In *Hidden In Plain Sight* (Wiggins, 2012), creativity is one of the things that makes us human, unlike other species. For abstract pleasures, mankind creates art theories such as music, architecture, and design, and thus proves its creativity. Snow and Wiggins didn't think technology and art were anything but opposites. Snow (1959) compared scientific and non-scientific people, and said that science and art should be used to assimilate and naturally to each other's needs rather than to help each other. Wiggins (2012) tried to understand human creativity through cognitive modeling in computers. However, artists would sometimes reveal outright hostility when asked about creativity.56He believes that machines have learned about machine creativity and that this field has actually been practical and theoretical success. He said that we create new sentences every day to express new creativity, but not all creativity has to be great. In other words, creativity is relative. He said that creativity in science is underestimated and expressed only in passive voices. In particular, speaking of discovery, he said that if scientists had judged it to be just a coincidence and recognized it as unthinkable or unimportant, it would have been just a trace, not a great discovery or something. He argues that creativity is necessary not only for science but also for math and technology. But people still struggle with science, think of scientists as nerds, and show no interest or interest as much as literature or art. Wiggins (2012) argues that this negative perception started with teaching methods. The lessons give the impression that math formulas, science discoveries and computer programming science-related fields require no imagination at all. Therefore, he said that it's important for programmers to teach them what they really need to do when they're programming, what they really need, what they're capable of imagining abstract processes, what they're imagining problems, what they're learning. His argument really caught my attention. It was the fact that I never once asked why when learned science. I learned that science is truth, that is, accepting and understanding as it is, and I thought that it was a subject that produced output when input was put in like a mathematical formula. Even if I think about the opposite topics of mathematics and literature, I think they all started with a question mark when I finally returned to the origin. It means that all of subjects started from why and how.

The meaning of the words art and technology is not fixed, but has changed with the flow of the times. Unlike Wiggins, Ingold (2001) believes that it is a modern idea that the meaning of art and technology should be opposite. What's interesting is that what artists create and create their work is described as technology what we represent as craftsmanship. After reading this paragraph, I remembered the beautiful ceramics of each country I saw at the online exhibition. I admired them not only using interjection such as beautiful, but also the technology of creator as delicate. Then, it reminds me that the essential meaning of the word technique I used here was to create something. This word has long been used since Greek and Roman society to describe all kinds of activities, and today it is a term with many connotations. Until the beginning of the 20th century, art was useful when human creativity and imagination were more associated with higher intellectual abilities, while physical skills were more in line with the concept of technology. However, in modern times, the meaning of technology and art are interactive and are closely connected with modern concepts and humans.

