

The 4th Industrial Revolution and Social Work Focus on People with Disabilities

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Abstract

Although it is important to provide welfare services to prepare for the fourth industrial revolution, it is important to attempt to seek alternatives centering on the perceptions of disabled people. The purpose of this study is to review the welfare of people with disabilities that still have blind spots regarding the era of the 4th Industrial Revolution. For this purpose, the theme was derived from the opinions of the parties using the FGI research method.

Key word: *4th Industrial Revolution, Disabled, FGI Research Method*

1. Introduction

The Fourth Industrial Revolution was publicized through Klaus Schwab (2016) at the Davos Forum in 2016, and was then spread through many parts of our society. It is predicted that our interest in this matter is higher than ever and it will dramatically change our way of life, unlike the first, second and third industrial revolutions (Park, 2017). We have to hurry to look ahead to the infinite opportunities and challenges that the Fourth Industrial Revolution will bring, and to respond wisely (Schwab, 2017).

In order to respond to the Fourth Industrial Revolution, it is necessary to reconsider the overall system of politics, economy, society, culture, education, and welfare, but understanding of this rapidly changing phenomenon is still low. There is a change in the development of each field and social adaptation. But, there is a concern that there may be more gaps in the field of welfare for persons with disabilities, especially social welfare targeted groups.

The question of who should be centered in the search for a response to change is an

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important issue. Therefore, it is meaningful to grasp the desire for human rights from the viewpoint of the disabled to find a way to adapt to the change.

Although human rights and quality of life of people with disabilities have been emphasized, they still have welfare blind spots. The advent of the welfare era is an opportunity to revolutionize human life but at the same time it causes social problems such as discrimination from polarization by substituting human jobs.

Under this circumstance, this study examines the phenomenon of the fourth industrial revolution, which is currently an issue of our society, and how to understand the social agenda and how to deal with the welfare of persons with disabilities in the social welfare field. In the fourth industrial revolution, which is invisible through the results of the research, we seek to find answers to the question of what to do to prevent disability welfare from being alienated from society at times of rapid change and absolute timing.

Therefore, in this study, we considered an approach from the viewpoint of disabled people using services rather than the viewpoint of providing services is needed in preparing the future of the welfare of the disabled as well as in seeking countermeasures. The purpose of this study is to analyze the opinions of the disabled people on the big topic of the Fourth Industrial Revolution using a focus group interview.

Through this study, it is expected that the alternatives based on the viewpoint of the disabled people in the flow of the fourth industrial revolution will be a positive discourse to search for future countermeasures.

2. Research Method

FGI research is a research method that is attracting attention as an additional or new method of data collection. It has an advantage in that the consensus and arguments between the participants come and go during the interview process (Krueger, 1997).

In this sense, we analyzed the FGI research method as appropriate in the study of 'Fourth Industrial Revolution and Social Welfare'. The research conducted interviews with 9 persons with disabilities who use the Welfare Center for the Disabled over the third period from September to October, 2017. The general characteristics of the study participants are as follows.

Table 1. General Characteristics of Participants

Number	Gender	Age	education	Type of disability	Type of disability	Period of disability	code
1	Male	61	high school	physical disability	1 level	6years	1
2	Male	47	Bachelor's degree	brain lesions	1 level	47years	2
3	Male	49	middle school	physical disability	1 level	49years	3
4	Male	41	Bachelor's degree	visual hearing disability	1 level	25years	4
5	Male	53	high school	physical disability	1 level	17years	5
6	Male	57	Bachelor's degree	physical disability	3 level	57years	6
7	Female	24	college student	brain lesions	1 level	24years	7

8	Male	23	college student	physical disability	2 level	23years	8
9	Male	23	college student	physical disability	2 level	23years	9

2.1. Data Analysis

For data analysis, the target population is selected through the recommendation of the staff from those with disabilities who are active users and who give many opinions for the development of the disabled welfare center. The study period was conducted by FGI interview for two months from September to October 2017.

2.2. Research Method and Analysis

One week before the interview, researchers distributed the literature and video materials on the 4th Industrial Revolution and the unstructured FGI questionnaire so that they could understand before attending the interview. Before research is conducted, researchers explain the purpose of this study to the interviewer and the consent of the researchers were recorded. The interview time was 1 hour and 30 minutes for each session.

