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Curriculum Development and Teachers for Cultivating OECD Student Agency in Japan: From an Examination of Educational Thought, Educational System, History, and Contemporary Science and Mathematics Education Practices*

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The purpose of this paper is to examine the development of a curriculum in Japan to foster the agency (OECD Student Agency) necessary for children living in the future, as outlined in the OECD Education2030 Project, and the role of teachers who implement this curriculum. Therefore, I aim to achieve this goal by taking an overview of educational thought, educational systems and history, and examining several initiatives in the OECD Project and the situation of a Japanese high school that practices science and mathematics education. As a result of analyzing previous research and the narratives obtained from interviews with Teacher A (pseudonym) of a certain F High School (pseudonym), it was found that school education should not simply teach subjects, but should aim to enable student to help student exercise agency in the future. It was suggested that it is not necessary to add content to the curriculum, but rather to prepare to provide students with competencies that will enable them to use the content in various contexts, situations, and circumstances, suggesting that in order to discover such important competencies, teachers and other related parties are required to implement curricula that allow students to slowly and carefully explore the competencies surrounding the content, and to conceive and build curricula that include both hidden and intended curriculum that allows student to reflect on the curriculum they have achieved.

Keywords: OECD Student Agency, curriculum development, teachers

Background and Purpose

Purpose of the Study

Purpose. The purpose of this paper is to examine the development of a curriculum in Japan to foster the agency (OECD Student Agency) necessary for children living in the future, as outlined in the OECD Education 2030 Project (OECD, 2020a) (hereinafter referred to as the OECD Project), and the role of teachers who implement this curriculum. Therefore, I aim to achieve this goal by taking an overview of educational thought,

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educational systems and history, and examining several initiatives in the OECD Project and the situation of a Japanese high school that practices science and mathematics education.

What is OECD Student Agency (OECD, 2019a)? The OECD Project defines agency as the totality of abilities that students acquire through the curriculum, rather than a certain curriculum framework. Agency is defined as "the ability to set goals, reflect, and act responsibly in order to bring about change". In the next two chapters, this paper will first attempt to explore the origins of education that led to the establishment and definition of agency, from educational thought and educational systems and history related to the genealogy of modern schools.

Previous Research: Agency Required in Modern Education

Trends in educational thought leading to modern education. When explaining the purpose of education, Ozaki (2023) assumes that "education" is to guide children to some kind of "goodness". She then classifies and explains the educational ideas that lead to modern education into three types. One is the "theory of ideas" proposed by the ancient Greek philosopher Plato (B.C. 427-B.C. 347). Plato believed that everything in this world is a temporary appearance, that the true form is in the "idea" of the world of concepts, and that education is about aiming for the "idea" that is the only existence. In other words, there is only one correct thing, and education is about guiding children to be able to "see" it. The second is the educational idea of "naturalism" of J. J. Rousseau (1712-1778). Rousseau considers education to be about valuing the innate qualities that people possess. In other words, education is about valuing the qualities that each child possesses and guiding them to emerge naturally. The last is the progressive educational thought of J. Dewey (1859-1952). Dewey believes that what is right is created gradually. In other words, education is about nurturing the ability of children to create what is right for themselves. It is pointed out that these educational thoughts are important hints when considering the purpose of modern education (Ozaki, 2023).

In this paper, these three types of educational thought are also expected to be important indicators in the way of curriculum development and the educational views of teachers who operate that curriculum when considering the development of agency as defined by the OECD. This is because these educational thoughts have been transformed to suit the time and place, and have been passed down as the foundation or reflection of modern educational thought. I believe that one of the educational thoughts that has been passed down to the present day is the aforementioned educational scholar J. Dewey, who has a child-centered, empirical educational thought.

