

# Mindfulness Enhancement Model Using Feedback Online Diary to Observe Oneself

Siwapakorn Dhanadhiwat<sup>1\*</sup> Somparn Promta<sup>2</sup> Chatchawit Aporntewan<sup>3</sup>

1. School of Technopreneurship and Innovation Management, Chulalongkorn University, Phyathai Rd., 10330, Bangkok, Thailand
2. School of Philosophy, Chulalongkorn University, Phyathai Rd., 10330, Bangkok, Thailand
3. School of Mathematics and Computer Science, Chulalongkorn University, Phyathai Rd., 10330, Bangkok, Thailand

\* E-mail of the corresponding author: [siwapakorn@gmail.com](mailto:siwapakorn@gmail.com)

## Abstract

In everyday life, facing too many problems has to draw us from being perfect human. So, awareness is necessary to protect one's life to have a balance livelihood. Mindfulness is working with everything in every moment happening in our life. Being conscious of our thoughts to refrain from bad deeds while holding on to virtues with attentive consciousness of good or bad consequences is regarded as a way of mindfulness training which can be practiced in daily life. This paper would like to propose a mindfulness enhancement model using concrete tool with education theory of Cognitive Constructionism and Learning Diary on Artificial Intelligent (Expert System) infiltrating the feedback of Dhamma, morality or remarks to individual to practice and observe oneself.

**Keywords:** Online diary, Expert system, Mindfulness, Innovation, Self realization

## 1. Introduction

Today, the enormous changes of society, environment and technology are involving in every today life; some in physical, some in living, and some in relationships among individual until social level or even mental health and moral view. Thinking process with dress up of human beings becomes their behavior or character; however, lay or worldly persons can hardly avoid that dress up. Living with mindfulness has become the acceptable teaching today with the objectives of knowing things as they are, not as we want.

Mindfulness can be called as Earnestness or Heedfulness, which creates systematic thinking, calmness, awareness of meritoriousness or sinfulness. In sum, it is a thinking process that well facilitates our daily living. Being occasionally mindful, if persistently exercised, could be a means of self-development and lead to a society where everyone lives together peacefully. Often, we lose control of consciousness and realize it later. We repeat it over and over again in the same or similar occasions and make mistakes by not reflecting on ourselves. Losing consciousness could possibly occur in both pleasant and unpleasant conditions.

The simple ways to evaluate that mindfulness training can increase a person's happiness are, for example, seeing that people around us love us more, possessing less negative emotions and having a happy family filled with increasing virtues. When practicing mindfulness, a person will be able to open up their hearts to listen to others and capable of conducting good deeds. Thus, self-assessment is the best method since being happy or sorrowful can be realized by ourselves. As a result, discovering oneself is necessary for the initial self-development process which leads toward a happy and mindful living. Countries with the highest Gross National Happiness score differentiate merit and demerit for children and allow them to grow up the way they are. This begins by asking children self-discovery questions to find out what they actually like while training them to neither harm others nor incline toward sinfulness.

One of the simple self-discovery and mindfulness training methods is to write a personal diary which is a way to loyally examine oneself. Obtaining virtuous insights from persons of knowledge via Dhamma media to enhance cognitive efficacy, as well as contemplating progress to increase virtues and control or reduce unwholesomeness to enhance cognitive efficacy can help strengthen mindfulness training

Mindfulness training can be carried out in several ways. The most primitive method is to learn directly from the masters. This method is suitable for small community that has temple as a community center while urban society may not greatly benefit from this method. This research is based on the hypothesis that urban society needs to have another method of mindfulness training, a model which is proposed in this research. In this regard, the analysis study of a person's mental conditions is separated from mindfulness training. Mental conditions analysis is a primary process for a person to obtain in-depth information about his or her mental states. As a result, such information is analyzed in relationship with its management approach. This management method is called mindfulness training.

