
A Check Sheet Approach to Improving Teaching Practice of ESD in Social Studies; With a Case Study of “Japan’s Farmers” for 5th Grade Elementary School Students

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1. Introduction

In what way should we plan and implement ESD (Education for Sustainable Development) teaching in Social Studies, Geography and History, and Civics? Recently there has been a growing movement to investigate the relationships between the above subjects and ESD¹⁾. Representative of this movement are the activities of research group for geographical education for sustainable development led by Shuichi NAKAYAMA, who has also been involved in promoting ESD as a member of the Japanese National Commission for UNESCO²⁾ in the Japanese Society for Geographical Sciences, and the efforts of Isoo TABUCHI to promote ESD from an international understanding, human rights, peace, and world heritage perspective³⁾.

The research of the group led by Professor NAKAYAMA is focused on clarifying the concepts of ESD in UNESCO, gathering case studies from geography classes and creating opportunities to practice ESD, as well as compiling information on ESD trends in other countries. Professor TABUCHI’s research is focused on assessing the significance of ESD and creating concrete opportunities to practice ESD through Education for International Understanding, Human Rights Education, Peace Education, and World Heritage Education, which are all closely related to various components of social studies.

The above are both valuable studies which discuss the importance of ESD, clarify the concepts of ESD, and develop and present case studies of lessons in social studies and other related subject areas. However, what is required in today’s classes is an investigation into practical measures and policies in order to address the confusion surrounding ESD, such as how to adjust daily teaching practices to incorporate ESD into classes such as Social Studies, Geography

and History, and Civics; what and how to teach to achieve ESD; and what concepts and skills must be acquired to see the results of ESD.

ESD, itself, includes the cultivation of a variety of concepts, skills and attitudes, but depending on the perspective the emphasis on each these elements may vary and their significance may require elaboration⁴⁾. For this reason it can be difficult to provide clear policies and measures on how to improve teaching practice by incorporating elements of ESD. To address this, this paper adopts a reductionist stance and proposes a check sheet approach to improving teaching practice in social studies whereby elements of education for sustainable development are incorporated into actual lessons through the creation and use of check sheets in a three-stage process. This three-stage process is detailed below.

- (1) Stage One: Select and categorize the minimal key learning outcomes of ESD into the groups of attitudes, concepts, and skills. Then organize these as the goals, content, and methods which will structure the teaching. In ESD the emphasis varies depending on the perspective, and there is a wide variety of claims made. So at this stage we find a point of commonality from among the various claims and then collate and categorize the minimal key learning outcomes of ESD into the groups of attitudes, concepts, and skills.
- (2) Stage Two: Create a matrix diagram for ESD teaching. When creating a lesson plan we usually have to consider what method we will use to teach the students and what content we will include in order to achieve our teaching goals. At this stage you take the key concepts and skills classified in Stage One and create a matrix diagram by entering them into the content and method groups respectively.
- (3) Stage Three: Use the matrix diagram as a check sheet to analyze our teaching practice so far, to identify the direction to follow in order to improve our teaching practice, and to incorporate more elements of ESD teaching practice into our lessons than ever before.

Although ESD is relatively new, a variety of teaching practices which align with ESD have previously been adopted in Social Studies, Geography and History, and Civics. In this paper I propose a plan to improve teaching using the three-stage process above to address which parts of existing teaching practices are in-line with ESD and to identify where these existing practices can be improved by incorporating more elements of ESD, by visualizing these issues in a matrix diagram and by using a check sheet.

2. Creating the Check Sheet⁵⁾

(1) Select and categorize the minimal key learning in ESD into the groups of attitude, concepts, and skills.

a) Determining the Aims and Attitudes that Should be Fostered as a Result of ESD

According to the 'National Implementation Plan for the United Nations Decade of Education for Sustainable Development' issued by the Japanese Ministry and Agency Liaison Council for the United Nations Decade of Education for Sustainable Development, the objective of ESD is 'to ensure that anyone can benefit from quality education, and that the principles, values, and actions necessary for promoting sustainable development are incorporated in all forms of education and learning environments, thus bringing about a revolution of action for realizing a sustainable future with respect to the environment, economy, and society.'⁶⁾ From this goal the desired change we hope for in our children is a change in behavior to enable the realization of a sustainable future with respect to the environment, economy, and society. In order to embody this hope and prepare students to achieve a sustainable society, the teaching aims for ESD should be ensuring that students have the ability to identify issues regarding sustainability and the attitude to want to try and resolve these issues, along with the necessary concepts and skills to do so. Teaching aims should be established as follows.

