then the concrete would seem to be sound instructional design for both cognitive and affective domains.

## Ubiquitous Learning Community

Ubiquitous learning has been recognized by the use of wireless technology via Wi-Fi, cellular phone services, or mobile satellite communication, to enhance

learning opportunities to be taken place wherever the data communication services can be reached. A combination of landline connection and wireless system reinforce a holistic learning approach, learning community; where formal, non-formal and informal learning share theirs spaces and experiences, that are primacy, interactivity, adaptability, and situational-based learning.

**Learning community**: Learning community is a group of people who share common emotions, values and beliefs, and are actively engaged in learning together. Such communities have become the template for a cohort-based, interdisciplinary approach to higher education. This may be based on an advanced kind of educational or pedagogical design. Community psychologists such as McMillan and Chavis (1986) state that there are four key factors that defined a sense of community: "(1) membership, (2) influence, (3) fulfillment of individuals needs and (4) shared events and emotional connections. So, members in the learning community must feel some sense of loyalty that drives their desire to keep working and helping each other. Also, the things that the participants do must affect what happened in the community. Besides, a learning community gives a chance to members to meet a particular need by expressing personal opinions, asking for help and share stories of events with an emotional connection. (Miller, 2008)

**Ubiquitous Learning:** The word "Ubiquitous", originally comes from "Ubiquitous computing", is a post-desktop model of human-computer interaction in which information processing has been thoroughly integrated into everyday objects and activities. In other words, ubiquitous computing is defined as machines that fit a human environment instead of forcing human to enter theirs. Mark Weiser, father of the Ubiquitous Computing, stated that a ground of computer that the purpose of computer, is to help doing things; quiet & calm, invisible servant and extend human intuition and unconscious. Up to these days, three basic forms of ubiquitous devices appear to be tabs, pads and boards. Tabs are a wearable centimeter sized devices, Pads are hand-held decimeter-sized devices, and boards are meter sized interactive display devices.

Ubiquitous learning later is known as its equivalent to some form of simple mobile learning via a hand-held or tabs platform, that learning environments can be accessed in various contexts and situations. A ubiquitous learning environment is

then included any setting in which learners become totally immerse in a learning process. A ubiquitous learning environment can be a situation or setting of pervasive or omnipresent education or learning. Learning can happen all around the learners, without being conscious of the learning process.

Chen and Kao (2002) concluded characteristics of U-Learning as following:

- Permanency: all the learning processes are everyday.
- Accessibility: Information is provided based on requests. Then, the learning involved is self-directed.
- Immediacy: Learners can solve problems just-in-time, for their abilities to retrieve information.
- Interactivity: Learners can interact with experts, teachers, or peers in the form of synchronous or asynchronous communication.
- Situating of instructional activities: The learning could be embedded in a contextual situation.
- Adaptability: Learners can get the right information by their judgments.

## Interactive media

Interactive media, in technological term, are associated with primarily human–machine relations, pertaining to or being a computer or other electronic device that allow a two-way flow of information between it and a user, responding immediately to the user's inputs. A new genre of interaction has developed through participation with increasingly subjective and semi-autonomous technological devices. In Social science interactive media, it was referred also to an ability of computer devices and software especially in a network environment that encourage an interaction between users at the end of the computer terminals.

Media attributes found in researches a substantial impact on learners' affective domain of learning. Based on Information Processing Theory, the levels of processing framework, Clark, R. (2001) postulate separate stages for sensory, working, and long-term memory. Information is processed at multiple levels simultaneously, depending on its characteristics. The deeper the processing, the more information will be remembered. For example, information that references several contexts, such as a visual image and a story will be processed at a deeper level. In addition, individuals remember events that are more meaningful, because it requires more processing than meaningless events.

