Learning Patterns for Self-Directed Learning with Notebooks

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Abstract

Pupils who live in this society characterized by rapid change are required to acquire the ability to learn by themselves more than ever. In this paper, we focus on self-directed learning with notebooks as one of the type of homework and an opportunity to have a practice of learning conducted by themselves and propose learning patterns for self-directed learning with notebooks as a tool to support such learning manner. The patterns is made based on tips extracted from interviews to students who use the patterns and practice this learning. And pupils join the making process of the patterns. This paper contains six patterns that especially reflect features of self-directed learning with notebooks, *List of Likes*, *Big Goals*, *Reflection Cycle*, *Focus Style*, *Wide and Deep* and *Pen and Papers*. The main targets of these patterns are students who are practicing self-directed learning. With these patterns, we would like to support pupils obtain the ability to learn by themselves through self-directed learning.

1. Introduction

In this society characterized by more and more rapid change, people are required to acquire an ability to learn by themselves more than ever [1]. That is because people are facing difficult and inexperienced problems and people are required to analyze the problem by themselves when the problem occurs and take actions to solve that [2]. People are required to learn things that are necessary for analyzing and solving the problem and actually act upon the solution.

It is said that an ability to learn by themselves should be learned in an early stage of learning. In the context of "Lifelong Learning" that learning continue all his/her life, the view of learning and the attitude towards learning in an early stage of education become strong factors to decide the quantity and quality of learning in life.

As a way to acquire the ability, it can be said that the best way to learn by themselves is having many experiences in practice. This is because people gain abilities from experiences [5]. In the scene of education, homework is regarded as a good way for practice. Generally, an assignment is a task based on the teacher's intention and plans [6]. However, this type of homework are pointed out that it has a bad influence on the growth of students, for example, decreasing their interests to academics [7]. In this paper, we focused on, self-directed learning with notebooks as a way of studying an ability to autonomously learn. Self-directed learning with notebooks is a learning style that students decide what to learn as homework at home [8]. In this paper we propose the learning patterns for self-directed learning with notebooks that were made with pupils who belong to a class at Toho Elementary School, TOHO GAKUEN, Tokyo, Japan. Students in the class practice this learning. We think pupils can reflect on their practices in the process of making patterns and self-directed learning with notebooks more effectively and more regulative.

2.Self-Directed Learning with Notebooks

Self-directed learning is a learning style that pupils/students decide on the contents they learn at home [8]. Pupils deepen what they learn at school and their interests, and then they write them down in their notebooks. It is one of the big characteristics of this learning that they can choose the contents that really fit them. There is no limitation on the contents. They can learn anything that they think it leads to their learning. They decide everything of their learning — even the way to make a notebook and to learn — they can numerously practice to learn by themselves in their daily lives. And their notebooks will be the tracks of their learning so we can improve their confidence on themselves and their attitude towards learning.

2-1. A Practice at Toho Elementary School

One class at Toho Elementary School, TOHO GAKUEN, Tokyo, Japan practiced self-directed learning with notebooks. One of the authors of this paper, K. Tsukahara, hoped that his pupils would enhance their lives through learning actively and contribute to their community by having good relationships within their society. This is the reason why he started this type of learning at his class. He had a class of fifth grade in 2012. The class consisted of 36 pupils and it was coeducation. He started that as a part of educational practice to foster pupils' ability to regulatively learn by themselves. He had the same students as sixth grade in 2013 so he kept this learning at his class.

He had his pupils prepare notebooks and told them about their homework. He told them that they could decide what and how to learn but they must take 40 minutes in fifth grade, 60 minutes in sixth grade for their homework and learn more than two pages as the standard. He collected pupils' notebooks in the morning, checked all of them and wrote comments or advice for learning on every notebook, then returned them before pupils went back to home. He keeps repeating this series of activity every day. And, he set the time that they showed their notebooks several times a week. Through this activity, they checked the way of learning and the growth each other.

At first of this practice, his pupils felt difficulty in learning in this way because it was far different from the ordinary style of homework that they had experienced until fourth grade and it continued every day. Though Tsukahara showed some examples of the page and the list of menu of this learning, it was difficult for his pupils to start smoothly without any limitations to what and how to learn.

Through continued practices, some pupils were able to work on this learning effectively and started to learn the ability to learn with regulation by themselves. We could see that they learned various and interesting contents in original ways, tried to reflect their learning by themselves and to improve them. Through the interviews to them, we could check that they felt like they could get a habit of learning by themselves through practices of this learning. Furthermore, we could also see differences of the quantity and quality of learning among pupils by differences of mind to learning that they had and time to learning.

