An Information Literacy Initiative Adopting a Moral Philosophy for Cyber Space—Based on Yi Toegye's Neo-Confucian Pedagogy for Self-Cultivation of One's Mind and Heart—

Youngsoo Kim

This article presents an initiative for developing a guideline for information literacy education. Information literacy is considered an essential skill for citizens in a knowledge-based information society. One of the key issues in ICT education is online ethical dilemma, such as computer crimes in regard to the information and ICT technology. There has been a strong need for a moral philosophy for cyber space to be a framework for developing information literacy curriculum (Kim, 2002). Yi Toegye's teaching methodology for self-cultivation based on Neo-Confucianism is suggested as a theoretical foundation for information literacy guideline. Information literacy competencies and indicators are developed based on Toegyes' methodology for the investigation of principle as well as the steps of practical self-cultivation, such as 1) Broadly Study, 2) Accurately Inquire, 3) Carefully Think, 4) Clearly Discriminate, and 5) Earnestly Practice (e.g. Competency on Earnestly Practice: To understand and respect the ethical and socio-cultural aspects of information and to practice ethical attitude and behavior). Future agendas are: 1) how to develop cyber ethics adopting Toegye's principle of self cultivation; 2) how to elaborate Toegye's teachings and ideas to develop moral philosophy for cyber space; 3) how to promote a spiritual cyber culture.

Key Words
Cyber Ethics, Cyber Literacy, ICT Education, Information Literacy, Moral Philosophy for Cyber Space, Neo-Confucian Pedagogy, Online Ethics, Toegye, Yi Hwang.

Introduction

Educational environment in a knowledge-based information society has changed due to the increase of integration of ICT (Information and Communication Technology) in teaching and learning. Most countries in the world have attempted to adopt educational system to the information age by implementing ICT use in
schools. The goals of ICT use in schools are: 1) nurturing human resources needed in the knowledge-based society with self-directed learning skills and ICT literacy; 2) creating a desirable information culture for people without digital and cultural divides, and; 3) raising responsible and ethical cyber citizens in the global community.

As Rudestam and Schoenholtz-Read (2002) argue, the rapid growth of network-based online learning provokes online ethical dilemmas. According to them, ethical dimensions of information communication technologies are: 1) logical malleability, invisibility, and subsumption issues due to the nature of computer programming; 2) privacy, secrecy, and confidentiality caused by the information flow and access; 3) surveillance issue from the wireless communication by the penetration of wireless networks; 4) anonymity and personal identity issues from the virtual nature of online learning; and 5) ownership of intellectual property due to global networks, flowing information and online collaboration.

These ethical issues in online learning create negative and undesirable aspects of the information society such as, cyber crimes and unethical attitudes and behaviors in a cyber space. In the internet-based cyber space, computer viruses and hacking, violation of privacy, circulation of harmful information and pornographic images appear and rapidly diffuse due to the open and anonymous characteristics of the internet (Palloff & Pratt, 1999). In order to control these negative aspects of the information society, some related laws can be formulated and enforced. However, it is more important to nurture human resources with necessary moral maturity than to exercise anti-computer crime laws. Therefore, it is essential for developing ICT literacy to cultivate people's cyber ethics so that they become responsible users of ICT.

**Toegye's Teachings and Ideas based on Neo-Confucianism**

There has been a need for an alternative moral philosophy to contribute in resolving problems caused by moral deterioration in a cyber space (Kim, 2002). Neo-Confucianism, a moral philosophy of humanity can be an alternative theoretical framework to develop ICT literacy curriculum to cultivate spiritually and ethically sound cyber citizens.

Yi Hwang (1501-1570), often called as Toegye (pen name), is the great thinker, a teacher who pursued self-cultivation and the prominent Confucian scholar in Korea. Toegye's teaching focuses on his doctrine of "Learning as Self Cultivation of One's Mind and Heart." His learning principles of "self-cultivation of one's mind and heart" can be a guideline for constructing netiquette based cyber culture and ethical movement for cyber citizens in today's techno-material world (see Pictures 1 & 2).

Toegye Propounded a doctrine of Li (principle)-Ki (material force) dualism based on Chinese Neo-Confucianism by Chu His. His interpretation of the
li-chi dualism gained his fame in Korea and beyond. International Society for Toegye Studies has been established and there are chapters in USA, Taiwan, Japan, Germany, Hong Kong, China, Russia, and etc. As an ideal "sonbi", gentleman-scholar, Toegye sought the practical realization of his ideal and founded "Dosan Seodang (1561)," a private Confucian academy to nurture scholars of sound mind and heart. Toegye developed a practical teaching method aimed at personal cultivation and wrote 73 books and over 2000 poems (Gyongsangbuk-do/Andong City, 2001). [http://www.confucianfestival.org/main/toegye-main.html].