Dewey's educational thought that connects society and school is introduced as a child-centered thought, rather than assuming the knowledge and skills of subjects to be acquired (School and Society) (Dewey, 1957). Child-centeredness is not a traditional educational philosophy that focuses on the dichotomy of whether knowledge or experience is more important in education, but emphasizes a shift in education to rich learning that is rooted in the society in which children live. Dewey attempted to reconnect society and school through practice by introducing "occupation", an activity linked to daily life such as woodworking, sewing, and cooking, to the University of Chicago Laboratory School, instead of schools being places that isolated children from society. Dewey also advocated school reform, with the goal of education being democracy as a "way of life", and children and adults alike as members of a democratic society. The democracy that Dewey advocates is not simply a form of politics, but a cooperative way of life, and the goal of education is a way of life in which

experiences are exchanged and reconstructed while communicating with a diverse range of others (Democracy and Education) (Dewey, 1975).

Furthermore, Tanaka and Hashimoto (2012) cite problem-based learning, which acquires knowledge, skills, and attitudes that connect the basics to real life by solving problems and phenomena faced in the real world, and project-based learning, which solves and verifies problems in the real world, as the direction of modern educational learning based on Dewey's educational philosophy. These learning and activities have their origins in American progressive education, and their lineage can be found in Japanese school education as Japanese educational practice in the Taisho period and Japanese educational philosophy in the early Showa period.

From the above considerations, I believe that Dewey's educational philosophy, based on the society and daily life in which children live, can provide many suggestions for curriculum development and the role of teachers in implementing the curriculum to foster the definition of agency, "the ability to set goals, reflect, and act responsibly in order to bring about change".

The history and system of modern schools leading to modern education. This section provides an overview of the system and history of modern schools up to the present day, focusing mainly on overseas. Kamishiro, Goto, and Yokoi (2023) classify the nature of schools into three types based on the genealogy of modern schools in the UK. One is a school for daily life. In the UK, from the 17th century to the early 19th century, older unmarried women opened their homes to teach reading, writing, and arithmetic to children in the neighborhood, and sometimes had them help with daily life such as sewing. Such schools were called dame schools, and all the "things" and "places" of daily life were teaching materials and classrooms. The second is a school for protecting children. Finally, it is a school for raising members of society.

The nature of schools that relate to such daily social life has improved with the times and social background, and some of them have continued to exist as educational systems today. For example, in Japanese schools, there is the local school management council system (community school) (Ministry of Education, Culture, Sports, Science and Technology, 2015) to strengthen cooperation and collaboration with the local community and families, and the special curriculum school system (Ministry of Education, Culture, Sports, Science and Technology, 2008), which allows schools to set their own educational curriculum that is not based on the current curriculum guidelines.

By the way, in terms of society, the agency that children, as discussed in this paper, are increasingly being asked to develop aims at the well-being of individuals and society. In an age of greater uncertainty, in order for us to achieve lifelong well-being, it is more important for each of us to think for ourselves, set goals, and act to promote the changes necessary to achieve that goal. Agency emphasizes "autonomy" and "responsibility". "Autonomy" in agency does not simply mean following one's own principles, assertions, or doing what one wants to do. It is about deciding one's will and actions in relation to others and society. The concept of agency is explained as the "responsibility" of each individual, as a member of society, to think about and act for the well-being of others and society (OECD, 2019b).

In terms of this relationship with others and society, one thing that cannot be overlooked in modern Japanese education is the Course of Study, which serves as the legal basis for the organization of school curriculum. One of the features of the current curriculum guidelines, which have been announced in stages since 2017, is the

"Curriculum Open to Society" (Ministry of Education, Culture, Sports, Science and Technology, 2017). According to the Curriculum Guidelines, the "Curriculum Open to Society" is a curriculum in which schools and society share the goal of "creating a better society through better school education" and work together to foster the "qualifications and abilities" necessary for children, who will be the leaders of the future society, to create a new era (Ministry of Education, Culture, Sports, Science and Technology, 2018a, p. 2; 2018b, p. 2; 2019, p. 1). (Hereafter, when the descriptions in the junior high school and high school curriculum guidelines are the same as those for elementary schools, only the descriptions in the elementary school curriculum guidelines will be quoted.)

In other words, Japan's current school education, which is based on the idea of an "Curriculum Open to Society", can be said to provide better learning opportunities and learning environments for children based on a stronger "relationship of trust" and more fruitful "reciprocity" between schools and society through the tool of the educational curriculum, and can be said to be in line with the concept of agency, which aims for the well-being of both individuals and society, and contribute to its development.