Teaching aims: To prepare students to achieve a sustainable society, by ensuring they have the ability to identify issues regarding sustainability, the attitude to want to try and resolve these issues, and the necessary concepts and skills to do so.

By teaching students the concepts and skills necessary 'to achieve a sustainable society' through ESD, I hope that it will also foster the attitude necessary to identify issues and a desire to resolve them.

b) Selecting the Concepts

Next I select and categorize the minimal key concepts which should be emphasized in order to achieve a sustainable society. Here I compiled and organized the concepts presented in the Education for Sustainable Development Resource Review Tool⁷⁾ from the United Kingdom Department for Education and Skills (DfES), in the 'National Implementation Plan for the United Nations Decade of Education for Sustainable Development' issued by the Japanese Ministry and Agency Liaison Council for the United Nations Decade of Education for Sustainable Development⁸⁾, and in Osamu ABE's paper 'The

Development of Environmental Education for a Sustainable Society⁹⁾. In Table 1, Osamu ABE's proposals are marked A to E, the Ministry and Agency Liaison Council concepts are marked i. to v. and the DfES's concepts are marked a. to f. After consideration of the commonalities and similarities between the various concepts the following were established as the minimal key concepts for ESD, I. Human Dignity, II. Responsibility to Future Generations, III. Coexistence with nature, IV. Social and Economic Justice, V. Cultural Diversity.

Table 1: ESD Concepts

Proposed by Osamu ABE	Ministry and Agency Liaison Council	United Kingdom DfES	Selected Concepts
A Human Dignity	i. Human Dignity	a. Citizenship & stewardship	I. Human Dignity
B A fair and just society: socially and economically	ii. Non-exclusion iii. Equal Opportunities	b. Quality of life, equity & justice	IV. Social and Economic Justice
C Responsibility to future generations		c. Needs & rights of future generations	II. Responsibility to Future Generations
D Man as part of nature	iv. Respect for the Environment	d. Carrying Capacity e. Interdependence	III. Coexistence with Nature
E Respect for cultural diversity	v. Respect for diversity	f. Diversity	V. Cultural Diversity

Regarding the ordering of the concepts I. to V., I took into consideration the fact that awareness of issues regarding people's lives and circumstances, such as I. Human Dignity and II. Responsibility to Future Generations, is something that develops over time. I also took into account international trends¹⁰⁾ which suggest that awareness of issues concerning sustainability, such as III. Coexistence with Nature, IV. Social and Economic Justice, and V. Cultural Diversity, starts with awareness of environmental issues and develops in to an awareness of social issues which then leads into an awareness of issues of cultural diversity.

To help draw a concrete image of concepts I. to V. given in Table 1, in Table 2 I have extracted a number of example keywords from the 'National Implementation Plan for the United Nations Decade of Education for Sustainable Development' issued by the Japanese Ministry and Agency Liaison Council for the United Nations Decade of Education for Sustainable Development.

c) Selecting the Skills

In order to select the minimal key skills necessary to create a sustainable society I compiled and organized the ESD skills presented in the Education for Sustainable Development Resource Review Tool, in the 'National Implementation Plan for the United Nations Decade of Education for Sustainable

Development’, and in the paper ‘The Development of Environmental Education for a Sustainable Society.’ In Table 3, Osamu ABE’s proposals are marked A to E, the Ministry and Agency Liaison Council proposals are marked i. to iv. and the DfES’s proposals are marked a. to e. After consideration of the commonalities and similarities between the various skills, the following were established as the key skills for ESD, 1. Critical Thinking, 2. Systems Thinking, 3. Futures Thinking, 4. Applying Skills to Issues, 5. Action Skills, 6. Communication Skills.