The Visual Instructional Movement was recognized by Edgar Dale's with his classic model of "Cone of Experience", developed a learning experiences based on concrete/abstract continuums. The peak of this movement raised the field of "Instructional media", along with the growth of psychological principles; this movement was later being replaced by "technology of instruction" or "educational technology", which increasingly depends on theory and empirical data. With its interdisciplinary of Psychology, Computer, Communications and other sources of disciplines, Educational Technology contributes its works on cognitive, affective, and psychomotor domains of learning. Studies found emotion is fundamental to human experience, influencing cognition, perception, and everyday tasks such as learning, communication, and even rational decision-making. However, technologists have largely ignored emotion and created an often frustrating experience for people, in part because affect has been misunderstood and hard to measure.

Another example is designing a qualitative persuasive message into a video medium for recipients' cognitive responses. Zimbardo and Leippe's study (1991) found that persuasive videos were more likely to produce attitude change when post-viewing discussions were held. If the instructional unit begins with an emphasis on cognitive outcomes, continues with the persuasive media message, and concludes with a discussion session, then students will be challenged with several opportunities to develop and express their own cognitive responses to the information presented. Thus, the persuasive component should not merely restate the information provided earlier, but should elaborate and expand upon it.

Moreover, Researchers at University of Chicago have developed technologies and theories that advance basic understanding of affect and its role in human experience. They aimed to restore a proper balance between emotion and cognition in the design of technologies for addressing human needs. Affective Computing is referred in the studies to computing that relates to, arises from, or deliberately influences emotion or other affective phenomena.

The Affective Computing research combines engineering and computer science with psychology, cognitive science, neuroscience, sociology, education, psychophysiology, value-centered design, and ethics. The research developed and designed new ways for people to communicate affective-cognitive states. For examples, instant messaging clients are frequently and widely used for interpersonal communication, they lack the richness of face-to-face conversations.

A Conductive Chat technology is an instant messenger client that integrates users' changing skin conductivity levels into their typewritten dialogue. Skin conductivity level is frequently used as a measure of emotional arousal, and high levels are correlated with cognitive states such as high stress, excitement, and attentiveness. Other example of fostering meta-affective skill; the tool helps fostering affect awareness and regulation in learning.   This research developed theory and technology to help learners develop meta-affective skills.     Researches on technology and affective area, for instance; emotional health system, Girls Involved in Real-Life Sharing (G.I.R.L.S.), allowed users to reflect actively upon the emotions related to their situations through the construction of pictorial narratives. The system employed common-sense reasoning to infer affective content from the users' stories and support emotional reflection.  Interactions with technologies allow for active user control.

Other perspectives of interactive media, Margaret (1998) identified interactivity as a mean of allowing the consumer/viewer to select or change the image with the help of an input device—telephone, keyboard, remote control, joystick, mouse, touch-screen, brain wave reader, etc. It is an ability of the user to participate in the creation or modification of a medium. Marshall McLuhan tracked the emergence of this new interaction through his explanation of 'hot' and 'cool' media. While cool media encouraged the interaction of their users, "hot media did not leave so much to be filled in or completed by the audience. Hot media were, therefore, low in participation, and cool media are high in participation or completion by the audience."  The cool was not necessary to be mechanistic, yet invited and increased a level of collaboration and interaction.

In addition to an automat interactive technological system, the idea based on learning by doing activities are in favor to collaborative learning and mentoring via apprenticeships.  Instructional approaches persuade students act rather than listen, do things inside the technology world that are impossible in the real world, and link to outside resources and communities of practice. For more examples of interactive art and the communities, the sites create are alternatively called platforms or stations, that keeps the sociability of artwork remains closely linked to internet rhetoric.  Yet, some researches debated on sincerity of relationship  on the Internet that do not actually mirror a relationship in real; however there is potential, as in all reciprocal relationships, for revision and transformation through active engagement and totally immersive learning process.

**Purposes of the Study**
1. To design a framework of "from a school to a community" and develop an interactive media for a ubiquitous learning community
2. To study an effect of interactive media to a road safety social awareness and learning community in a ubiquitous environment

## Methodology

A mix-methods design is applied thorough out this study.