Based on these educational philosophies and educational systems and history, the following chapter will examine the current situation (June 2024) of a certain F High School (pseudonym), which is characterized by its science and mathematics education, and will provide practical considerations on curriculum development for cultivating agency and the role of teachers in implementing that curriculum, focusing on an interview with Teacher A (pseudonym), who is involved in educating students there.

Case Study Introduction

Agency and Curriculum Development

Education from an agency perspective. As mentioned in the previous section, agency according to the OECD project is defined as "the ability to set one's own goals, reflect, and act responsibly in order to bring about change" (OECD, 2019b). In that sense, the ideal child is one who thinks for himself and works toward necessary improvements in school and in his daily life. And when children enter society, they will be expected to have more individual "initiative".

In a society in a VUCA (Volatile, Uncertain, Complex, Ambiguous) era, it is expected that there will be cases where existing rules in the world will need to be changed. In addition to changing the rules, there may also be cases where new rules will need to be created if the rules themselves are not in place. For this reason, it will be necessary to develop the habit of thinking about existing rules, including the existence of existing rules, such as "Is this rule correct?" and "Should this rule be changed?", rather than simply "following the rules" from the school education stage. In this case, perspectives such as ethics and morality will also be necessary as a basis. It will also be necessary to sharpen individual ethics and morals that are necessary in society by listening to the diverse opinions of others, working together, and clashing values.

There are many aspects of this "autonomy" that must be considered in school classes, where children and students spend the most time and effort at school. One point that must be considered is, for example, whether Japanese children and students are largely dependent on extrinsic motivation such as exams, even when studying mathematics or social studies. Of course, there is nothing negative about the purpose of children and students' learning to clear targets and goals set by others, such as report cards and entrance exams. However, in today's

society, where the situation is becoming more and more VUCA, it can be said that it is necessary not only to work toward targets and goals set by others, but also to consider questions such as “Are the goals that have been set appropriate in the first place?” and “Do we need to review the goals that have been set?” It will become more necessary not only to get good grades at school and pass entrance exams, but also to consider questions such as “Are the purpose, significance, and content of evaluations and exams appropriate?” and “What is the significance of getting high evaluations and high scores?” Teachers, curriculum creators, and educational policymakers are also being called upon to ask themselves these questions.

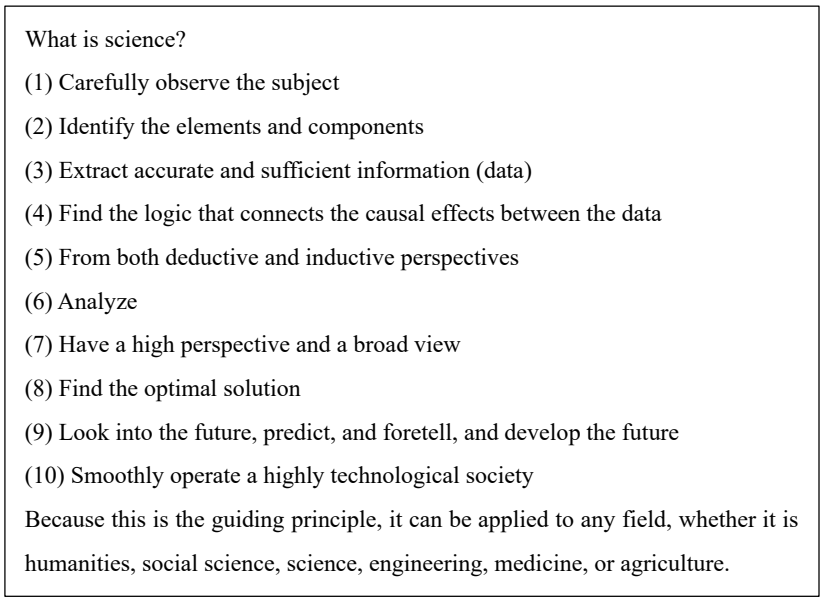

Figure 1. The “Science Image” that F High School aims for (translated by the author).
Source: From a lecture by a speaker at F High School.