The research consists of questions such as the following: 'Will the life of the disabled be improved by the Fourth Industrial Revolution?', 'What are the positive effects to the welfare of persons with disabilities resulting from the Fourth Industrial Revolution?', 'What are the negative effects to the welfare of the disabled due to the Fourth Industrial Revolution?', 'Will the occupations of disabled welfare field disappear?', 'What is the strategy for the welfare of the disabled according to the 4th Industrial Revolution?', 'What is the role of a social worker in preparing for the fourth industrial revolution?', 'What are the courses needed for the social welfare curriculum according to the needs of the times?'

The content of the recorded FGI was made by two students of the Department of Social Welfare, and the first transcript was prepared and supplemented with the main and sub work. The completed transcripts were analyzed using the Nvivo 10 program, a qualitative research data analysis method.

2.3. Results

The results of the FGI interview for the 4th Industrial Revolution and the Welfare Handicapped Measures. 326 nodes were formed, and as a result of the second categorization, three upper categories, 12 middle categories and 32 sub categories were created. Table 2. Among the total 326 nodes generated, positive expectation was 18% and anxiety was 40.6%. The countermeasures accounted for 40.4%.

Table 2. FGI Category

Top Category	Middle Category	Sub Category
positive expectation (61)	Development of services such as ancillary equipment (13)	Increased use of smart devices(7) Development of customized machines(3) Opportunity to realize dreams(2) It will be helpful to blind people(1)
	Guarantee of movement rights(4)	Expect the development of transportation(3) Increased opportunities for economic self-reliance, along with the settlement of movement rights(1)
	From a Potential Protectable Social Risk Environment (13)	Improved risk coping ability(2) A machine can take the risk instead of

		people(11)
	From a Potential Protectable Social Risk Environment (31)	This reduces the administrative burden on social workers.(3) Strength of face-to-face service(19) Increase of individual service(9)
Anxiety (133)	If your perspective does not change It is meaningless(39)	There is no opportunity for persons with disabilities to present their opinion (27) Without reflecting the views of disabled people in public facilities and amenities. It is meaningless(12)
	Increased risk of isolation and alienation (54)	There is a lot of work to do on my own.(18) Concerns about lowered athletic performance due to increased dependence on machines(3) Longing for a human beings(26) Fear that you cannot keep up with the pace of change(7)
	Increase in human rights problems(11)	Invasion of privacy(8) Information disclosure risk(3)
	Increased information gap(28)	Increased relative deprivation(7) The income gap will be larger.(17) An economic burden on the family(4)
Countermeasure (132)	National system support needed(31)	Need to support individuals as well as facilities(7) Respect the decision of service parties in policy making(24)
	Establish human-centered values(56)	The most important thing is relationships with a person(14) Humanity-centered education needs(11) It is necessary to establish a human-centered identity(21) Requires analog sensitivity(7) Change into social welfare education course based on humanities(3)
	The Fourth Industrial Revolution Need to establish values(27)	To prevent the disabled from lowering their thinking power(9) The center of the disability's need (18)
	Need for welfare education(18)	Need to improve awareness of the disabled(7) I have to voice myself(11)

As a result of the analysis, FGI participants have anticipation about coming innovation, but they have anxiety factors.

2.3.3. Positive Expectation

As a result of the study, FGI participants have the following positive opinions on the upcoming innovation (61). 'Development of services such as support equipment(13), Expectation that movement rights will be guaranteed in the future(4), Potential Social Risk Exchange Protection (13), Opportunity to strengthen social welfare professionalism(31). The results are as follows.

As can be seen from the sub-categories, disabled people consider the convenience of developing technology to be the greatest expectation. Following these results, the expectation is that it will be a good opportunity for people with visual impairment and language impairment.

“As the fourth industrial revolution progresses, a lot of smart machines will come out, and among them, auxiliary devices that can be worn on the body will be developed much easier than now. For example, a walker placed on your legs to replace your legs, which is more convenient than a wheelchair. These things are already being developed. (Case 5).”