The first phase of the project was to find a working model, using groundwork of "from a school to a community". A qualitative research approach was applied throughout this phase of study. Documents of road safety projects attempted to establish a road-safety community was analyzed, followed by a focus group of 12 participants (pedestrians, traffic control police officers, drivers, motorcyclist, public transportation drivers, school students, teachers, and university students), selected by an accidental sampling technique. Data were analyzed and proposed to a twelve experts group in: Instructional Design, Traffic Control, Social service, Learning Psychology, and Educational Technologists, to reach opinions on a process of driving ubiquitous learning community as well as an effective media selection and design.

The second phase: an implementation of the model consisted of three folds: (1) a media development, (2) an accelerate teacher training program, and (3) an establishment of a learning community. A mix-methods design included a process of Research & Development for media production, and a participatory research that focused on the effects of the researcher's direct actions of practice within a participatory community with a goal of improving the performance quality of the community in an area of concern. The research involved in utilizing a systematic cyclical method of planning, taking action, observing, evaluating and critical reflection prior to planning the next cycle.
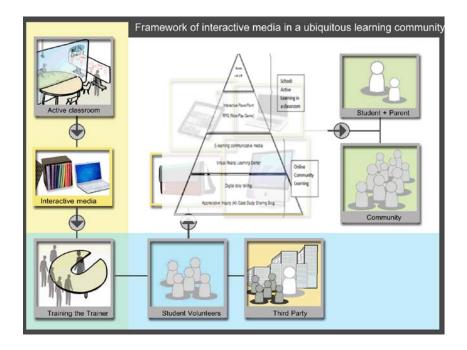
## Results

The results of this study presented in two major findings

1. The framework of interactive media for a ubiquitous learning community.
2. The effect of interactive media for social awareness in a ubiquitous learning community.

## 1. **The Framework of interactive media for a ubiquitous learning community**

  The framework of interactive media is designed based upon computer network and mobile technology, which is to support a school and community to learn in a ubiquitous fashion. Media provide an opportunity for learners to actively learn in a classroom, meanwhile are in favor to a community-based learning.



  The framework comprised of three phrases of works to achieve a ubiquitous learning: (1) the Development of interactive media for social awareness, (2) an accelerate Teacher training network with a Challenge-based Learning approach, and (3) an establishment of a learning community in a ubiquitous environment.

  1.1) A Development of interactive media for social awareness.

  A set of media was designed based on a continuum of abstract to concrete learning experiences for a concept of, "from a classroom to a community". Media and a community platform were designed to support teachers, students and

community as a virtual place where members can reach for road safety learning resources as well as can use as a place to communicate with other members. The media were developed accordingly: Wikipedia, Book with Augmented Reality (AR), Game based Learning, E-learning for media production, Virtual Reality Learning Center, Digital storytelling blog, and Appreciative Inquiry (AI) Case Study Sharing Blog.

1.1.1) Books with an Augmented Reality.

Two books of "Road safety and Social Awareness" were initially designed for students of level 2 (grade 4-5-6) and of level 3 (grade7-8-9). At the end of each unit, the books suggest series of activities that lead students to involve with their own community road safety issues. In addition to the suggested activities in the book, with Augmented Reality (AR) technology, Teacher only exposes an AR maker provided in the book to a video camera, a pre-set VDO clip will be displayed on a computer screen, that promptly serve teachers to lead students to any learning activities. Moreover, teachers can bring a virtual 3D graphic simulation of "a motorcycle helmet" for students to virtually experience; as students seeing themselves on screen wearing helmet and feel the safety.

1.1.2) Wikipedia of road safety integrated lesson plans.

Teachers in all seven different subject areas were trained to integrate aroad safety content to their lesson plans, and based learning activities on their specific community context. All lesson plans and learning media are shared among teachers' network.

1.1.3) Active Classroom learning media -- Interactive PowerPoint & Game-based Learning.