Figure 1 is a part of a slide that the speaker showed to students and teachers at a lecture at F High School, which is promoting science and mathematics education. Figure 2 is an excerpt from a conversation I had with Teacher A, who is involved in the curriculum organization at the high school, when I asked him, “What can you contribute to society by mastering science?” and “What do you want to do through the development of science?”

The lecture materials (Figure 1) and Teacher A’s talk (Figure 2) suggest that “science” in school education is not simply about learning natural science, science, and mathematics. And agency can be said to lie beyond the discussion of “How can science contribute to society?”, “How can leading science lead to social change, and what are the actions and responsibilities for individuals and groups to achieve this?” The lecture materials and Teacher A’s talk by this speaker contain hints to discern the essence of learning that seeks the well-being of individuals and society.

In this way, “school education” should not simply teach subjects, but should aim to enable children and students to exercise agency in the future, and school education should aim to help children and students exercise agency in the future (Kishida et al., 2023).

What is a science elite?

(Omitted) Rather than dividing academic fields into humanities and science, and working only within their own specialty or area of expertise, they are people who can study all fields without discrimination, have fun, and use their abundant knowledge to work not only for themselves, but also for others and society as a whole, based on a free perspective. People are not divided by their strengths and weaknesses, such as being good at math so they are science, or good at history so they are humanities. For example, when you become a scientist, not only will you have knowledge of science and mathematics and calculation skills, but you will also have the Japanese language skills to summarize papers in an easy-to-understand way, and knowledge of historical changes related to your research will deepen your understanding of academics, and you will have language skills such as English to communicate with the world, and even physical education to develop the physical strength to fully devote yourself to research. There is no waste in the subjects you learn at school, and you will enjoy them without discrimination. I believe that understanding and leisure lead to the high perspective of a science elite. As I wrote elsewhere, I believe that when the situation becomes difficult or busy, rather than cutting things off or pursuing short-term gains, having leisure, kindness, and a long-term perspective will lead to new discoveries and leaps.

If science elites become scientists, they will be able to deepen their education with intellectuals and researchers from all over the world, with their easy-to-understand explanations, communication skills, and broad knowledge of history and culture. If they become salesmen, they will be able to understand and explain the properties and benefits of products other than those listed in the product catalog. If they become writers, they will be able to incorporate scientific persuasiveness and scientific evidence into their knowledge and logic. In addition, their wide range of knowledge and cultivated research methods will enable them to learn, summarize, and provide their knowledge when necessary, allowing them to continue to study and grow throughout their lives.

In addition, the qualities of science elites are highly compatible with the work of teachers, and although the content of school lessons may seem universal at first glance, they are constantly changing due to changes in content and evaluations caused by revisions to educational guidelines, and the development of research in universities and society. Science elites are cultivated by accepting this, summarizing the changes, and helping others understand them. Then, following in the footsteps of those with wide knowledge and a desire to learn, their successors will set out into society with an awareness of being science elites. (Omitted)

I believe that by nurturing science elites, society as a whole will become richer. (Omitted)

Figure 2. Excerpt from Teacher A's talk.
Source: From an interview with Teacher A conducted by the author (February 5, 2023).

Curriculum Design Based on Competency

OECD (2019b) points out that agency functions as the foundation of competencies (qualities and abilities) necessary for students to create the future. Agency can be demonstrated in all contexts of life, including moral, social, economic, and creative. Therefore, this section focuses on the perspective of competency and attempts to gain a perspective for designing school curricula.

The OECD Project redefines the competencies required to meet the needs of modern society into three "competencies with the power to bring about change". Agency is positioned as the foundation of these three competencies OECD Learning Framework 2030 (OECD, 2020b). In this chapter, these three competencies are introduced in "Transformative competencies" below, and a concrete image of the learning framework to be cultivated in students when developing a curriculum based on agency is explored in "Content and Competencies" below.