In addition, this research presents a model on Expert System. The advantage of this model is the application of technological innovation and modern tool on the study of religion, morality and psychology for the purpose of mindfulness training. It also employs words of recommendation and teaching that enhance real life learning participation and enable users to be attentively aware of their emotions. This model leads toward the development of emotional and behavioral well-being, as well as the ability to recognize other people's values. This will eventually leads to Collective Wisdom which serves as a driving force to develop a country based on the Right Development approach.

## 2. Defining Mindfulness

Mindfulness means being constantly aware of what you are thinking, what you are doing and the consequences of such thoughts and actions. Mindfulness is a highly benevolent principle which constantly awakens a person. Practitioners who incorporate mindfulness in worldly living normally possess better systematic thinking process. They are able to concentrate when performing certain tasks, maintain moderate emotions and better control anger, stress or sorrow. Mindfulness can be practiced and, if exercised long enough, could facilitate the "realization of truth." Mindfulness is a moral that can be created from a controlled and stabilized mind which can be achieved through several methods. In Buddhism, these methods include insight development, prayers and meditation. However, a simple method for ordinary persons living in a secular world is self-awareness training, which means to avoid factors that stimulate emotional infatuation and attentively live with wisdom while not falling victim to the world. It also refers to rationalized personal actions and reactions to certain circumstances without disturbing others (Promta & Thomyangkoon 2009).

Thich Nhat Hanh (Thich Nhat Hanh 2009) once said that, "Several large companies invest tremendous amount of money in research and development for the sake of their business growth ... likewise, to build a business of mindfulness, you must invest in wisdom development which will protect and guide you and your business on the right path. ... Mindfulness needs to be practiced and trained by ourselves." Mindfulness training can begin within a person and his or her family first and later expands to a larger society as a collective effort. This will create collective pleasant emotions which are beneficial to the community. The basis of mindfulness and happiness is the Five Rules of Morality (five precepts). We should ask ourselves, "what poisons have we put into our body and soul today." In addition, Thich Nhat Hanh referred to mindfulness development by saying, "If you get lost in the forest in the middle of the night, you could follow the North Star to seek the way out. You follow the North Star to go home, not to reach the North Star. Mindfulness training is the same as the North Star. We do not need to practice it perfectly. The principle of mindfulness training is a navigator, telling us when we are on the right path and facilitate our exercise" It shows the relationships among personal matters, mental and worldly peacefulness (Dalai Lama 2009). Art-ong Jumsai Na Ayudhya reflected on the importance of realizing your true self by saying that, "we have successfully built spacecrafts to travel to Mars, but human beings are still incapable of reaching even a few millimeters of their minds. Then, why would we want to travel so far away? ... We must teach people to reach deep down inside their minds in order to discover truth and morality, and reduce lustful desires for a peaceful living (Art-ong Jumsai Na Ayudhya 2010). As Greek philosopher Socrates once said, "An unexamined life is not worth living." Life is divided into two sides; the light side or the awakening and happy side, and the Dark Side or the Suffering side (Promta & Imtiyaz 2008)

The way in which Buddhists can examine their lives can be measured from three factors: 1 merit or virtuous principles increment, 2. the functions of Four Noble Truth, 3. the states of Right Mind. In other

words, it is an examination of the Three Studies (morality, concentration and wisdom) or the Three Merits (alms-giving, morality and prayers) focusing on external factors of laymen. (พระพรหมคุณาภรณ์ (ปยุตโต .อ .ป), 2535, 2553)