Presentation software is a type of media that teachers are most familiar with. About 60 interactive PowerPoint templates were developed for teachers to use andmodify content and design, and to share among network members. Using basic features of links and animations, the features of templates turn into a game-based learning media. This type of media requires an active participation between students and teachers to engage in a meaningful learning together.

1.1.4) Road Safety Virtual Learning Center.

A Virtual Learning Center is built in a server that isbasically provided a virtual learning environment that students and teachers can access in an avatar form. Students can collaboratively learn from materials with others in the virtual environment. In an avatar mode, students can build a learning corner based on their own experiences and share with others. As if it is real, they talk, see and feel about what have happened in other communities.

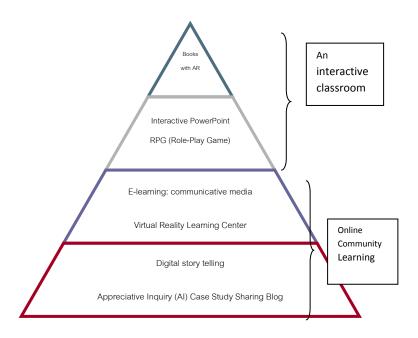1.1.5) Basic Media for road safety (E-learning).

E-learning of the "hand-made media from recycle materials" is offered for teachers and students to produce a hand-made road safety media and communicate with others in their community.

1.1.6) Digital storytelling.

Picture, VDO, audio recorded from learning activities were collected, and later presented in a simple storytelling format, and that upload to the community site.

1.1.7) Appreciative Inquiry Case Study Knowledge Sharing.

A media blog is set for students to bring in their own experiences of road safety issue in a format of cartoon drawing. The community site provides a simple tool for students to drag and drop, draw, or write a case that must be positively and emotionally impress to them. The rules of the discussion and sharing must be in a positive regard and aim at persuasive students' commitment to think and perform a proper road safety social value.

| From schools | Game-based Learning | Wiki – Integrated Lesson Plan |
| | | Books with Augmented Reality (AR) |
| | | Interactive PowerPoint |
| | | RPG (Role-Play Game) programming |
| E-learning: Media developments | | |
| To a Community | | Virtual Reality Learning Center |
| | | Digital storytelling |
| | | Appreciative Inquiry (AI) Case Study Sharing Blog |

1.2) An accelerate Teacher training network with a Challenge-based Learning approach.

Samplings were \ 68 in-service teacher Volunteers from 25 schools in the central part of Thailand. The accelerate teachers training program was accordingly:

Step 1: Teachers worked together, designed and wrote an integrated lesson plans into the community Wikipedia. The lesson plan was to integrate a road safety issues into main subject content areas with a wide range of suggested media, such as Mathematics, English, Thai, Social study, etc.

The result in this step was found to be a lack of teachers' skill in designing lesson plan and the use of technology. Those who had years of teaching experiences tended to have better skill in lesson design, while lacking of technological skills. This step was remedial by a peer coaching technique.

Step 2: Teachers returned to schools and deployed their lesson plans. They persuaded peers in school store-design and implement activities that challenged students to examine their communities' road safety problems.

The result of this stage was found to be a lack of a commitment and supported funding to complete students' plan .This step was revised by using a coaching and mentoring system, as well as matching an external funding to support the plan.

Step 3: Teachers with students collected evidences of learning progress in a digital format, such as still picture, audio and video recording by a mobile device. Later, all the digital archives were put together in digital storytelling format and published to the community learning web site.

The result in this stage was found that community platform is not user friendly for novice members. Some complicate functions such as VDO upload, security, and accumulated members' scores became an obstacle to this type of open community. The platform was finally re-designed to a simple, easy to use, and administered by the researcher team, in replaced to the previous community platform.

1.3) An establishment of a learning community in a ubiquitous environment.

The final stage of the framework focused on establishing a learning community via a ubiquitous learning approach. The Social Network Analysis was administered to invited students' network to an Appreciative Inquiry (AI) Blog in order to expand to a ubiquitous learning community.