Table 2: Example Keywords for the Selected ESD Concepts¹¹⁾

Concepts	Example Keywords
I. Human Dignity	Human rights, poverty, health, gender, peace, improving welfare, etc.
II. Responsibility to Future Generations	Intergenerational equity, resource conservation, natural environment & global environment, etc.
III. Coexistence with Nature	natural environment & global environment, ecosystems, climate change, finite nature of resources, etc. (ecological sustainability)
IV. Social and Economic Justice	Poverty, economic gap, north-south dilemma, fair-trade, corporate responsibility, market economy, development, etc. (social sustainability)
V. Cultural Diversity	Cross-cultural conflict, multicultural understanding, social tolerance, human rights, etc. (spiritual and cultural sustainability)

Table 3: ESD Skills

Proposed by Osamu ABE	Ministry and Agency Liaison Council	United Kingdom DfES	Selected Skills
A. The ability to show insight into issues and to think critically B. The ability to think and feel for yourself	i. Different ways of thinking - with emphasis on the power of critical thinking	a. Critical Thinking	1. Critical Thinking
C. The ability to understand the environmental capacity of your local area, your country and the earth	ii. Understanding issues and their background, systems thinking with emphasis on multifaceted and comprehensive points of view	b. Systems Thinking	2. Systems Thinking
D. The ability to envision your ideal society	iii. Data & information analysis abilities	c. Futures Thinking	3. Futures Thinking
E. The ability to generate practical solutions		d. Applying Skills to Issues	4. Applying Skills to Issues
F. The ability to act personally		e. Action Skills	5. Action Skills
G. The ability to express your thoughts & feelings H. The ability to acknowledge and respect diverse values I. The ability to work with others to achieve things.	iv. Communication abilities		6. Communication Skills

Table 4 provides a definition of the skills 1. to 6. from Table 3. The definitions provided for skills 2. to 5. are from the Education for Sustainable Development Resource Review Tool¹²⁾. However, no definition was given for skill 1. in that tool so I have employed the definition proposed by Yasushi MICHITA¹³⁾. The definition for skill 6. was taken from the dictionary.

Table 4: Definition of the Selected ESD skills

Skill	Definition
1.Critical Thinking	The ability to see the true nature of things by taking a multi-angled approach without being distracted by appearances and superficial detail
2.Systems Thinking	The ability to think about and describe the nature and consequences of complex relationships
3.Futures Thinking	The ability to explore the links between their own lives in the present and those of others in the past and future, and to identify probable and preferable futures
4.Applying Skills to Issues	The ability for learners to arrive at their own conclusions about what needs to be done to address relevant issues
5.Action Skills	The ability to practice skills for advancing sustainable development
6.Communication Skills	The ability to convey emotions, intentions and information

(2) Creating a Matrix Diagram (Check Sheet)

In this figure, the concepts and skills selected for students to learn, which are described in the above section b) and c), can be positioned under teaching method and content as actual lesson components. Then by using this content and method, the ESD goals should also be achievable. At this point I create a matrix diagram as shown in Figure 1 by positioning the concepts and skills to be learned in ESD under the learning content and methods. This matrix diagram can then be used to check existing lessons in social studies, geography & history, and civics, and as a check sheet for use in improving lessons.

In Figure 1, there are blank spaces at the end of each row and at the bottom of each column. In ESD there are many differing perspectives and interpretations so these blank spaces can be used when teachers feel that the key skills and concepts selected are insufficient, whereby allowing for flexibility in their teaching practice. At this stage, using the blank spaces provided, a teacher could add the concepts and skills they wish to focus on in to the matrix in order to reflect their own sense of ESD.