### 3. Mind and Emotion in Buddhism

at various levels of coarseness depending on a person's sensing degrees. This learning method must be carried out simultaneously with the act of doing in order to better observe the abstract ideas mentioned before. Abhidhamma is a study that instructs a person to examine truths presented in Buddhist doctrine from self-practice. It is therefore based on scientific principles of experimentation and observation. Thus, practicing self-development requires the employment of developed wisdom to examine real life states to review and improve certain abilities. The analysis of daily phenomena consists of two elements: nature, which is the perceiver, and nature, which is being perceived, to perceive the existence of all things. In conclusion, rationally directed perception must include 1) the perceiver and 2) the perceived or perception. The former is called "the mind" and the latter is known as "emotion," which together form a principle of "mind realizes emotion," with mind meaning the perceiver and emotion meaning the perceived. Therefore, self-development learning must be practiced in parallel with mindfulness training. In turn, mindfulness training must significantly stress on "doing" in order to create perception of real life experience referred to as mindfulness, which has a primary meaning of being aware. Learners are responsibility to learn, examine and verify mental and life phenomena by developing appropriate states of mind for certain situations.

Mind is also mentioned in the Sutta in the form of awareness or perception with a focus on mind training to achieve the state of balance. The study of the mind stressed by the Buddha is the same as that of today's psychologists: to study how a person can benefit the most from observing the mind. This approach particularly focuses on empirical aspect of the mind which is thoughts occurring in our minds and can be equally sensed by ourselves. Mind study, thus, employs a thorough observation of thoughts and learning to attentively suppress, restrain or induce them toward meritorious and peaceful life. It can be concluded that sensible thoughts grows from the mind. Human's perception also consists of subcategories; starting from pure perception which is a perception that draws no causative effect upon a person's cognition, for example, to see a rose and perceive it simply as a rose. The next step occurring in a normal person is called "impure perception," which is a perception that has causative effect upon a person's cognition as well as positive and negative actions. In Buddhism, it is called "speculation." For instance, the sight of the same rose may inspire a musician to compose a song, invoke a heart-broken lady to think of her ex-lover.

Speculation or dress up is divided into two parts: positive tendency (merit) and negative tendency (demerit) which corresponds with impure perception intuitively occurring at birth. The delicacy and complexity of a person's perception vary from one another. The different details in a person's life correlatively affect reactions to the circumstance and are expressed in their personalities. In real life, we may find that these steps occur almost instantly. This shortcut training method is called mindfulness-regulated approach. Within a short transitional period prior to the transformation of pure perception into impure perception, individuals should consciously remind themselves to be aware of this phenomenon. Mindfulness will assist individuals to attentively pass through this process with wisdom, as mentioned in a Buddhist proverb, "Mind leads the world."

Scientific study normally focuses on the phenomenon of what is being perceived but often disregards the study of nature which is the perceiver. Such assumption leads to this research which aims at studying the nature of the perceiver to find out how training and strengthening of the perceiver (the mind) can bring about awareness of the perceived (emotion) that causatively affects a person's thoughts and behavior to maintain of a pleasant life and peaceful society. This research is based on emotion psychological concepts and Diary method which transforms abstraction (a sight) to concrete object (a diary).

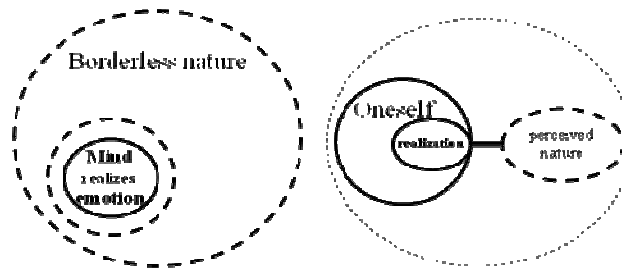


Figure 1. A Person's Mind: Realizing Emotions When They Arise and Fall (ระวี ภาวิไล, 2548)

A person's emotions and thoughts are the perceptual appearance of the minds in daily living. To be familiar with, realize and comprehend various types of mind, one should begin with following his or her own thoughts and emotions on a regular basis until it becomes a habit. The nature of the mind always correlates with its social environment or surrounding people whose perception and cognition arose from such emotions. Mind contemplation can be classified into three categories: (ระวี ภาวิไล, 2548)

1. Neutral Mind
2. Pleasant Mind (Merit)
3. Unpleasant Mind (Demerit)

*Neutral Mind* can occur in both pleasant and unpleasant states, for example, emotional effect, emotional remembrance, emotional contemplation and emotional desire, etc.