The result at this stage was found to be an incompatible technological issue, result to an obstruction for non-members (who were not familiar with the technology) to participate in this learning community. A face-to-face mode of group collaboration and discussion to storytelling cases was altered to an online AI Blogging. The discussion activity was recorded and later uploaded to the community blog.

## 2. Effect of interactive media to social awareness

The interactive media was introduced to 68 teachers from 25 schools and 124 students located in the central part of Thailand. Ten out of twenty-five schools involved with the road safety community issues and uploaded the clip of activity in a storytelling format.

Questionnaires were administered to two sampling groups.
1) Students, sampling in one school, to assess their opinions on road safety social awareness, and
2) A group of general participants in a community, to assess their opinions on road safety social awareness.

**Table1:** Students 'opinions toward road safety social awareness

| Groups of items | *M* | *SD* | Meanings |
|---|---|---|---|
| 1. Receiving stage(Awareness) | 3.84 | 1.16 | Agree |
| 2. Responding stage | 3.58 | 1.12 | Agree |
| 3. Valuing stage | 3.29 | 1.20 | Neutral |

A five Likert-type scales of students' opinions toward road safety social awareness in the classroom were 1=disagree, 2=somehow agree, 3=neutral, 4=agree, and 5=highly agree. The samplings were asked to respond to 15 items based on 3 issues of pedestrian awareness, passenger awareness, and driver awareness to the road safety issues, which represented 3 levels of the affective domains:

receiving, responding, and valuing stages. The results shown in table 2, were found that the responses were in an agree level at the receiving and responding stages (Table1); ($\overline{X}$ 3.84, SD 1.16; $\overline{X}$ 3.58, SD 1.12); and neutral in the valuing stage ($\overline{X}$ 3.29, SD 1.20).

**Table 2: Demographic**

| Gender | No of respondents | Percentage |
|---|---|---|
| Male | 23 | 52.30 |
| Female | 21 | 47.70 |
| **Total** | **44** | **100.00** |
| Status | | |
| Teachers | 16 | 36.40 |
| Students | 15 | 34.10 |
| Others in community | 13 | 14.50 |
| **Total** | **44** | **100.00** |
| Age | | |
| Under 25 | 24 | 54.50 |
| Between 25-35 | 10 | 22.70 |
| Between 35-45 | 7 | 15.90 |
| Between 45-55 | 4 | 9.10 |
| Above 55 | 2 | 4.50 |
| **Total** | **44** | **100.0** |

There were 44 respondents; 52.30 % was male and 47.70% was female. Majority of respondents were teachers (34.10%). About half of the respondents were under 25 years old (54.50%), only a few was 55 years old (4.5%). (Table 2)

**Table3**: Opinions to the road safety social awareness in a Ubiquitous Learning Community

| Items | M | SD | Meaning |
|---|---|---|---|
| 1. Receiving stage (Awareness) | 4.57 | 0.50 | Highly agree |
| 2. Responding stage | 4.60 | 0.50 | Highly agree |
| 3. Valuing stage | 4.48 | 0.63 | Agree |
| 4. Organize stage | 4.47 | 0.50 | Agree |
| 5. Characterization | 4.48 | 0.55 | Agree |

A five Likter-type scales of opinions to the road safety social awareness in a ubiquitous learning community were 1=disagree, 2=somehow agree, 3= neutral, 4=agree, and 5=highly agree. The samplings were asked to respond to 25 items based on 3 issues of road safety, which represented levels of the affective domains: receiving, responding, valuing, organize, and characterization. The results showed in Table 3; the samplings responded to the road safety social value at the high level of receiving and responding stages ($\overline{X}$ 4.57, SD.50 ; $\overline{X}$ 4.60, SD.50); meanwhile they responded only agree to the valuing, organizing and characterization stages ($\overline{X}$ 4.48, SD .63; $\overline{X}$ 4.47, SD 50, $\overline{X}$ 4.48 SD 55).