Method Content	1. Critical Thinking	2. Systems Thinking	3. Futures Thinking	4. Applying Skills to Issues	5. Action Skills	6. Communic- ation skills	Blank	Blank
I. Human Dignity								
II. Responsibility to Future Generations								
III. Coexistence with nature								
IV. Social & Economic Justice								
V. Cultural Diversity								
Blank								
Blank								

Figure 1: Check Sheet for ESD Content and Methods (Matrix)

3. Using the Check Sheet – Lesson Analysis and Improvement

Using the case study of 'Japan's Rice Farmers', a lesson to 5th Grade elementary school students conducted by Hidenori YAMAUCHI from Sakaide Elementary School attached to the Faculty of Education, Kagawa University, I can use the aforementioned check sheet to analyze and plan improvements for the lesson.

(1) Case Study of a Practice Lesson

a) **Unit name:** 'Japan's Rice Farmers'(5th Grade, Elementary School)

b) **Unit lesson plan** (14 lessons total)

Part 1: 'The Japanese staple food is rice?' (3 lessons)

- 1) Discuss the reasons why people eat more rice in Japan than overseas, draw up a study plan.
- 2&3) Questionnaire and rice bag collection. Examine the varieties and origin of rice, leading on to a discussion on what kind of rice consumers demand.

Part 2: 'The day Sanuki rice became a major brand' (5 lessons)

- 4&5) Using the farmers' almanac, examine the process used to produce Sanuki rice.
- 6) Explore the problems faced in the production of Sanuki rice.
- 7) Listen to a talk by a lecturer from the Faculty of Agriculture in Kagawa University who developed the 'Prefecture's first variety of rice for rice wine – Sanuki Yoimai' and discuss related non-farming activities.
- 8) Investigate the work of JA (Japan Agricultural Co-operative) regarding the management and shipping of rice once grown.

Part 3: 'Japan's rice heaven: the Shonai Plains' (3 lessons)

9) Predict reasons why the Shonai Plains is popular for rice growing, investigate the features of the land and the climate.

10&11) split into groups to investigate and discuss why the production of Shonai rice has increased.

Part 4: 'Large rice fields and Small Rice fields' (3 lessons)

12) Conduct a thorough review into whether or not the process to make Shonai rice could be applied to Sanuki rice in light of the differences in environmental and social conditions.

13) Despite the many problems surrounding agriculture, an increasing number of people are aspiring to work in that field, suggest why this may be, and then verify with interviews.

14) In the form of a letter to the various people who have helped you learn about Japan's farms, write an overview of what you have learned about Japan's farms and what your thoughts are concerning agriculture in the future.

c) Mr. YAMAUCHI's Practice Lesson (Lesson13)

- Goals of lesson13: Even as the problems facing agriculture get more and more severe, the number of agricultural workers is increasing. Shonai rice production provides a clue as to the reasons why this is, and the reasons can be verified by interviewing a variety of people studying at agricultural universities and involved in incorporated collective farming organizations.
- Record of lesson13

Timing	Teacher Questions	Student Responses
0 min	<p>◆ Display a graph showing a decrease in the number of agricultural workers</p> <p>○ Yesterday we talked about producing rice to sell. Today let's look at another large problem facing Sanuki rice. That is a decrease in the number of agricultural workers. It would be great if we could come up with a solution to this issue.</p> <p>○ What kind of people do you think are starting jobs in agriculture for the first time.</p> <p>○ The number of agricultural workers has decreased nationally as well as locally in Kagawa Prefecture. So do you think the number of people starting jobs in agriculture for the first time is decreasing or increasing? What do you think?</p> <p>○ Let's have a look at the national trends.</p> <p>◆ Show the resource 'Trends in the Number of New Agricultural Workers (National)'</p> <p>○ What about Kagawa Prefecture? Can you complete this graph for Kagawa Prefecture's trends?</p>	<p>○ I think some people leave school and follow in their family's footsteps.</p> <p>○ I think some people retire from their job and then start to work in agriculture.</p> <p>○ I think it is decreasing.</p> <p>○ I thought the number of people choosing jobs in agriculture was decreasing, so I was surprised to see that it</p>

- Right, shall I show you what is really happening?
- ◆ Show the resource 'Trends in the Number of New Agricultural Workers (Kagawa Prefecture)'

The number of people who have quit farming has increased but at the same time the number of people starting jobs in agriculture for the first time has also increased. Let's look at this second increase today. There must be a reason why the number of people starting jobs in agriculture for the first time has also increased. Let's make this a study topic.