*Pleasant Mind (Virtuous Mind)* should also consider whether such state of mind is complemented with wisdom or not, for example, right speech, moral shame, greedlessness, non-anger or compassion, etc.

*Unpleasant Mind (Non-Virtuous Mind)* is, for example, muddling, greed, jealousy and frugality, etc.

#### 4. Mind and Emotion in Psychology and Biology

Emotion is an internal feeling that arouses a person to do or change within himself. It may be satisfactorily feeling, unsatisfactorily feeling or a mix of both. Emotion is not static: it is malleable and changeable all the time (same as the mind which is constantly pliable). From the meaning and nature of emotions, psychologists regard that the elements of emotion and human communication can be divided into three states (Baron 1998)

1. Cognitive states – cognitive explanation, such as, anger, disgust, joy and pleasure, etc. Therefore, to communicate and describe cognitive state, an explanation on the mechanical function of the mind and the way in which humans receive and manage information as well as the use of memories should be examined.
2. Expressive behaviors – behavioral explanation symbolizes the expression of internal states, for instance, when a person feels happy, he or she expressed it with a smile, or when a person is angry, he may stamp his feet or hit things. This theory explains the types of behavior, the origin and development of behavior as well as the relationships between one behavior and another behavior, feeling, thought or trait.
3. Physiological reactions – Physical explanation, such as an increase of heartbeat when a person feels excited or shocked, or deeper and slower breath when feeling calm, etc.

In Psychology, it is regarded that human beings have the mental and personal side of their emotions. Evaluating emotions, such as, anger, fear or greed, is difficult to experiment. The study of emotion, thus, makes inferences from expressive behavior by defining behavior according to certain emotion which is expressed, but fails to identify the shape or figure of it.

Based on Behavioral Psychology, in days-to-days life, a normal person cannot perceive phenomena occurring at every moment, but he or she can rather perceive the overall emotional outcome of the incidents or situations they are facing (Lopatovska & Arapakis 2011) The studies of emotion theories draw no corresponding conclusions regarding the nature of emotion and the relationship of emotion arousals. The study of emotion can be divided into two parts: the first is the study of emotion which relates to voluntary vs. involuntary thoughts, conscious vs. unconscious thoughts or thinking vs. decision and the second

stresses on somatic factors to describe emotional expressions without going through decisive thinking process (Zajonc 1984).

In Biology, it is believed that habit, emotion and behavior derive from genetic predisposition (Beatty *et al.* 2009). This premise is used to explain that habits are predispositions of temperament which root in genetic-based neurological structure or brain activity. The brain is a factor behind mental process which also means that human's thoughts, emotions, behaviors and experiences toward the surroundings depend on the brain which is determined by genetic codes. Western scholars indicate that 80 percents of human habits come from genetics. This type of study is called Communibiological Paradigm.

