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Research Article

Humanities 3.0 Era and Humanities Engineering

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Abstract: This challenging humanities research methodology, which can be conceptualized as "Humanities engineering," declares the beginning of the 3.0 humanities era. If traditional humanities was humanities 1.0, digital humanities, which actively attempted to recruit IT as a research methodology is 2.0, and humanities engineering that aims to view humans and society from a deeper and broader viewpoint than technology by taking the help of technology is humanities 3.0. Changes in social needs and requirements also reconfigure the role of humanities education. The twenty-first century talent is a self-directed learner who can produce knowledge based on given information and acquire wisdom in the process. The core of intellectualization is creative thinking that addresses information. All newness starts from what is old and familiar. Although technology looks at the future, thinking remembers the past. Reading, understanding, and analyzing the classics is what humanities education can do best. The goal of university education in the digital period is to cultivate the talent needed in the knowledge information period to strengthen humanities education. Humanities education helps us to proceed and maintain moral value as humans; it teaches us the expansion of thinking that sparks the commercialization of information.

Keywords: Humanities engineering, Humanities 3.0, Digital humanities, Humanities education

1. Introduction

The keyword of Korean capitalism in the twenty-first century is "neoliberalism." Neoliberalism, which presented the principles of market economy and free competition, was originally an economic theory that criticized the state's market intervention and emphasized market function and free private activities. However, it changed to mean a rather active intervention of the market in a national crisis—such as the Korean IMF financial crisis—particularly as the Myung-bak Lee administration established "practical government" as a national agenda, presented "MB No-Mix" that considered neoliberalism as the core, planned the ranking of universities and hierarchy of academia using a state-led top-down approach called "government funded university designation," and applied an economic principle to the educational policy. During the five-year tenure of the Myung-bak (MB) government, universities took risky chances on the management of quantitative indicators and the literature-, history-, and philosophy-centered liberal arts field, which had a relatively poor employment rate. As the employment rate was a major factor, they had no choice but to retreat when faced with the realistic threat of structural adjustment. Given that humanities education was the starting point of modern universities, attention needs to be paid to the decline of humanities education, as it is a postmodern university phenomenon. The decline of humanities education is already a global phenomenon. The percentage of humanities faculty at Stanford University is 45% of the total while the percentage of students is only 15%. At Harvard University, the number of students studying humanities has decreased by 20% over the past 10 years. The number of humanities majors at universities in the United States (U.S.), which were 14% of the total in the 1970s, has reduced to 7% recently and as of 2019, humanities research grants in the U.S. were less than 0.5% of the research expenses of science and technology fields.

In the new edition of Sociology of Education , Michelle Young discusses Richard Pring's argument, which states that since humanities education does not reflect the need of the time but only emphasizes individuals' emotional development,[1] it risks becoming part of the dogma of intellectualist education. In 1995, in the book Closing the Gap: Liberal Education and Vocational Preparation, Richard Pring saw that an individual's personal life cannot be separated from his political and social life and accordingly, criticized humanities education that usually stresses individual development without considering economic usefulness, social adequacy, and political influence. School subjects should be related to wide economic and social change. Pring saw that a society that changes in such a context and economic environment should revise its humanities education curriculum, and that education not connected with the social and economic world is dangerous. The argument also states that the curriculum should be established according to the rapidly changing time, taking economic logic as a goal, and that the boundary between humanities and vocational education should be knocked down . This implies that the social need for universities is changing. Ultimately, due to the recent university crisis originating from the criticism that

[1] Suwon Kim, "Exploring ways of linking vocational education and humanities education," Korea Research Institute for Vocational Education and Training, 2002 .p. 7, recited.

university education does not keep up with the speed of social change, changes are being rapidly implemented focusing on practice and function as the university's identity, beginning with key values including "free education," "general education," and "humanities education" as applied in modern higher education institutions.

Humboldt-Universität zu Berlin, established in 1806 and said to be the pioneer of the modern university, claimed "freedom of professors is not limited by the political power and freedom of academia" as its ideology. The modern educator, Newman, stipulated that a university's philosophy is "cultivation of (development) intellect" and defined this as the pursuit of "knowledge for which it itself is a goal." He stated that universities should pursue knowledge, setting knowledge directly required by human nature and exploration as goals, by moving beyond the benefits to be gained by owning knowledge and by others' help. For this, he argues that universities should be independent from the church or state and foster cultured universal intellectuals.[2] In East Asian cultures, universities were the place of humanities education. The Book of Rites stated that the university is a sacred and benign academia as well as one that teaches it (大學賢聖之道理, 非小學技藝耳) "Teaching of university leads to endless goodness by further highlighting bright virtue and so making the people friendly (大學之道, 在明明德, 在親民, 在止於至善)."[3]