Transformative competencies. ***The ability to create new value.*** "To prepare for 2030, we must be able to think creatively and develop new products and services, jobs, processes and methodologies, new lifestyles, new start-ups, new sectors, new business models and new social models" (Omitted). "The components that support this competency include adaptability, creativity, curiosity and openness to new things".

***The ability to overcome conflicts and dilemmas*.** "In a world characterized by inequality, there is an urgent need to reconcile diverse ideas and interests, which requires younger generations to become adept at dealing with conflicts, dilemmas and trade-offs, for example, balancing opposing axes such as fairness and freedom, autonomy and collectivity, innovation and continuity, efficiency and democratic process" (Omitted). "To prepare for the future, we need to learn to think and act in a more integrated way, taking into account both short-term and long-term perspectives, even when it comes to contradictory or incompatible ideas, logics and positions, while taking into account their mutual connections and relevance. In other words, we must learn to think systems-wise".

Ability to act responsibly. "This third competency is the prerequisite for the other two. Responding to novelty, change, diversity and ambiguity assumes that individuals think about themselves while also working with others. Similarly, creativity and problem-solving require individuals to consider the future consequences of their actions, evaluate risks and rewards, and take responsibility for the product of their work". … "This involves asking questions related to norms, values, meanings and limitations. At the core of this competency is the idea of self-regulation, which includes self-control, self-efficacy, responsibility, problem-solving and adaptability".

Content and competencies. In the previous section, I introduced "transformative competencies" redefined by the OECD as competencies that will be necessary for children to live in the future. In response to the changing times, Japanese school education has also introduced content such as "programming" and "English" at the elementary education level, and "information" and "finance" at the secondary education level at high schools under the current curriculum guidelines (Ministry of Education, Culture, Sports, Science and Technology, 2017; 2018a). When actually introducing a curriculum into school education, it is necessary to design (create) a curriculum that takes into account not only the "intended curriculum" that is simply written into the curriculum, but also the "implemented curriculum" including the educational environment and the "achieved curriculum" that takes into account the perspective of evaluation. When actually designing a school curriculum, if new content is introduced within the limited number of class hours, it is not difficult to imagine a situation in which teachers in the field will become even busier. Therefore, we believe that competency is a perspective that can provide a hint for overcoming these situations.

Figure 3 below is an excerpt from a talk given by Teacher A, who is involved in curriculum development at F High School, to an external teacher entitled "The feeling of valuing all subjects and the pride of not selling yourself short".

"From the name of our school, you might think that we specialize in science and math, but we are committed to having students learn not only English, but also Japanese and social studies, which are equally important. When you research science and get results, you need to announce them and share your results with the world, but in order to communicate them correctly, you need Japanese language skills to write them down and English skills to share them with the world. If you neglect these, you will not become a science elite.

In addition, there are limits to research done alone, and when you work hard with colleagues from all over the world, when you measure mutual understanding through communication, your own history as your backbone and the history of the other person as their backbone become very important. A rich education is a force that can greatly help people in society. I believe that learning this in high school without being picky will be a big step forward."

Figure 3. Explanation of F High School by Teacher A (interviewed on March 6, 2023).
Source: Excerpt from a presentation material by Teacher A for external audiences.

Figure 4 below is an excerpt from an article that Teacher A published as a class newsletter for new students.

"I'm sure you've thought at some point that, since you entered the School of Science, you want to make great scientific discoveries and contribute to the world. I hope you continue to have that feeling in the future.

You will have more to do, and busy days await you. As this happens, you may gradually lose your sense of time, and you may start to think of subjects that are not needed for the entrance exams as not listening to or attending classes, and you may start to think of others as rivals or enemies to be pushed down rather than friends or classmates. However, that can be a little lonely. Even when you enter society, you don't want to team up with people who are harsh on others when things are tough at work. The people you want to work with and study for exams with will naturally come about if you treat others as you would want them to treat you. Whether in school or in society, groups that achieve good results have a good atmosphere. They will think, we can do it, we've come this far, you can overcome it because you have done it. This sense of pride will support you in tough situations. I think it is important to create a good atmosphere in order for you to achieve your goals next year. To achieve this, I want you to work hard and have the time to be the one to create things, rather than having others create things for you.