- ◆ Write the study topic on the board and get students to copy it into their books.

What sorts of things will provide clues to help predict the reasons why?

Right, before you write your predictions is there anything you want to ask?

People who chose farming as a job can be separated into three distinct types.

A: People who come from a farming family and enter farming after attending somewhere like an agricultural university.

B: People who come from a farming family and do an unrelated job first, then enter farming upon retirement.

C: People who don't come from a farming family, and quit another job to enter farming for the first time.

So firstly I interviewed people who fitted in the type A description above and asked them "Why did you choose farming?"

1 st place	My family owned rice fields & I followed in my family's footsteps	42 people
2 nd place	Because I like working with nature	40 people
3 rd place	Because depending on the methods used it can be lucrative	11 people
4 th place	Growing food for people gives me a purpose in life	10 people
5 th place	Harvesting gives me joy	7 people
6 th place	Because laws and mechanisms have been developed to save farming	3 people

※Questionnaire Results (Survey results from the Prefectural Agricultural University). Show only the first place results and cover the rest.

What does this tell us?

However, the number of type A people is not really increasing. In fact the number of type B and C people is increasing. Do you think type B and C farmers would give the same reasons?

I see. You think B and C type people would have different reasons from A type people. Maybe their reasons would be like these five reasons I have hidden here.

I will hand out some information about B and C type people. Using this information to help you, please write your predictions in your book.

was actually increasing.

- I don't think it is decreasing much.
- I think it is decreasing in Kagawa Prefecture.
- I think it is decreasing because there are no large areas of farmland like the Shonai Plains.

It is increasing. Why is the number of people choosing jobs in agriculture increasing?

Why is the number of people starting jobs in agriculture for the first time increasing?

We could consider the good points of farming that we have learnt about.

Interviewing the guys that work at the rice centre and the guys that work on the farms might give us a hint.

What type of person chooses to work in agriculture?

The most common reason is that their family owns lots of rice fields and they are following in their family's footsteps.

It would be a waste not to follow in your family's footsteps when your family owns lots of rice fields anyway so this reason makes sense.

We want to know what the next five reasons are.

No, I think the reasons would be different. C types, in particular, are choosing

10 min

- ◆ Distribute information about Types B and C.
- ◆ Give additional explanation regarding the hard to understand parts of the materials distributed.

○ Why did you predict that the number of people wanting to work in agriculture is increasing?

20
min

○ Let's categorize your predictions.

- ◆ Categorize the predictions on the blackboard.

'Because they like working with nature'

'Because mechanisms have been developed
to support farming families'

'Because they think they can make lots
of money using new methods'

○ Firstly let's look at the next five reasons from the people who went to agricultural university.

Do you think the reasons you predicted will be there?

○ Right let's listen to an actual interview with a B-type person and a C-type person

○ How do you feel about these reasons? Tell us what you feel about them and how these relate to your predictions.

○ At the moment the number of enthusiastic people who are entering farming in Japan for the first time is rapidly increasing, right? In addition to this, laws and mechanisms have been put in place so that the country, prefectures, local districts and people from the JA organization will support them.

40
min

agriculture even though they have no rice fields.

○ I also think they would be different. B type people have rice fields but they don't work in agriculture until they leave their jobs so I think there must be other reasons.

(Students write their own ideas in their books)

○ I think it might be because they like nature. That was written in the B Type handout, 'Tired of working in the city'.

○ I also think it is because they are attracted to working with nature. I think this is because when B type people worked in companies they had the endless worry of being cautious about workplace relationships but when they work with nature the work may be physically difficult but they can do it alone.

○ I think the reason why C type people are attracted to farming is because mechanisms have been put in place for the country, prefecture and JA to support agriculture. Please see the handout. It says that new laws have been passed meaning that from this year people who work in large farms won't be able to receive assistance.

○ Maybe because they thought they would use the fallow rice fields

○ It says that C type people approach farming like a business, so I think that they think they can make lots of money by using new methods.