It seems impossible to re-establish the tradition of humanities education, which nurtured universal intellect and "led to endless goodness," in Korean universities. The relationship between capital, which secured the demands of the job market, and university, which was responsible for supply, can never be horizontal. As capitalism advanced, universities were controlled by market, capital, and economic logic as well as the logic of usefulness, and the collusion of capital; this naturally led to the decay of humanities education, which lacks capital productivity.[4]

2. Crisis in the Humanities and Humanities Education

Over the past 20 years, the humanities crisis discourse in Korea has been maintained at a superficial level. Although diagnosing the crisis is not easy, it cannot evolve into productive discussion without willingness to overcome or practice . The crisis started within the university when scholars were searching for a solution. The department of Korean language and literature reduced pure academia or transformed it into storytelling or cultural content. English language and literature expanded to TOEIC and TOEFL classes rather than Shakespeare while most of the department of philosophy disappeared. The irony of the crisis of humanities was that although scholars talked about it, the crisis was, in fact, actualized. As it was discussed, those who benefited the most were the humanities scholars. The government budget increased and humanities-related projects were strengthened every year.

The Ministry of Education granted 100 billion KRW for academic and research support projects this year. There was a sharp expansion of the budget to support humanities and social sciences. Four billion KRW was also set aside for research on Korean history to respond to the Northeast Project in China. The Ministry of Education announced the "2014 Comprehensive Plan for the Academic and Research Support Project of the Ministry of Education," which included such content on the 14th . According to the area of study, 223.7 billion KRW was given to support basic research on humanities and social sciences and 331.4 billion KRW for basic research on science and technology; 20.6 billion KRW was given for performance expansion and popularization. The support scale for the humanities and social science field increased to 15.6 billion KRW, including the budget for projects popularizing humanities, which doubled from 2.9 billion KRW last year to 6 billion KRW this year.

Although humanities research funding in the U.S. is less than 0.5% of the research development expenses of science and technology as of 2011, it constitutes 67% of the science and technology research expenses in Korea, even including social science. Moreover, large long-term humanities projects with a budget exceeding 400 billion KRW in 10 years are currently being conducted in Korea. The Humanities Korea (HK) project, which was launched by 80 universities in 2006, as a solution to the humanities crisis, is a large-scale humanities support project for which 43.2 billion KRW (as of September 2013) is allotted annually. However, the HK project, considered the biggest national humanities project since Dangun, received a sobering interim assessment, which designated it a former Korean project today, that is, seven years after the project was launched. Although the HK professor employment rate was only 100 points (out of 1200) at the first-stage evaluation in 2010, it gained 400 points (out of 2000) in the second-stage evaluation in 2013. As project assessment was quantified by professor employment rate, most of the budget was used for labor costs and HK research professors were busy building performance to become HK full-time professors. The quantitative results were impressive. Based on data from October 2012, 509 papers were published and 20,000 academic research databases were built with 1,092 books and 327 translations. There were only 4,197 papers, including 257 published in international journals such as those found in the Arts & Humanities Citation Index and Social Science Citation Index , 2,998 in domestic journals, and 447 in candidate

[2] Huimo Jeong, "Changes in university philosophy and future of humanities," *Philosophy Exploration*, volume 34, 2013, p. 174.

[3] Goliai, "University's neoliberalism and crisis" (http://coreai84.egloos.com/viewer/11025334), Egloos, 2013. (edited)

[4] James Berlin, Rhetoric and Ideology in the Writing Class, *College English* Vol. 50, No. 5, 1988, p. 480.

journals for registration. However, there was a criticism that "Since the concern called knowledge of public goods was not present in the initial design stage, HK projects' research outputs have to be led by a research agenda that is already established and their research performance remains at a discourse level." Due to research performance that did not distinguish itself from existing research or Korean humanities projects, and increasing focus on securing stable jobs for the next academic generation rather than basic improvement of the research itself, the question arose about whether the crisis of the humanities was a crisis of academia itself or of only humanities scholars.

When humanities scholars expanded the crisis discourse to protect vested interests, humanities education was left out of the core discussion. Professors focused more on what materials to use and how to use them, rather than on what to teach. Research on the teaching methodology of humanities lectures for the digital generation progressed slowly. While they claimed that the humanities was in crisis, they neglected the education that would give rise to future humanities generations. Despite the fact that academia and education should not be separated, humanities scholars and professors were separated. As a result, the status of humanities education began to weaken. Precisely speaking, although humanities education as a major has declined, humanities education as an elective is rather popular. Although the department of philosophy disappeared, philosophers are walking the streets promoting public humanities. This is the second irony of the crisis. It is ironic that the state that restricted university humanities education is leading the expansion of public humanities. As part of a project popularizing humanities, the Korea Research Foundation has been holding "citizen humanities courses" and "humanities week" events targeting the public annually since 2006, and has been conducting humanities city projects to develop a culture in which people can encounter and enjoy humanities since 2014.