In other words, as you get busier and less relaxed, you tend to act selfishly, but this will narrow your options in life. You need to have the desire to support your friends. To do this, it is important to live with a sense of ease, rather than being overwhelmed every day, and it is important to study and make an effort now.

In other words, let's become people who have enough time to contribute to others."

Figure 4. What Teacher A wants to tell new students.
Source: Excerpt from an article published by Teacher A as a class newsletter.

From the external communication (Figure 3) and what Teacher A, who is involved in the curriculum organization at F High School, wants to convey to students (Figure 4), we can see that competency is not a concept that aims to cover a specific content, but rather to pursue "what students will be able to do" by utilizing the content, attitudes, patterns of thinking, and inclinations that students have learned in other contexts, situations, and circumstances. From the above-mentioned case of F High School, Teacher A's story, and class newsletter, we can see that in order to improve students' basic science knowledge, it is not necessary to add science content to the curriculum, but rather to prepare to provide students with competencies that will enable them to use the content in various contexts, situations, and circumstances. There is a possibility that content that will help students acquire important competencies to achieve their goals may be hidden in content that at first glance seems to be a roundabout way from the goal (OECD, 2019b). In order to discover such important competencies, teachers and

other related parties are required to implement curricula that allow students to slowly and carefully explore the competencies surrounding the content, and to conceive and build curricula that include both hidden and intended curriculum that allows students to reflect on the curriculum they have achieved.

Curriculum Overload

In this chapter, I will look at curriculum overload, which exists as an international issue in curriculum design and can be considered a point to keep in mind when designing a curriculum.

OECD (2020c) points out that curriculum overload should be taken into consideration when designing a curriculum. Internationally and generally, curriculum overload refers to excessive burden or strain when implementing a curriculum, and OECD (2020c) explains that curriculum overload can be judged and analyzed from the following four aspects:

1. Curriculum expansion: The tendency to add new learning content in response to social demands without properly considering what items need to be removed.

2. Content overload: The excessive amount of learning content relative to the amount of time available for instruction.

3. Perceived overload: The dimension of excessive load recognized, experienced, and reported by teachers and children.

4. Curriculum imbalance: Excessive attention paid to certain areas at the expense of other areas without making appropriate adjustments.

And the OECD (2020c) explains the challenges of curriculum overload as follows: “The constant effort to align the curriculum with the emerging economic and social demands of the country or region where the curriculum is implemented can lead to overloading or overloading the curriculum. When policymakers try to meet the demands of various stakeholders and interest groups, they are more likely to create overloaded curricula. Curriculum overload is particularly likely to occur when there is insufficient consideration at the curriculum design stage of what to include and what to exclude, and the rationale for including or not including in the curriculum. Curriculum overload can lead to a narrow, fragmented, or distorted implementation of the curriculum, which can affect the quality of children’s learning. The imposition of extra-curricular lessons and homework outside of class time to meet the demands of the new curriculum can potentially undermine the well-being of both children and teachers. In order to avoid further curriculum overload by creating new subjects in response to new social demands, many countries and regions are treating new social demands as cross-curricular themes or incorporating them into existing subjects”.

In addition, OECD (2020c) lists the concept of competency as a way to overcome the problem of curriculum overload, taking into account the international situation. For example, it lists the design of curricula related to “environmental education and sustainability” as a cross-disciplinary theme from the perspective of the United Nations’ Sustainable Development Goals (SDGs), the OECD’s Green Growth, and the increasing environmental, social, and governance issues. In addition, in order to ensure that children are prepared to live in an increasingly globalized and interconnected world in the future, it gives examples of cross-disciplinary themes such as “local and global citizenship and peace” from the perspective of developing global competencies. It points out that cross-disciplinary themes are used to promote children’s holistic growth more than traditional subject learning. In addition, examples of cross-disciplinary themes such as “health education, well-being, and lifestyle” and value-

based themes such as “moral and value education” and “culture, identity, and multicultural society” are also given. In addition, the following are cited as solutions to the problem of curriculum overload (OECD, 2020c):

- Set limits on study time.
- Carefully define the language that states what will be included in the curriculum.
- Focus on “key concepts” and “big ideas” that lead to conceptual understanding, rather than cramming too many subjects and topics into a given time.
- Adjust the amount and format of curriculum documents to change the perception of overload.