Wajcman and Rushkoff talk about the basic premise that they believed machines would free us, but they didn't. In other words, technological advances do not free human time and, paradoxically, the time pressure has increased. This is in line with what Rushkoff (2010) said that as the Internet develops, we should always have access to the media which means always-on. Wajcman (2015) saw the proliferation of time-controlled and highly efficient ICT (Information & Communication & Technology) rather controlling us. In fact, in the Internet world such as email, Facebook, Twitter, and Instagram, we can contact directly whenever and wherever. With the appear of these social networks, we have become a generation that learns and experiences through the Internet rather than textbooks, and such education has no choice but to have a negative effect on the brain (Rushkoff, 2010). In other words, our brain, unlike the memory system of computers, has its own capabilities and capacity, and the dependence on the Internet is that we will soon become computerized; We simply combine numbers and words, put them in the search box, search and get answers, just like a computer, forgetting the purpose and reason (Rushkoff, 2010).This kind of life is just like what Wajcman said about the acceleration of technology, making our lives faster and with no time to rest. When I did media detox, there was a moment of relaxation and comfort, but soon it turned into discomfort again. This is because the disconnection of real-time communication made me anxious and most of the thing I had to do were difficult to deal with without using the Internet. Due to this experience, I agree that the efficient technological advancement Wajcman said controls us more than we thought. So, he said, the key is our ability to separate from time and choose how we can use our creativity to allocate more time efficiently. Changes in technology have changed not only our lives, but our society as a whole. He argues that time culture and technological development must be understood together because the shape of the society in which we live is reflected in the devices and material bases we use. As he argued, life has no choice but to have a dichotomous view of cutting-edge technology, so he suggests refreshing working hours or suggests work-life flexibility, slow life, and so on. But obviously we can't choose between technology and other things like nature and time. Therefore, as technology is accelerating, we must embrace and live accordingly. He said we have a lot of options, but we can't have all of them. In other words, preferences and dislikes must exist. He believes that scenarios for future technological advances will have a tremendous and effective impact on our culture. Big data and algorithms are all included. However, he said there is a growing awareness of errors that the algorithm is not fair in software algorithms. Each software has a different philosophy. That's why engineers need to be more careful when developing. The dilemma Wajcman discusses reminds me of a documentary called Social Dilemma on Netflix. After I watched this documentary, we had a lot of questions about whether we were using the technology correctly and efficiently for what it was originally intended for and for consistent purposes. And while reading this Wajcman's article, at least I believe that I am not using the advanced technology correctly and are completely absorbed and living under the pressure of time. Also, Rushkoff (2010), like Wajcman, we do not take technology more than necessary with a passive attitude of life, then we must consider for what purpose we accept and how to use technology in appropriate way for our lives.

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**[Formative Assignment: Wiggins]**

The most impressive thing about Hidden in Plain Sight was Wiggins' 'What we most likely fail to do is what programs start out really needed: the cognitive skills to imagine abstracise processes applied to abject, and we're not going to be able to do anything about it. I thought it was important because they know to focus on what to teach and to train for future programmers, but they still don't. However, I think learning the programming language and background knowledge of computer is essential. After reading this, I thought about what programmers really need. It's because 'creativity' is necessary for the arts, and I never thought it would be used scientifically. I thought that being creative was a way to rely on 'sense’; i.e exercise imagination. So, I didn't think it was necessary for the most rational and logical science. But as I looked at the clothes, toys, and even food that robots painted, or 3D printers, I thought creativity was necessary in any field. In particular, abstract methods and results felt important in programming. Programming is like turning a language into a visible object. However, imagining and drawing and making it real is not simply about ordering and executing a computer in language. For example, if I want to make a flying car, I am not just going to put wings on the car, but I am going to study the basic structure of the car, the principles of the engine, and then I am going to use my creativity to simulate various methods, and then I am going to make a simple model and experiment. But, of course, it is actually going to be more complicated and it is hard to understand and apply these abstract methods and concepts.

Therefore, to learn programming properly, I believe that myself needs to think a lot about creative thinking, add my imagination to the abstract concepts, and develop the ability to translate this into language. In conclusion, I realized that science is not just an area of exploration by scary, boring 'nerds', but a fun area of fundamental questions and curiosity that produces really valuable results in the world.

**[Formative Assignment: Ingold 3\* (progressive) summaries]**

Paragraph

'Art' and 'Technology' are just words and the meaning of them have been changing all over the period of history. However, their meaning is treated as opposite anyway, even now.

Skill is connoted in many words; ‘technics’, ‘technique’, and also words which are opposite. But the apparent changes such as the meaning of words, hide actual important shifts, which are essential elements for abstracting, from practitioner's environment.

In 18th century, there was a trend that divides the intellectual labour and physical labour according to a more basic series of opposition rather than between mind and body. In early 20th century, technology was considered as a bulk of rules and principles when the scientific study of productive practices was informed. And, today, technology train the practitioner to apply it, not make scholar to study 'technology'.

The meaning of art and technology is along to the space with human freedom and subjectivity are considered interactive.

Summaries

In the past, technology and art were mere considered as the meaning of words, but, in recent years they are not only just words but also related to the environment where interacts with human. ‘Art’ and ‘Technology’ interact with each other according to the situation and space.