○ They are basically the same reasons. I think reasons two to six are stronger reasons for B and C type people rather than the 'because I have a rice field' reason.

○ My predictions were correct.

○ We guessed the reasons 'because I like nature' and 'I want to make money' but they also thought about the consumers that eat the rice.

○ I learned that they are introducing new farming practices.

50 min		
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(2) Analyzing Lessons and Implementing Improvements

a) Using the check sheet to analyze a lesson

In Part 4 of Mr. YAMAUCHI's practice lesson13, the whole lesson was about issues related to 'II. Responsibility to future generations' such as ensuring future food security with a focus on the increasing number of new farm workers, and it is clear that pursuing this topic helps to develop '4. Applying Skills to Issues.' Therefore, when these details are entered into the Figure 1 check sheet a tick would be entered in cell A as shown in Figure 2 below.

In the second half of the lesson students were asked to predict reasons why the numbers of new farm workers has increased and to relate this question to the interviews conducted. Some students selected answers such as 'I like working with nature' which are closely related to 'III. Coexistence with Nature,' and students were led to use '2. Systems Thinking' to work out the causality for the increase in the number of new farm workers. So when these details are entered into the Figure 1 check sheet a tick would be entered in cell B as shown in Figure 2 below.

Given that ticks have been entered in cells A and B in the check sheet for Part 4 of Mr. YAMAUCHI's practice lesson13, we can see that his lesson already incorporates elements of ESD teaching.

Method Content	1. Critical Thinking	2. Systems Thinking	3. Futures Thinking	4. Applying Skills to Issues	5. Action Skills	6. Communication skills
I. Human Dignity						
II. Responsibility to Future Generations				A		
III. Coexistence with Nature		B				
IV. Social and Economic Justice						
V. Cultural Diversity						

Figure 2: Analysis of Part 4 of Practice Lesson13

b) Clarifying lesson improvements using the check sheet

Next I look at ways to restructure lesson13 to incorporate more elements of ESD, by mixing and matching the check sheet content I. to V. and the methods 1. to 6. and checking whether there is space to incorporate them into the lesson without impeding the lesson flow.

In this paper I decided that improvements C and D below, created by combining methods and content as above, could be incorporated into the lesson to improve it.

Improvement C: When exploring the reason for a decrease in the number of farm workers students are asked ‘Why do you think the number of farm workers is decreasing?’ By incorporating a full investigative process regarding this question, students should be able to investigate the issue of ‘IV. Social and Economic Justice’ by using 2. Systems thinking.

Improvement D: By discussing what can be done to stop the decline in the number of farm workers and how to increase the number of new farm workers, students should be able to use ‘4. Applying Skills to Issues’ and ‘6. Communication Skills’ to study ‘IV. Social and Economic Justice’

When entering improvements C and D on the check sheet you can tick three cells in Figure 3. These are marked as C and D below.

Method Content	1. Critical Thinking	2. Systems Thinking	3. Futures Thinking	4. Applying Skills to Issues	5. Action Skills	6. Communication skills
I. Human Dignity						
II. Responsibility to Future Generations				A		
III. Coexistence with Nature		B				
IV. Social and Economic Justice		C		D		D
V. Cultural Diversity						

Figure 3: Review of Mr. YAMAUCHI’s Practice Lesson to Improve it by Incorporating More Elements of ESD

(3) Improved model lesson incorporating elements of ESD

I have created an improved model lesson which incorporates more elements of ESD by incorporating the above improvements C and D into Mr. YAMAUCHI’s practice lesson. The bold text shows the alterations to the lesson.

Specifically, improvement C involves asking students, ‘Firstly, why do you think the number of farm workers is decreasing?’ at the start of the lesson, showing the students materials concerning the factors behind the decline in farm workers, and having students examine the issue. This process allows

the students to discover the cause-and-effect relationship at play by using 2. Systems Thinking about IV. Social & Economic Justice.

For improvement D, near the end of the lesson the teacher directs the students as follows, 'Let's discuss and present our ideas on how to stop the decline in the number of farm workers and how to increase the number of people starting farming for the first time.' Students then discuss the issues using the concept IV. Social and Economic Justice in order to consider various solutions. This develops 4. Applying Skills to Issues and 6. Communication Skills.