The subject of the recent job market is humanities. Corporate CEOs take humanities courses at universities and talk about the importance of humanities at student lectures. However, companies do not want humanities students; they want engineers with humanistic knowledge. The spread of public humanities instills a perception of humanities not as a major but as an elective only. The public humanities success factor is slim, and smart commercialization of humanities knowledge by transforming it into units called information in ignorance of the inner correlation between humanities knowledge and context is required. As humanities education could not be intellectualized, the humanities became "information" rather than "knowledge." Because humanities in the lecture room remained old knowledge and became mere packaged information in public, humanities education is facing a crisis. The bigger problem is that humanities scholars' awareness of the crisis has not increased over the past 20 years.

The rise of public humanities leads to the atrophy of humanities as a major subject, clearly showing the weakness of humanities education. As humanities as a major and public humanities were unable to intersect, humanities education is facing a crisis as it acquires value as a product rather than knowledge.

3. 3.0 Era of Humanities

As the crisis of the humanities was actualized in the twenty-first century, discussions on measures to help overcome the crisis began in earnest. "Digital humanities," which called for active use of information technology in humanities research, is a representative measure. The concept of digital humanities began in the U.S. and was defined by Hyun Kim, its domestic advocate, as follows:

Digital humanities refers to humanities research and education performed in a new way with the help of information technology and related creative writing activities. This includes research using digital technology from the perspective of research methodology while inheriting the traditional theme of the humanities. The new nature of humanities research became possible with the attempt to use a computer, which was impossible in the past.

Wikipedia editors and Hyun Kim both emphasize the instrumental side, where IT (represented by computers) is introduced to the methodologies used in humanities research. They believe that new humanities research methodologies became possible through investigation, analysis, synthesis, and presentation using IT, and knowledge of computer use became the core knowledge of digital humanities.

However, there is a problem, given the fact that both view digital humanities only as the informatization of knowledge. Given the curriculum of UCLA's Center for Digital Humanities, that puts digital humanities at the forefront, and that of the Academy of Korean Studies Humanities and Informatics' (KAIST's) ethnography as a minor, and Seoul National University's digital information convergence as a major, most classes are focused on the informatization of knowledge.

The digital humanities course taught at Stanford University is not much different. At Stanford University, a new phenomenon called "digital humanities" is taking place. Graduate students who take the lecture called "Classical Education in the Digital Age" scour a vast database for the period in which sad diary (戀歌) and verse (韻文) appeared for the first time in research on novels of the eighteenth century. The use a website called Rap Genius, used by famous rappers such as Eminem or Jay-Z, when adding footnotes to songs.

Digital humanities, which aims to configure humanities, is as anti-humanistic as knowledge informatization through technology. Transforming analog knowledge into multimedia text by saving it as a digital database or

converting books into 3D is not related to the humanities. The "Visualizing Cultures" project by the Massachusetts Institute of Technology (MIT), which Hyun Kim presented as an example of research and development of digital humanities, or the "Mapping the Republic of Letters" project by Stanford University are just knowledge information databases.

The outward appearance of digital contents, created as part of digital humanities research in the U.S. and Europe, are not much different from knowledge information databases, created by a public institution over the past 10 years in Korea. However, there are cases in which a large difference is found in terms of qualitative level of the data contained therein. The difference is created by the depth of humanistic studies that were carried out along with content creation.

A database is just a problem of quantity; it cannot itself have a qualitative standard. If a database's quality is to be assessed, it will be determined by the quality of knowledge prior to the informatization stage. The depth of humanistic studies is not informatization. It occurs during the process of informatization and is not affected by IT methods. Humanities research and education carried out via the new method are in fact merely code conversion of analog knowledge into digital information. In this process, human creativity, imagination, and sensibility are not digitally implemented but come from the consciousness of the agent seeking to optimize knowledge to suit informatization. They are only involved in the intellectualization process and do not appear in the informatization results. Learning informatization technology equates learning the alphabet to express one's ideas. Not anybody can write poetry just by learning the alphabet. An artistic sensibility that cannot be replaced by technology is required to write a poem.

Stanford Division of Literatures, Cultures, and Languages' (DLCL) "Code Poetry Slam" shows how anti-artistic the attempt of informatization that interprets art through technology is.