Table 1. Sample Methodology for the Study of Emotion

Method	Modality	Advantage	Disadvantage	Example of Studies
<i>Neuro-physiological</i>	- Physical reactions, e.g. heartbeat rate, brain wave, blood pressure, etc.	<ul style="list-style-type: none"> <li>- Capable of detecting changes occur within short interval</li> <li>- Cannot be counterfeited</li> <li>- Cannot be observed by other methods</li> </ul>	<ul style="list-style-type: none"> <li>- Inaccuracy of measurement tools</li> <li>- Distortion to focus on physical matters rather than emotions</li> <li>- Effects of external surroundings</li> <li>- No scales to measure each type of emotions</li> <li>- Require expertise and specific tools which are expensive</li> </ul>	(Wilhelm <i>et al.</i> 2006), (Mooney <i>et al.</i> 2006), (Chandra <i>et al.</i> 2005), (Bamidis <i>et al.</i> 2004), (Scheirer <i>et al.</i> 2002)
<i>Observer</i>	Expressions, e.g. facial-body expressions, verbal expressions	<ul style="list-style-type: none"> <li>- cross-cultural universals</li> </ul>	<ul style="list-style-type: none"> <li>- Effects of external factors</li> <li>- Pretentious expressions</li> <li>- Unable to interpret from the senses of the observer</li> </ul>	(Arapakis <i>et al.</i> 2009), (Tsalakanidou <i>et al.</i> 2007), (Morency <i>et al.</i> 2007), (Castellano <i>et al.</i> 2007)
<i>Self-report</i>	Diaries, questionnaires, interviews	<ul style="list-style-type: none"> <li>- No specific tools required, inexpensive</li> <li>- Not wasting on human resources, space and time</li> <li>- Easy to understand and comfortable</li> <li>- Suitable for situations where researchers can hardly access</li> </ul>	<ul style="list-style-type: none"> <li>- Voluntary of respondents to provide loyal information</li> <li>- Respondents may be personally biased</li> <li>- The results may be different and incomparable</li> </ul>	(Gwizdka <i>et al.</i> 2009), (Mentis <i>et al.</i> 2007), (Tracy <i>et al.</i> 2009), (John <i>et al.</i> 2008), (Travers 2010), (Avina 2008)

## 5. Learning Theory: Cognitive Constructionism

Constructionism is an education theory developed by Professor Seymour Papert from M.I.T. It is based on the premise of the Theory of Knowledge. This theory regards learning as a reconstruction rather than as a transmission of knowledge, and therefore, focuses on personal knowledge construction. Constructionism proposes that productive learning comes from a concrete creation of personal knowledge. Individually created knowledge is long-lasting and meaningful to the learner who can further transmit such knowledge to others, creating never-ending knowledge database. It suggests that using technological tools is one of the appropriate approaches in making tangible objects out of the learner's knowledge. It aims at "Learning to Learn" and doing things in order to learn within a context suitable for human development. It is the approach which integrates processes of each individual's reaction to the world around them. Constructionism is assuming that knowledge comes not only from teaching but also from doing (Learning by Doing) in which learner can concentrate and think to construct self-meaningful knowledge.

Therefore, Constructionism stresses on the importance of instructional media which allow learners to construct their knowledge and learn from direct experience. Educational innovations that have corresponding features are web-based learning and media symbol system which facilitate the construction of information database, for example, in the form of texts, pictures, sound and motion pictures, etc (Flavell 1979). Writing diary is one of the strategies that help construct and develop ways to control and regulate a person's thoughts since writing is an intra-communication. Diary is a form of writings that allow the writer to reflect their learning and at the same time learn from what is written down (McIntosh & Draper 2001). It is a way of self-communication whether intentionally or unintentionally. In turn, when individuals communicate with others, they must simultaneously communicate with themselves. Self-communication instantly occurs as soon as people think and the results of such thoughts lead to the expression of human behavior. Thus, self-communication is one of the methods to deliberate mindfulness.

In addition, information technology has built channels for ideas interaction and created active learning participation and learner-centered platform. As a result, Constructionism is divided into four major steps:

1. Explore, to comprehend new and unknown matters, as well as absorb and store them as new knowledge.
2. Experiment, to adjust differences and get a grasp of what to do with these new matters, such as, asking others. During this step, trials and errors may involve in order to acquire experience.
3. Learning by doing, to get first-hand experience with the surroundings which are meaningful to them and create an exclusively self-constructed knowledge.
4. Doing by learning, once clearly see that doing can enhance learning, they will develop more effective learning behavior and be able to attentively think by themselves and adapt to their surroundings (society) leading to the development of the so-called "powerful learning."