“With the development of AI, robots with excellent emotional and thinking power are isolated from society and solve the loneliness and livelihood assistance of disabled people and solitary elderly people, and it will help lack of human relationships, overall life, and reduce loneliness (Case 2).”

“It is very difficult for us disabled people to travel. The problem of transit rights, which is difficult for those with mobility issues, will decrease (Case 1).”

“As science develops, we need to be able to provide human-to-human direct reporting services. Talking to a machine is not the future we think of. In the end, social workers must develop human-centered expertise that machines cannot replace (Case 7).”

2.3.2. Anxiety

While the Fourth Industrial Revolution has a positive future that will provide convenience for people with disabilities, it simultaneously breeds anxiety. While the Fourth Industrial Revolution considers a positive future that will provide convenience for people with disabilities, it can be seen that there is a concern about the polarization caused by the new capital of robots and machines. There are comments that the fourth industrial revolution of the future will cause a welfare gap that can only be enjoyed by those who enjoy technology innovation.

Specifically, the 'perspective of the disabled' If you have no meaning (39), 'Increased risk of isolation and alienation (54)', 'Increased Human Rights Issues (11)', 'Information gap grows (28)'. As can be seen from the results, the element of anxiety can be seen as anxiety about the 'gap'.

Anxiety about these gaps in the research results shows both an income gap and information gap. In particular, one could see a negative opinion that the income gap will increase due to the development of machinery and rising costs. When everything is solved by a non-human machine, the possibility of social isolation is raised as human relationships are reduced.

“Human rights and invasion of privacy will appear, and individualism will increase because robots solve everything. It will become pleasure centered, and that part of oneself will decrease. And there will be a gap between people with disabilities (Case 3).”

“Because the people who develop machines are non-disabled, they should include procedures and processes that reflect the voices and opinions of people with disabilities. It emphasizes that services and technologies are truly necessary for people with disabilities (Case 9).”

“It is a general idea that quality of life can be improved if all things can be solved in the house if it is popularized as it develops. I think that people with disabilities could become more alienated. It is the same for the disabled and non-handicapped people. If this is the case, when I see people for negative reasons, I should feel lonely and do more for emotional activities. ”

2.3.3. Countermeasure

Finally, the researchers predicted that if the response to the fourth industrial revolution was taken, a positive strategy would be taken. What is interesting is that in the social welfare sector, the most important thing to be mentioned in the Fourth Industrial Revolution was the word "human-centered." Technology has helped people with disabilities, but they also felt the fear of being disconnected from their world. In order for the 4th industrial revolution to take place, it is necessary to grow together with national response and awareness. 'Need to support the national system (31)', 'Establishing human-centered values (56)', 'It is necessary to establish the value of the fourth industrial revolution (27)', 'improved awareness of the disabled (18)'. The relevant references are as follows.

The participants agreed on the necessity of changing the welfare of persons with disabilities according to the 4th Industrial Revolution, and there was an opinion that it is necessary to provide support at the national level. It was found that the institutional support of the state is needed for the research for analysis of new science and technology, machinery, and changing disability grade. In addition to institutional support, preliminary suggestions were also presented through pilot projects.

"In some countries, they have such a system that only supports the extra cost of the disability. You make money, but you receive money from your country. In order to solve the gap, I think that the universal service cost should be reduced so that the children of the vulnerable ones who are actually in need are not discriminated against because of their difficult situation due to economic reasons. If not, it will be more relative deprivation. And as IT develops, the mentally disabled and the developmentally disabled who are in constant struggle should be studying the policies and supporters for the types of disability. As I study cloned animals and these things, I think it should grow just as human rights grow (case 8).

"I think computers and machines need to be important to humanity. I think it's important that a social worker visits a lot of facilities and actually contacts them (Case 1)."

"When you are in education, you must make sure the mind comes first. If you use your mind, you help your body (Case 3)."

"Convenience and automation, robots are convenient for our lives, but cause more human alienation and loneliness, I think the biggest problem is that you should not miss the gap between the beneficiary and the unseen, or the beginning of further discrimination (Case 7)".