In Japan, “integrated learning (inquiry) time” was newly established and implemented as part of the school curriculum in the 1998 curriculum guidelines. Considering how to overcome curriculum overload from the perspective of competency, a cross-disciplinary theme, such as “local and global citizenship and peace”, is an example of a competency-centered “integrated learning (inquiry) time” curriculum. And as a policy for organizing the Japanese school curriculum, the current 2017 curriculum guidelines state that there is a method of teaching subjects that emphasizes conceptual understanding using knowledge and skills. This teaching method requires students to “key concepts” which is acquired conceptual knowledge or “big ideas” which is transferable knowledge, and so can be used to overcome curriculum overload.

Discussion

Redesigning the Curriculum

In this chapter, I will consider curriculum redesign, focusing on the reorganization of subjects, from the perspective of overcoming curriculum overload, one of the contemporary challenges when designing a curriculum. The OECD (2020b) states that the process of curriculum development differs depending on the context of each country and changes over time. On the other hand, it establishes principles that are common to all countries and guide curriculum design that will not change over time. It explains that using these principles can bring students closer to the destinations and goals of the Learning Compass. It lists 12 principles and further classifies them into the following four categories (see Figure 5).

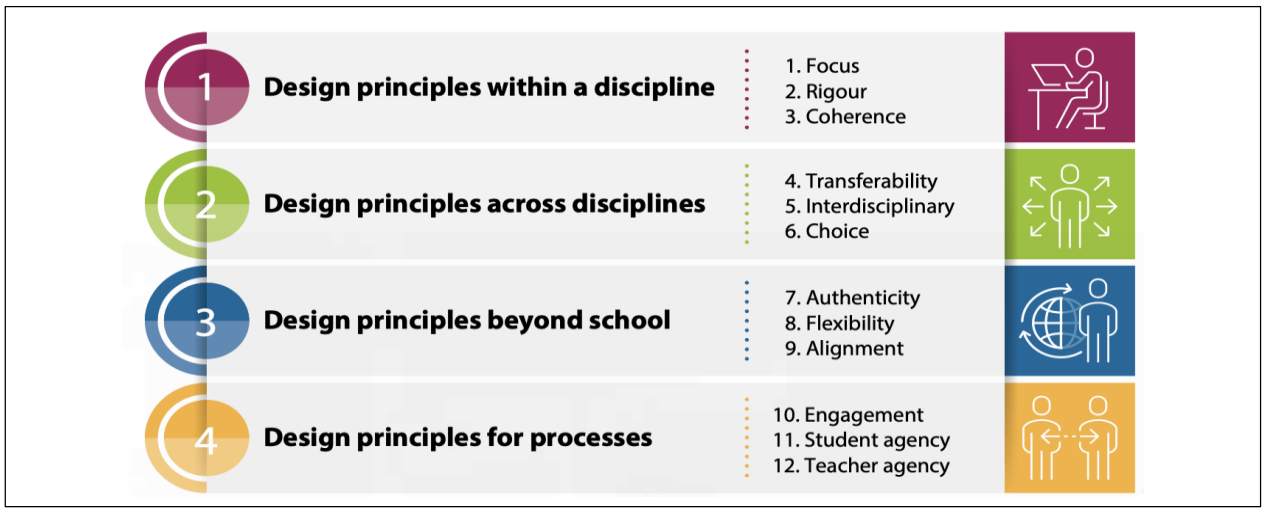

Figure 5. Curriculum design principles. Source: OECD, 2020b.

These four categories are: (1) intra-subject design principles, (2) cross-subject design principles, (3) design principles open to society, and (4) process design principles. In this chapter, based on the explanation of OECD

(2020a), I will consider curriculum redesign by taking up one principle from each category that will solve the problem of curriculum overload, as mentioned in the previous chapter, and examining curriculum redesign.