In summary, Constructionism is a way of learning in which learner learn from reconstruction (in this case, writing diary). Learners carry out learning activities (self-realization) by doing tasks that are meaningful to them. Learning system consists of three elements: 1) Learners directly experience and review themselves (task- and self-construction) 2) developing effective learning according to individual interests or keenness (individual feedback) 3) using tools to accommodate learning activities (Mindfulness Enhancement Prototype). Once begin, learning will occur automatically and will be powerful enough to drive individuals to achieve their goals: to attentively experience things in real life wisely and flourish virtuous thoughts. As a result, providing opportunities for learners to begin self-taught process is of greatest importance.

One of the tools to create participation-friendly learning environment is e-learning, which means instructional activities that occur in synchronous and asynchronous mode by using electronic instructional software to disseminate information on a systematic network. There are also teaching tools, such as, diary to record personal experience and the knowledge obtained or reflects their opinion. Diary also provides retrospective feature in which learners can trace back their intellectual progress and allows instructors to access them. The advantage of 2-way communication of e-learning is Feedback which covers various approaches, for example, automatic feedback, student-controlled reception feedback, descriptive feedback and non-descriptive feedback. Base on the literature review, descriptive feedback can enhance instruction effectiveness and yield higher learners' efficacy results. (Krumboltz *et al.* 1962); (Hope 2006)



Another advantage of e-learning is applying with Symbol Systems. Symbol means something which is used to represent something else and could be both abstract and concrete forms. In Philosophy, it is generally defined that everything in nature or even in the universe can be replaced by symbols. Symbol system developed by Solomon explains the effect of media on learning. In symbolic communication, the explanation is often made in correlation with learning and cognition as well as the different levels of mental delicacy and mental skills of learners (Salomon & Clark 1977) Symbol system correlates with researches on aptitude-treatment interaction (Cronbach & Snow 1977). The core concept proposed by Solomon is that effective media must be appropriate for learners, content of knowledge, and tasks or extra activities (Salomon 1979) Symbolic communication is widely used in religion to better explain religious abstractions in tangible forms which are easier to comprehend, for example, the consequence of good and bad deeds, emptiness, instability, awakening or world creatures.

## 6. Diary Method of Data Collection

Diary has been used in research process to collect data in social science since 1920s (Tim & Nick 2007) to be self-report instruments used repeatedly to examine ongoing experiences, offer the opportunity to investigate social, psychological, and physiological processes, within everyday situations in which these processes unfold. (Niall *et al.* 2003). Benefit of data collection using diary is that they permit the examination of reported events and experiences in their natural, spontaneous context.

Diary Study Design reflects the efficiency of data, which depends on the types of questions appropriately. Three broad types of research goals can be achieved using diary designs: (a) obtaining reliable person-level information; (b) obtaining estimates of within-person change over time, as well as individual differences in such change; and (c) conducting a causal analysis of within-person changes and individual differences in these changes. Normally, the questions have to recall back to the short period of time in the past (days, weeks, months), but not proper to study in longer period of time to avoid data bias or error. Hence, there are 2 types of research question; one is the time course (longitudinal design): how does a typical person change over time, and how do people differ in change over time. Another is within-person process: what is the within-person process for the typical person, and how do people differ in these processes. After identifying the questions, researchers are faced with concrete diary design. Diary studies have often been classified into the two categories of (a) time-based design (interval-, signal-), and (b) event-based design. Time-based design is appropriate with within-person process and can be designed as interval-contingent design, requires participants to report at regular, predetermined intervals but signal-contingent designs rely on some signaling device to prompt participants to report at fixed, random, or a combination of fixed and random intervals. Event-based design requires participants to provide a self-report each time the event in question occurs. This design enables the assessment of rare or specialized occurrences that would not necessarily be captured by fixed or random interval assessments. (อวยพร เรืองตระกูล & อรรณมา เจริญสุข, 2010)

This paper uses time-based design to investigate how a typical person changes over time if practicing awareness and mindfulness by reviewing their behavior and emotion in proposed period of time. This is consistent with the study of (Niall *et al.* 1989) to explain that the study of emotion and stress with-in person during a day is the most suitable to time-based design.