In this manner the lesson is improved by incorporating more elements of ESD.

[Improved Model Lesson Incorporating More Elements of ESD]

Time	Teacher Questions	Student Responses
0min	<p>◆ Display a graph showing a decrease in the number of agricultural workers</p> <p>○ Yesterday we talked about producing rice to sell. Today let's look at another large problem facing Sanuki rice. That is a decrease in the number of agricultural workers. It would be great if we could come up with a solution to this issue.</p> <p><i>○ Firstly, why do you think the number of farm workers is decreasing? ◆ Handout materials concerning the factors involved in the decrease in the number of farm workers.</i></p> <p>○ What kind of people do you think are starting jobs in agriculture for the first time.</p>	<p><i>○ Perhaps it is because of reducing revenue.</i></p> <p><i>○ Perhaps it is because of the aging population and declining birth rate. (Improvement C)</i></p> <p>○ I think some people leave school and follow in their family's footsteps.</p> <p>○ I think some people retire from their job and then start to work in agriculture.</p>

...This part of the lesson plan is unchanged...

65min	<p>○ Firstly let's look at the next five reasons from the people who went to agricultural university.</p> <p>Do you think the reasons you predicted will be there?</p> <p>○ Right let's listen to an actual interview with a B-type person and a C-type person</p> <p>○ How do you feel about these reasons? Tell us what you feel about them and how these relate to your predictions.</p> <p>○ At the moment the number of enthusiastic people who are entering farming in Japan for the first time is rapidly increasing, right? <i>Let's discuss and present our ideas on how to stop the decline in the number of farm workers and how to increase the number of people starting farming for the first time.</i></p>	<p>○ They are basically the same reasons. I think reasons two to six are stronger reasons for B and C type people rather than the 'because I have a rice field' reason.</p> <p>○ My predictions were correct.</p> <p>○ We guessed the reasons 'because I like nature' and 'I want to make money' but they also thought about the consumers that eat the rice.</p> <p>○ I learned that they are introducing new farming practices.</p> <p><i>○ Putting mechanisms in place to protect farming.</i></p> <p><i>○ Buying local produce.</i></p> <p><i>○ Buying crops for high prices (Improvement D)</i></p>
90min		

5. Conclusion

Schools are busy places. There are a number of types of education to incorporate into lessons including environmental education, careers education, information technology education and others, so introducing new educational content is done so with a sense of burden. Even if the value of that content is recognized, the fact is that incorporating the new content does not always go smoothly. ESD is no exception to this. In order to mitigate this problem it would be desirable to have an approach that positions ESD as an extension of daily educational activities and allows teachers to specifically investigate how to incorporate ESD into existing lessons. In that sense, the check sheet approach I am proposing in this paper should allow for ESD to be incorporated relatively simply and without burden. Furthermore, although the check sheet is proposed as a method to improve existing lessons in this paper, it may also be useful when planning new lessons or as an evaluation index to assess teaching outcomes.

In the model lesson given in this paper, I added new steps to Mr. YAMAUCHI's practice lesson and this in turn increased the required class time. To deal with this, it may be possible to adjust the time the students have to work on things during the lesson.

Some may question the validity of the concepts and skills selected for the purposes of this paper. However, this paper attempts to offer an approach for ESD practice from a reductionist standpoint. In an attempt to be flexible to the diverse views on what constitutes ESD I have left blanks in the rows and columns of the check sheet, and this is one way of addressing the above issue.

Finally, although the check sheet in this paper is used to improve lessons, it need not only be used in lessons. It could also be a useful tool for checking and confirming that the annual curriculum has a suitable balance of content (concepts) and methods (skills). When promoting ESD in educational activities throughout the school, this check sheet could also serve as a tool to examine what elements of ESD to incorporate into which classes and subjects, and at what time, as well as what educational activities to conduct and where. In that sense, the check sheet is a tool with the potential to promote the systematic implementation of ESD in a variety of situations.

By using such a reductionist approach I also believe that this check sheet could be used for the incorporation of other types of education.