Design principles within a discipline. Focus: This principle is the focus of the curriculum. Focus is the introduction of a relatively small number of subjects to be studied at each grade level to ensure deep and high-quality learning. It is said that by dealing with cross-disciplinary and interdisciplinary subjects, focus is created, and important themes and concepts can be taught across subjects without increasing class time or subjects. OECD (2020b) explains that Norway's efforts can be used as an example to focus on developing children's competencies within the three themes of important life skills, democracy and citizenship, and sustainable development, which are major areas that cross subjects.

It also points out that the issue of focus needs to be considered more in situations where new societal demands may force an increase in the number of subjects (OECD, 2020b). In such situations, it will mean increasing the number of subjects and teaching materials. However, there are concerns that increasing the number of subjects will create a curriculum that is broad in scope but shallow. It also states that curriculum revisions need to be used as an opportunity to promote focus and avoid overcrowding the curriculum.

It has been pointed out that a focused curriculum provides an educational framework that emphasizes the concept of "teach less and learn more", allowing children to learn the content more deeply (OECD, 2020b). It has also been explained that a focused curriculum clearly and concisely identifies the main concepts that children should master, allowing teachers, children, and other stakeholders to understand what children are learning and why they are learning it (OECD, 2020b).

As mentioned above, focusing is considered to be one of the design principles that contributes most to reducing learning content, and is particularly effective in solving the problem of curriculum overload. It is important to note that in order to reduce the learning content of the curriculum, it is necessary to gain support from more stakeholders by making the curriculum justifiable.

Design principles across disciplines. Interdisciplinarity: A curriculum that is oriented towards interdisciplinary and relevance allows students to realize how a topic or concept can be related to other topics or concepts in one or more subjects, and can also be applied outside of school (OECD, 2020b). The current Japanese curriculum guidelines (Ministry of Education, Culture, Sports, Science and Technology, 2017) incorporates this approach and addresses social issues under the concept of curriculum management. These curriculum guidelines not only promote an interdisciplinary approach between related subjects, but also ensure time for interdisciplinary learning in the curriculum. The "integrated learning (inquiry) time" provides students with an opportunity to make connections across subjects. A curriculum that is oriented towards interdisciplinary and relevance is similar to the curriculum of F High School mentioned above.

This principle is also necessary to reduce curriculum overload, especially to embed values in the curriculum. To embed values in the curriculum, it is necessary to recognize the relationships contained within the curriculum and the relationships between learning and teaching that occur there. This also means that how children acquire values through the curriculum is supported by the behaviour and actions of others both inside and outside school.

Summary: The Significance of the Curriculum for Developing Agencies

As a summary of the discussion on curriculum so far, in this chapter, we would like to consider the significance of the curriculum at the end. In this regard, Shirai (2020) makes some suggestive claims, so I will first introduce them. Based on the OECD's definition of "curriculum" in the Education 2030 Project, Shirai (2020)

states that the significance of curriculum-based education is "the effort to respond to the demands and expectations of society regarding what kind of abilities should be developed in the human resources that will support the country's future, and to realize this" (p. 234). Based on this, he summarizes the roles that the curriculum plays into three. The first is the function of building a learning foundation for the curriculum. In other words, it is the role of providing a basic academic foundation for learning in the next school stage and as a member of society. The curriculum is used to create a foundation for children to exercise their agency. The second is the function of maintaining democracy. The role of the curriculum is to acquire appropriate judgment skills through various learnings, guarantee individual rights, and maintain social responsibility and social well-being. The last function is national integration. The curriculum has the role of sharing the language, traditions, culture, norms, and ethics that each country and region holds dear (Shirai, 2020).

In addition to these three roles, I would like to take a more micro view of the role of the curriculum, including establishing an individual's identity and expanding an individual's life options. Shirai (2020) also states that the curriculum is a condensation of people's various wishes, hopes, dreams, expectations, traditions, and culture for the children who will carry the country's future. Combining Shirai's (2020) and my own views on the role of the curriculum, we can say that the curriculum is indeed an educational tool for all people, children, and adults, to create the well-being of individuals and society.

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