According to Toegye, there are two states of mind: the not-yet aroused state (substance, the nature) and the aroused state (function, the feelings). The not-yet aroused state, li issues the four beginnings - compassion, modesty, shame, and approving, then chi follows; The aroused state, chi issues seven feelings - desire, hate, love, fear, grief, anger and joy, then li mounts it. For Toegye, human desires are the flow of mind and desires are not the original condition of the mind; human desires arise from the mind as physically conditioned. Mind unites li and ki and combines/governs nature and feelings. The human mind is prior and human desires come later, the former is correct and the latter is wrong; therefore try to maintain the original human mind which is the mind of the Tao; consequently, it is necessary to control self-centered human desires (Jung, 1986; Kalton, 1988).

Toegye adopted the rules of the White Deer Hollow Academy in China by Chu His as a practical teaching method aimed at personal cultivation. In Neo-Confucian Academies, learning is a matter of learning the five instructions on human relationships:
1. Between father/mother and son/daughter*, there should be Affection
2. Between ruler and minister - there should be Righteousness
3. Between husband and wife - there should be Distinction
4. Between elder and younger - there should be Proper Order
5. Between friends - there should be Faithfulness
* [ ] Added by the author

In addition to the five instructions concerning the proper relationships, the five steps in the process of learning are the practical learning principles in Confucian academies in China and Korea (see [Table] 1).

In Confucian academies, the five relationships are the core in the Elementary Learning, while the investigation of principle and the steps of practical self-cultivation are the essential elements in the Great Learning. The concept of elementary and great learning is that there is the continuity of the learning process from youth to adulthood (Jung, 1986; Kalton, 1988).

For Toegye, "the four steps are the elements in carrying knowledge to the utmost, and among the four, "Careful Thought" is by far the most
1. Broadly Study
2. Accurately Inquire
3. Carefully Think
4. Clearly Discriminate

5. Earnestly Practice - Integrity and trustworthiness in speech;
   earnestness and mindfulness in deed
   - Restrain anger, block desires;
   - refer good to others, correct transgressions
   - Be correct according to what is right, and do not consider profit
   - Think only of seeking the Tao, and do not calculate accomplishments
   - What you do not wish done to yourself do not to others
   - When your activities do not succeed, reflect and seek the reason within yourself

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 weighty. What is the meaning of thought? It is seeking the matter out in one's own mind and heart and having a personal experience and grasp of it." Kalton interprets the concept of Toegye's Confucian learning such as, "learning is in this context is a spiritual project, and the essential exercise of the mind is not speculative knowledge but personal transformation through a profound personal understanding and appropriation of what is studied (Kalton, p. 108)."

It is interesting to know that there are common features between the maieutic method of Socrates and the steps of practical self-cultivation initiated by Toegye. Socrates (BC469-399) pedagogy is composed of five steps (James Dye- http://www.soci.niu.edu/~phildept/Dye/method.html, 1996):

1. Wonder - Pose a question (of the "What is X?" form).
2. Hypothesis - Suggest a plausible answer (a definition or definiens) from which some conceptually testable hypothetical propositions can be deduced.
3. Elenchus ; "testing," "refutation," or "cross-examination." - Perform a thought experiment by imagining a case which conforms to the definiens but clearly fails to exemplify the definiendum, or vice versa. Such cases, if successful, are called counterexamples. If a counterexample is
[Table 2] Teaching Methods of Toegye and Socrates

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<td>Broadly study</td>
<td>Wonder - Pose a question.</td>
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<tr>
<td>Accurately inquire</td>
<td>Hypothesis - Suggest a plausible answer</td>
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<td>Carefully think</td>
<td>Testing, or Cross-Examination</td>
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<td>Clearly discriminate</td>
<td>Accept the hypothesis</td>
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<tr>
<td>Earnestly practice</td>
<td>Act accordingly</td>
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4. Accept the hypothesis as provisionally true. Return to step 3 if you can conceive any other case which may show the answer to be defective.

5. Act accordingly.

[Table 2] shows the similarities between Socrates' Maieutic teaching method and Toegyes practical method of self-cultivation.