Notes

- 1) For example in January 2008, a report from the Central Council for Education strongly encouraged the creation of a sustainable society, and a 'sustainable society' topic was

included in social studies in the Junior High School Curriculum in March 2008 and in geography and history in the High School Curriculum in March 2009. The theme of the 58th (FY2009) Annual Conference of the Japanese Association for Social Studies was 'Creating lessons with a sustainability theme.' The theme of the symposium at the 60th Annual Conference of the Japan Society for Social Studies Education FY2010 was 'What can social studies do to create a sustainable society?'

- 2) NAKAYAMA Shuichi, WADA Fumio, YUASA Seiji (Eds.). (2011). *Teaching Practices for Geography and Sustainable Societies*. Kokon Shoin
- 3) *Is World Heritage Education possible? – Towards Education for Sustainable Development*. Higashiyama Shobo. (2011).
World Heritage Education and its sustainability – an ESD perspective. *International Education*, vol. 15. (2009). etc.
- 4) This is exemplified by the fact that in Japan the literal translations of the English term ESD (Education for Sustainable Development) differ depending on the organization. Examples include 'sustainable development education', 'education for the purpose of sustainable progress', and 'education for the purpose of sustainable development.' These trends and findings are also noted in the preparatory meeting report, *Research on Education for Sustainable Development in Schools*, Basic Research Department, Curriculum Research Center, National Institute for Educational Policy Research. (2009). and in FUKAI, Shigeko, (2005). *Theories on a Sustainable World*. Nakanishiya Shuppan.
- 5) The creation of a check sheet was proposed in the research findings of the interim report for the *Research on Education for Sustainable Development in Schools*, March 2011. pp. 63-70. Those findings were based on the project research being conducted by the National Institute for Educational Policy Research, *Research on Education for Sustainable Development in Schools*, by KADOYA Shigeki, Research Leader, FY2009-2012.
- 6) *National Implementation Plan for the United Nations Decade of Education for Sustainable Development*. p.3. Japanese Ministry and Agency Liaison Council for the Decade of Education for Sustainable Development (2006).
- 7) With reference to items from the key concepts of the *Education for Sustainable Development Resource Review Tool* issued by the United Kingdom Department for Education and Skills (DfES). http://www.teachernet.gov.uk/sustainableschools/tools/tools_detail.cfm?id=5 as at September 29, 2008. The translation of this tool appeared in *Research on Education for Sustainable Development in Schools*, Basic Research Department, Curriculum Research Center, National Institute for Educational Policy Research. pp. 87-108. (2009).
- 8) *National Implementation Plan for the United Nations Decade of Education for Sustainable Development*. p.7. Japanese Ministry and Agency Liaison Council for the Decade of Education for Sustainable Development. (2006). In the plan they are listed as values but in this paper for the purposes of lesson planning we have adopted them as content (concepts).
- 9) ABE Osamu. (March 2008). *The Development of Environmental Education for a Sustainable Society*. Education Outlooks, Japan Educational Research Institute, p.33. In Abe's report they are also listed as values but in this paper for the purposes of lesson planning we have adopted them as content (concepts).
- 10) From Sato, Masahisa. (1998). *Review Paper on the Concept of Environmental*

Education (IGES Working Paper). The Institute for Global Environmental Strategies.

- 11) The keywords in Table 2 include words such as 'human rights' and 'natural environment' which would match a number of elements of the concepts in the table. However since the elements of the selected ESD concepts are closely related to one another it is not necessary to match the elements and keywords one to one.
- 12) Key concepts from the paper detailed above, United Kingdom Department for Education and Skills (DfES).
- 13) From MICHITA, Yasushi. Various Concepts of Critical Thinking. --What do they think it is? Bulletin of the College of Education No. 59, pp.109-127, University of the Ryukyus
- 14) From the proposal documents for 'Japan's Rice Farmers' a social studies research lesson presented at the 91st Sakaide Elementary School Education Conference on May 24, 2007 by Hidenori YAMAUCHI from Sakaide Elementary School attached to the Faculty of Education, Kagawa University