"The capacity to control advanced facilities and the educational environment should be changed so that they can be trained in the 4th industrial revolution. Improved awareness of disabled people should be extended to government policy activities and the general public should be educated. From the time of childhood, children with disabilities should be provided with capacity-building education (Case 4)."

"People with disabilities should actively understand this trend and demand it from the government. Instead of using incorrect allocations for the government budget, we need to demand customized wheelchairs for the disabled and the development of custom autonomous vehicles for the disabled (Case 5).

3. Conclusion

The main slogan of "Nothing About Us Without Us", which is the viewpoint of the

disabled, emphasizes the impossibility of the exclusion of disabled persons and self-determination. From the perspective of the parties, the interviews on the Fourth Industrial Revolution showed opinions about positive expectations, alienation, isolation, differentiation, and responses to support them. The results of the study are as follows.

First, it confirms that the Fourth Industrial Revolution is expected and is expected to bring convenience in many areas of the living space. It is necessary to thoroughly strengthen services based on the needs of people with disabilities in the system and process of change. It is necessary to provide a variety of services to meet the positive expectations such as the development of auxiliary devices and the expansion of the right of movement. To this end, the lowest level of service available should be provided for everyone, not the minimum number of services.

Second, the development of technology showed that there was a sense of crisis and anxiety about the gap between the beneficiaries and those who could not get them, those who received the benefits, and those who were not. We need to find ways to solve the problems of inequality, gaps, alienation, loneliness and isolation, and human rights. They are most worried about among the interviewees was the 'alienation' due to the 'income gap', expressed by the concern that the information gap, which still exists in the information age of the tertiary industrial revolution, will not be narrowed. Behind the positive aspect of convenience is finding a solution to the problems of human rights, such as anxiety that robots or artificial intelligence replace jobs, the invasion of privacy due to the exposure of information, and the crisis of relative deprivation. In order to solve the gap, we will expand the support of policy rehabilitation equipment such as assistive rehabilitation medical equipment and disability rehabilitation equipment in the welfare of persons with disabilities, and expand demonstration projects in various fields for adaptation and system setting in order to mitigate the impact of rapid change. It is necessary to make the program of the adaptation of life in the revolution era to solve the gap, to understand and expand.

Third, for countermeasures of the fourth industrial revolution, the opinions of disabled people are that there is a need to strengthen the support of the national system, strengthen the human - centered values, and improve society's disability recognition. The welfare of persons with disabilities is not only the development of medicine and science and technology such as rehabilitation, but also means strengthening the value of the most basic community consciousness of living together with society. Improvement of consciousness to enhance ethical sensitivity such as human rights protection, personal privacy protection, and sensitive personal information protection in the environment where all personal information is easily exposed, to human rights protection, personal privacy protection, and big data utilization due to the development of science and technology, should be backed up.

Fourth, it is necessary to change the social welfare education that will raise future talents. Education that strengthens human empathy and communication such as human service technology, face-to-face service technology, relationship enhancement, communication, touching welfare practice techniques beyond the frame of subject to subject for social welfare first class qualification. The process should be strengthened. Such education should not only change the curriculum, but also enhance the capacity of human services by cultivating the sense of social welfare fields by focusing on the field and strengthening the service.

Through this study, in the discussion on whether the quality of life of the handicapped will be improved due to the 4th industrial revolution, all of them answered positively with hopes and expectations. However, we could see the increase of alienation due to information and economic gaps, and worries about the impact on human emotion. The fundamental question of whether the unconditional technological development can be directly linked to the quality of life was found in the opinions of the subjects. It also emphasizes that all the processes reflect opinions from the perspectives of disabled people

in all changes and developments can truly be services and skills based on what people with disabilities need.

It seems to be a meaningful study on the timeliness of the periodical discourse of the 4th Industrial Revolution, which is actively under way in each academic field. Thereafter, various research methods such as quantitative research, qualitative research, and mixed research methods are needed. If the research on social welfare education tasks and social welfare future manpower are pursued successively, it will change along with the sudden changes in the future. It is thought that it will be possible to develop this through the wide ranging suggestions. Although there is a limit to the discourse within the huge wave of the Fourth Industrial Revolution, it can be extended to various fields of research.

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