The commonality as shown in the [Table 2] might be due to the fact that both pedagogy of Socrates and Toegye are based on moral philosophy, although they evolved in the West and the East.

Information Literacy Initiative Adopting Toegye's Pedagogy for Self-Cultivation

Toegye's pedagogy for self-cultivation based on the teaching rules of the White Deer Hollow Academy in China can be a moral philosophy for developing ICT literacy curriculum. A concept of ICT literacy was first introduced in 1974 by Zurkowski, the president of the Information Industry Association in the United States of America. According to Zurkowski, information literates are people trained in the application of information resources to their work. Also, they have learned skills for utilizing the information tools and the sources in forming solutions to the problems (Spitzer, Einsenberg, & Lowe, 1998).

Since 1974, there have been national and local initiatives in defining information literacy as well as in developing information literacy competencies and standards (Shapiro & Hughes, 1996; California Academic & Research Libraries Task Force, 1997; SUNY, 1997; ALA & AECT, 1998; Marchionini, 1999; MOEHRD & KERIS, 2002). For instance, Shapiro and Hughes (1996) defined information literacy as a new liberal art that understands not only how to use computers and access information, but also how to critically reflect on the nature of information itself, its technical infrastructure, and its social, cultural and even philosophical context.

Also, California Academic &
Research Libraries Task Force (1997) defined information literacy as the ability to effectively identify, access, evaluate and utilize information in its various formats, and to choose the appropriate medium for communication. It also encompasses knowledge and attitudes related to ethical, social, and cultural issues surrounding Information and ICT (Spitzer, Einsenberg, & Lowe, 1998).

The concept of information literacy has expanded based on the definition by American Library Association and Association for Educational Communications and Technology (1998). According to ALA and AECT, an information literate person should be able to recognize when information is needed and to have the competencies in locating, evaluating, and using effectively, efficiently and responsively the needed information in decision making (ALA & AECT, 1998).

Marchionini (1999) advocates that to become intelligent and responsible citizens, citizens should expect basic rights as well as act responsibly in regard to information. For instance, "responsible citizens in information society must act ethically in several ways with respect to information: by contributing feedback to information providers; by practicing safe information seeking; by practicing positive communication (not passing misinformation, respecting the sensitivity of others, not spamming); by practicing sensible self defense; by giving credit and paying required fees; by promoting fee access to information; by avoiding addictive and wasteful behaviors, like surfing and cyber terrorism; and by evaluating and thinking critically about one's own needs, the information gathered to meet those needs, and how one's needs and information resources relate to the needs of other citizens (Marchionini, 1999, pp. 23-24)."

As the attention on online ethics increases, it is a very significant task to initiate information literacy based on a moral philosophy, such as Toegye's "learning as self-cultivation of one's mind and heart. Information literacy competencies and indicators suggested in the present article are developed based on the competencies, standards, and guidelines developed by several information literacy initiatives (Colorado Department of Education, 1996; SUNY, 1997; ALA & AECT, 1998; Spitzer, Einsenberg, & Lowe, 1998; Marchionini, 1999; Palloff & Pratt, 1999; Rudestam & Schoenholtz-Read, 2002).

Information Literacy Competencies

- **"Broadly study" Competency**

   To know the need for comprehensive information to answer the questions and to seek information needed from diverse information sources. Indicators:
   1. Recognizes the need for information to solve problems or questions.
   2. Identifies a variety of accurate and comprehensive information from various sources, contexts, disciplines, and cultures.
"Accurately inquire" Competency
To identify information that is appropriate to the need by proper questions.
Indicators:
1. Formulates appropriate and ethically sound questions based on informational needs.
2. Elaborate the questions following the change of informational needs.

"Carefully think" Competency
To develop proper information seeking strategies and to make a plan for locating the information
Indicators:
1. Formulates ideas for how to identify needed information.
2. Develops efficient and effective strategies for searching for information.
3. Plans a systematic as well as reasonable plan for locating the information

"Clearly discriminate" Competency
To critically analyze, evaluate, and verify information in relation to the need.
Indicators:
1. Critically evaluates accuracy, relevance, and credibility of information by comparing and contrasting sources and information relating to topics and questions to answer.
2. Competently distinguishes among facts, point of view, and opinions and knows how to examine the validity of these sources as well as when the facts and opinions can be used appropriately.