Diary Data Analysis is repeated measurement of within-person data that cannot be assumed to be independent, thus simple statistical methods of linear model together with empirical study to be considered (ปิยวรรณ พันธุ์มงคล, 2553). Moreover; technology of Expert System is applied to simplify the complexity of reporting and feedbacks their evaluation with positive knowledge in forms of poem, doctrines, saying, proverb, or motto to motivate self development at the same time. From the literature review, writing diary will assist learners to control their cognitive process which covers action control, progress examination and evaluation (McIntosh & Draper 2001). Such thinking process is a strategy that creates and develops mental strategy which regulates and controls learning since learners normally conduct preliminary self-communication. When interpersonal communication occurs, a person simultaneously carries out within-person communication which is another method to recall consciousness.

Diary method employed in mindfulness training was exemplified in the work of Buddhadasa Bhikkhu (a

famous Thai Buddhist scholar and thinker monk), Dhamma Practice Diary, “We must remind ourselves. No one else can do so since true selves lie deep down inside where no others can reach ... We must take oath to train ourselves and improve each day. As a result, we will be able to finish a number of tasks swiftly. It is a training that yields excellent result. Ideological Buddhist Doctrine which is the thought about certain knowledge acquired each day should be summarized into short and precise principle and recorded in diary everyday. This is a surprisingly productive method to make your brain wiser and stronger. Writing a diary is also a way to keep records of your life history... During the first few days, there may not be anything to write about. However, if you keep writing for merely 4 or 5 days, you can be assured that your brain will come up with more and better stories to record everyday. Within a few months, this diary will be by all means a valuable item for you. Philosophers around the world have ensured that this is a wise method of brain training. It is the best and easiest way of self-training unbeatable by other methods.”

## 7. Artificial Intelligence: AI

The development of computer system to possess humanlike behavior which is compared to the concept of cognitive learning in the sense that human thoughts are compared to data processing of computer system: perception, filing and retrieval, through computerized logical process to express human’s interactive ability. The advancement of AI allows e-Learning to be incorporated in other types of learning tools, such as, multimedia games and diary. This gives rise to Artificial Intelligence learning systems-AILSs which possess certain features and functions, such as, on-line testing and automatic feedback, individual learning course management, keeping learner’s records to use as reference and develop lifelong learning experience.

AI possesses four important characteristics (Woolridge & Jennings 1995) which are Autonomy, Proactiveness (goal-directed actions), Adaptability, Reactivity and Sociability (Interfacing / Collaboration / Negotiation). AI is used in Personal assistants ex. mail filter & classification system, information filter, Visitor hosting system (ex. hosting & scheduling of activities, meeting, visitors’ personal agent at Carnegie Mellon University), Data mining, Air/Land traffic control, Diagnosis. When AI is applied in education to assess learner’s desire, adjust the content and appropriate pace for instruction to represent social connection between learner and the agent, it is called Cognitive Science.

### 7.1 Expert System

Expert System is a form of AI programs employed in this research by simulating the capability of human experts to solve problems or make decisions (Jackson 1998). This type of system will summarize knowledge content and make learning suggestions based on the reference made from previous learning results. It is categorized as a problem solving program with knowledge-based systems referring to the role of a domain (body of knowledge) (Buchanan & Feigenbaum 1978; Giarratano & Riley 1998; Krishnamoorthy & Rajeev 1996; Negnevitsky 2002).

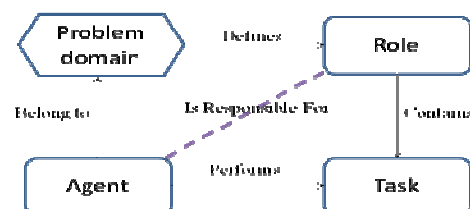


Figure2. Relationships between a Problem Domain, Agent, Roles and Tasks

Based on AI functional description, the word “intelligent” is presented in unconscious and non-biological forms. It is regarded as brain thinking, not mind thinking (Promta & Himma 2008)



In this paper, expert system is applied to diagnose the state of mind of users or learners each day, including select the proper feedback in term of specific teaching or doctrine to form positive thinking and mind. Once users or learners realize their state of mind, they also use this information to find the way to manage their own mind and trait in real life. This method is able to help enhance mindfulness at the same time.