## Discussions

The effect of interactive media to a social awareness of students and people in the community was found to be at a receiving and responding stage, which went beyond the expectation of this study (receiving level). The affective result at these stages was because the active involvement of students to their own community road safety condition; together with social network in the community, they learned and shared experiences in a "cool" media. As stated by McLuhan that a "cool" media encourages the interaction of users; while the "hot" one does not leave so much to fill in or complete by audiences. Interactions with technologies allowed for active user control, yield an ability of users to participate in the creation or modification of a medium. Interactive media was not necessary to be mechanistic, yet invited and increased a level of collaboration and interaction (Margarett, 1998).

The interactive media for a learning community in a ubiquitous environment are discussed as they were in favor of an arousing affect to a road safety social awareness accordingly:

An interactive classroom media such as book integrated with Augmented Reality technology help increasing level of interactivity as a mechanical arousal. The books suggested activities that brought students to be involved with a real community road safety issue. Moreover, the simplest way that initiated an interactive class environment was a game-based learning, instead of a passive content transmitted by teachers.

Wikipedia Road Safety integrated lesson plans encouraged teachers to lead students into an authentic task and being part of the community problem solving. With a challenge-based learning approach and self-learning materials collection supported, students, teachers and community together learned and explored community's road safety (social awareness) issues. All lessons learn were shared among teacher network members. Forming a learning community was a major task to get members' emotional involvement; contents provided in the community web site for members to collaboratively learn, gave a prior cognitive process in which a variety of content discriminations would be made and examined for their value and weighted for their contributions (Brewin, 1989). Coincided with Lerner and Keltner (2000), they stated that affect can be both pre and post cognitive, with thought being produced by initial emotional responses and further affect being produced by thought.

Furthermore, "An Accelerate Teacher Training Network Program" in-services and pre-services Teacher Training, known for the most influencing group to the future of Thai youth, were initially offered to the volunteer teacher groups. Teachers were encouraged to deploy "A Challenged based-Learning", approach in their lesson plans, that required students to explore their community problems, discussed and found ways to actively involved with the issues. Involved with their community, students learned with an authentic task, and were formed a public mind; as teachers performing as a coach in a real world. Evidences of the works students and community together accomplished were digitally collected in a VDO, with a technique of storytelling.

Later, students and community spreading out the stories by telling and responding to each other in a E-Word Of Mouth (E-WOM) fashion, from anywhere and anytime, by any handheld or any computer devices. Ubiquitous

learning community has been established with a support of a community platform (system), and via a RSS to a widely known social network --  Facebook,  which also allowed easy access from all types of computer devices; notebook, tablets, pad or smart/mobile phone.  The Ubiquitous computing as known for itself can be a permanency, encourage the learning process to be taken place in a contextual situation (Chen & Kao, 2002). Learning could happen all around the learners, without being conscious of the learning process.  Communities could connect and share experiences with a digital storytelling and react with a positive regard on an appreciative inquiry blog, or a virtual learning center.   A persuasive video, as it has been said, was more likely to produce attitude change when post-viewing discussions were held (Zimbardo& Leippe,1991), along with arousal and technique of self-reflection; it was postulated and confirmed by the study that could get members sense of social awareness.  This technique is relevant to Bednarand Levie, (1993) who confirmed three approaches: providing a persuasive message; modeling and reinforcing appropriate behavior.

## Recommendation for a future research

According to the framework of interactive media of from "Schools to Community", learning community has been getting connected throughout Thailand.  The corner stone of the white-road social value was established and will gradually strengthen the quality of life to be ready to the ASEAN community.  The front road of Thailand will, in the year 2015, connect to the ASEAN community.  Social science studies and this research found that interactive media were an ability of computer devices and software especially in a network environment that could encourage an interaction between users at the end of the computer terminal.  Thai learning community, based upon techniques of "Challenge-based Learning", "Digital storytelling", and "Appreciative inquiry", were methods to deliberately share persons' values and thoughts that effected to users' affect.  Further a research should be continued on the advantageous of communication via interactive media for One ASEAN multicultural diversity awareness.

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