"Earnestly practice" Competency
To understand and respect the ethical and socio-cultural aspects of information and to practice ethical attitude and behavior in regard to information and communication:
- Integrity and trustworthiness in speech and earnestness and mindfulness in deed.
- Be correct according to what is right, and do not consider profit.
- What you do not wish done to yourself, do not to others.
Indicators:
1. Performs responsibly with respect to information by avoiding addictive and wasteful behaviors such as over-surfing, and cyber terrorism.
2. Respects the principle of intellectual freedom by encouraging others to exercise their rights to free expression and respecting others' ideas when working in groups
3. Uses information accurately and responsibly by integrating new information into one's own knowledge, produces information with ethics by utilizing appropriate ICT tools, and applies information creatively in critical thinking and problem solving.
4. Respects the principle of equitable access to information, information sources and ICT tools.
5. Uses ICT infrastructure, such as hardware, software, and networks,
ethically and responsively.
6. Applies principle of academic honesty in use of information and knowledge.
7. Respects intellectual property rights by avoiding plagiarism, giving credit, citing sources, and paying required fees for information.
8. Shares information and sources with others and contributes to group efforts.
9. Practices positive communication by respecting the privacy and the sensitivities of others, not passing misinformation, not spreading viruses, not spamming, and not hacking.
10. Respects others' ideas and views and acknowledges their contributions.

**Future Agenda**

There will be both opportunities and challenges for teachers to implement the information literacy initiatives adopting Toegye's practical method of self-cultivation. Toegye's pedagogy based on his own teaching practices gives a guideline for teachers' roles:
A teacher should be a friend of students.
A teacher should respect his/her students.
A teacher should be a role model for students' character building (beyond teaching knowledge).
A teacher should have an enthusiasm for teaching; if necessary, repeat lessons with elaboration.
A teacher should consider practice as an essential for learning principles.
A teacher should individualize lessons based on a student's level of current knowledge.
A teacher encourages a student to achieve the ultimate goal of learning that is self-cultivation of one's mind and heart (Jung, 1986; Kyngsangbuk-do/Andong City, 2001).

Future agendas for information literacy initiatives based on Toegye's Neo-Confucian teaching methodology are: 1) how to develop cyber ethics based on Toegye's principle of self-cultivation as a component of information literacy; 2) how to elaborate Toegye's teachings and ideas to develop moral philosophy for cyber space; 3) how to promote a spiritual cyber culture for creating a moral deterioration free e-learning community.

It will be a professional passion for researchers and practitioners in the ICT discipline to develop strategies to resolve the agendas, especially on ethical issues in today's cyber culture. This effort will contribute in nurturing ethical and responsible information user and knowledge producer.

**References**


Kim, Youngsoo. (2002). Learning as self-cultivation of one's mind and heart. Presented at the Association for Educational Communications and Technology 2002 International Conference. Dallas, Texas USA.


[Picture 1] Yi Toegye (1501-1570)

サイバースペースの道徳学を適用した情報リテラシーの提案—精神および心の自己修練のためのYi Toegyeのネオ儒教の教育学に基づいて—

金英洙

本稿は、情報リテラシー教育のガイドラインを開発するための提案を行ったものである。情報リテラシーは、知識に基づいた情報社会にある市民にとっての本質的な技能が考慮されている。ICT教育における重要な課題の1つは、情報およびICT技術に関するコンピューター犯罪のようなオンライン倫理のジレンマである。そして、サイバースペースの道徳学が情報リテラシーのカリキュラムを開発するためのフレームワークとして強く求められる。ここで、新儒教に基づいた自己修練のためのYi Toegyeの教育方法論は、情報リテラシーのガイドラインの理論的な根拠として示唆的である。情報リテラシーの能力および指標は、実際的な自己修練の段階（1）広く研究する、2）正確に質問する、3）注意深く考える、4）明白に識別する、そして5）熱心に実行するというような方法論（例えば、熱心に実行するうえの能力：倫理的および社会文化的な情報の慣習を理解し尊重し、倫理の姿勢および行動を実行すること）と同様に原理の探索のためのToegyeの方法論に基づいて開発されている。将来の研究テーマを提示すれば、1）自己修練のToegyeの原理を適用するサイバー倫理を開発する方法、2）サイバースペースのための道徳学を探究するためのToegyeの教えおよび考えを入念に作る方法、3）精神的なサイバー文化を促進する方法、になる。

キーワード
サイバー倫理、サイバーリテラシー、ICT教育、情報リテラシー、サイバースペースの道徳学、ネオ儒教の教育学、オンライン倫理、Toegye、Yi Hwang