### **8. Innovation and Innovation Acceptance**

The term innovation has its root from Latin word *Innovare*, meaning to make something new from knowledge, ability and creativity. One of the most important aspects in accepting innovation is its Absorptive capacity, which most people can assimilate with, but can neither understand nor use it as a ground for further innovation. Characteristics of an innovation affecting diffusion (Rogers 2003) are Relative advantage, Compatibility, Complexity, Trialability and Observability.

According to the study on innovation for the development of learner's thinking ability "thinking and learning and experimental," it is found that the form of innovation which should be promoted are Teaching through the four formal steps of the Noble Truth by using Think-Pair-Share technique and Real life Experiential Learning process through computer-based thinking skill lessons. One of the widely accepted learning innovations is the human values integrated instructional model to create not only great people, but also good people using education with character of right conduct, peace, truth, love and non-violence (Art-ong Jumsai Na Ayudhya 2003). Learners have to understand of who they are and what the purpose of their lives.

Consequently, creating innovation requires the measurement of acceptability. The model employed in this research is Technology Acceptance Model (TAM) invented by (Davis 1989) to testify whether the proposed technology is accepted by user. TAM takes into account two aspects: perceived ease of use (if the effort to use it outweigh benefit) and perceived usefulness (believe it help to perform task better). TAM is employed in many researches to testify the acceptability of software and information technological tools both in education (Masrom 2007) and business software (Hernandez *et al.* 2008). The results of the studies reflect that TAM can be used as a major factor to estimate the acceptability of software usage and is able to cause actual behavioral effect.

From the proposed model, it can be compared to online instruction to create Sufficiency Economy values which leads to behavioral change. This model suggests that proper method to instruct values and morality is to insert subject matters into overall learning process and direct learners to experience first-hand in daily life. It should also allow learners to reflect their opinion on the application of principles in real-life situations. The appropriate amount of learning time to create value and faith in order to induce behavioral change (treatment period) is approximately eight weeks (อมรรัตน์ เอยงาม & ปราวินยา สุวรรณรัฐโชติ, 2551). Data analysis approach employed in this research is pre- and post-learning achievement testing by using merit and demerit self-assessment. According to TAM Theory, mindfulness enhancement model assessment is carried out along with conducting focus group to evaluate user's satisfaction.

From the above theories leading to Conceptual Model of mindfulness enhancement as below,

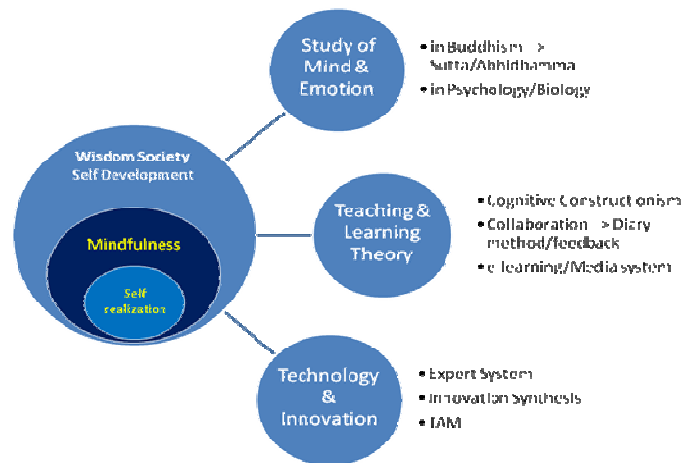


Figure3. Purposed Conceptual Model

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