There have been two competitions so far. All exhibited works imitate poetry by using source code. Those that seem to be poems but cannot be called poems are because of programmer poets who only know the letters of the language. When elementary school students who have learned the alphabet for the first time write their own thoughts, the results cannot be called a poem. Although technology helps one to express art in various ways, it cannot create art on its own. For technology to create art, there must be a human link to artistic sensibility.

Although technology can informatize humanities content in various ways, humans informatize the contents. The new attempt of digital humanities is not a methodology of research but one of expression. Humanities should understand, interpret, and be oriented toward humans. Digital humanities cannot talk about humans, which is the most important factor, although it is still humanities. Thus, digital humanities is an illusion.

The researcher presents humanities that understands, interprets, and leads technology as a new methodology that will replace digital humanities. This challenging humanities research methodology, which can be conceptualized as "Humanities engineering," declares the beginning of the 3.0 humanities era.

If traditional humanities was humanities 1.0, digital humanities, which actively attempted to recruit IT as a research methodology is 2.0, and humanities engineering that aims to view humans and society from a deeper and broader viewpoint than technology by taking the help of technology is humanities 3.0.

The ancient Greeks did not distinguish between art and technology. They used and applied the term "technology" to art and practice, that is, piece and stonemason (石工). However, in this era, humanities has reached the highest level of achievement. As technology, which was a mere shadow of the arts so far, created a new form called information that is comparable to art, the meaning of the human, who is the creator of art, user of technology, consumer of information, and producer of knowledge, became more important. Now, humanities should interpret not only art but also technology. If the function of interpreting symbols has not been abandoned, the symbol of technology should also be the subject of humanities research.

Art and technology are fraternal twins. Although both use tools, they are different in terms of form, content, function, efficiency, value, and orientation. So far, humanities only considered romance, emotion, and the aesthetic world as a subject of interpretation by having art as the target text. However, humanities engineering determines practice, efficiency, and convenience from the human perspective. The core of humanities engineering is to interpret technology as humanities. The reason this is important is that technology mimics humans and all technology is "expansion of humans" as pointed out by McLuhan. Viewing technology from the human perspective will be another way of thinking and reflecting on ourselves.

4.Conclusion

There are three reasons humanities education should change. First, the humanities paradigm, the text of humanities education, has changed. Second, the educational environment has changed. Third, social demand and its needs have changed.

The change in the humanities paradigm is Humanities 3.0. In addition, web 3.0 and education 3.0 were also created when humanities 3.0 appeared. Web 3.0 is the advancement of web 2.0—"sharing" and "participation"—and is "open" to "individualization," "artificial intelligence," and "demand forecasting." Education 3.0, as a mode of twenty-first century student-centered interactive learning, consists of an open education system, horizontal communication, and problem-solving-oriented collaboration. The humanities 3.0 era affects not only the contents

of humanities education but also the style. If traditional storytelling education focused on creativity-centered "writing," the digital storytelling education of the humanities 3.0 era should not be trans-media storytelling in accordance with the change in media, but instead convergent storytelling education that integrates creatively edited storytelling and new stories made through humanities, art, and technology. The change in the educational environment is characterized by the advent of the smart learning environment. The analog educational environment is rapidly moving toward an IT-focused digital environment and the change in the educational environment requires a change in traditional teaching methods. The digital educational environment provides infrastructure optimized for smart education with an immersive, connected, play-type, multimedia environment and ultimately, a change in story-telling education is inevitable. Changes in social needs and requirements also reconfigure the role of humanities education. The twenty-first century talent is a self-directed learner who can produce knowledge based on given information and acquire wisdom in the process. The traditional university education model cannot handle this role. Ultimately, the need for a Human Resources platform that creates new demand has emerged. Today, the crisis of university education has not escaped the traditional education paradigm; it originated from not meeting the new demands of society. Universities have lost their function as a human resources platform that supplies talent to meet social demand. Now university education is changing to education competition (consumer-centered) from entrance competition (supplier-centered). The education model should also change to one in which students who want to can learn from professors who can teach.

As observed by Ukin Baek, the intellectualization of information depends on an individual's combination of intellectual abilities. On the Internet, knowledge of which context is broken and which is fragmented into modules is provided as information. Although the network called hypertext and links provides clues that lead to "intellectualization of information" that creates new content, "intellectualization of information" has no choice but to rely on the combined intellectual abilities of the individual who finally uses it. The core of intellectualization is creative thinking that addresses information. All newness starts from what is old and familiar. Although technology looks at the future, thinking remembers the past. Reading, understanding, and analyzing the classics is what humanities education can do best.

The goal of university education in the digital period is to cultivate the talent needed in the knowledge information period to strengthen humanities education. Humanities education helps us to proceed and maintain moral value as humans; it teaches us the expansion of thinking that sparks the commercialization of information.

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