We think we can see the problem of differences among pupils we could see in the practice of the class at Toho Elementary School that practices this learning. We think it is needed to make tools in order to share tips and knowledges of this learning style.
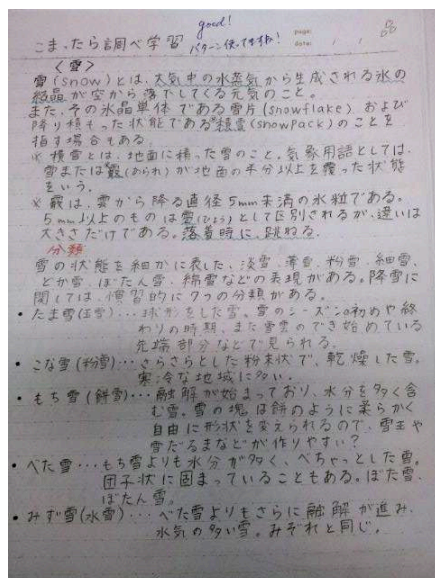
Fig.1 A Page of a Notebook of Self-Directed Learning with Notebooks at Toho Elementally School

3. Learning Patterns for Self-Directed Learning with Notebooks

In this paper, we propose the learning patterns that show tips of good practices of self-directed learning with notebooks. We made the patterns with pupils who practiced this learning through interviews. We aim that they realize effective self-directed learning with practicing with the patterns.

There are many accumulated patterns about pedagogy and learning, for example "Pedagogical Patterns: Advice for Educators"[9], "Patterns for Active Learning"[10] and "Learning Patterns" which written by Iba Laboratory [11][12][13]. We regard the patterns we propose in this paper as an extension of them, and it especially focuses on self-directed learning with notebooks. Besides, the patterns is made by tips of elementary school students and in the process they joined.

3-1. The Making Process with Pupils

The patterns was made based on know-how of effective self-directed learning extracted by interviews to pupils in six grade who practice self-directed learning at Toho Elementary School. We gave the students the opportunity to use these patterns and got feedbacks from them in the making process. We tried to make these patterns with pupils who were users.

Fig.2 shows an outline of the making process. The first interview was done two months before the completion of the patterns. We separated 36 pupils in the class into four groups of nine members and one university student who participated in each group. University students interviewed the pupils and asked what they learned and what they thought while doing the learning in order to know the real situation of self-directed learning. Here are examples of questions, "What do you think the important things in daily learning?" and "What do you do when you can't conceive the contents of learning?" After the interview, we gathered elements that we got from the interview in the way of Visual Clustering [14].

We wrote patterns from the elements and at the time we made a list of possible tips and didn't ask the pupils but Tsukahara. We did the 2nd and the 3rd interviews with pupils in order to check that they really practiced things of the list or not. We interviewed eight pupils selected by Tsukahara as who realized effective learning and two parents. We asked parents how pupils work at home, changes of pupils after they started self-directed learning and how parents joined in their learning.

After three times interviews, we handed out prototype patterns and had them practice self-directed learning with the patterns. We did this to check the patterns reflect their practices really and whether the patterns were useful one.

Three weeks after we handed out prototype of patterns, we had a workshop to get feedbacks for the patterns from pupils. In this workshop, we asked pupils how they thought whether the patterns were really important and whether they had done that before. And we asked the pupils to search for pages on which they guessed they used patterns and talked about how they used patterns with each other. In this workshop we separated 36 pupils into 6 groups and one university student participated in each group as a facilitator. After the workshop, we gathered their thoughts on the workshop, comments on the patterns and proposals of new patterns. A week after the workshop, we did final revise and then we completed making the patterns.

	Pattern Making Team*1	Pupils
Interview 1	- Interviewed pupils. - Separated 36 pupils into 4 groups. - Interviewed the tips of self-directed learning with notebooks in each group. - Asked questions like "What are important points for you?" and so on.	- Answered questions with showing their notebooks. - Reminded their practices.
Visual Clustering 1	- Clustered elements got in "Interview 1."	
Pattern Writing 1	- Started writing patterns with results of "Visual Clustering 1."	
Interview 2	- Interviewed to 8 pupils and 2 parents. - Separated 8 pupils into 3 groups. - Checked pupils to results of "Visual Clustering 1." - Asked pupils actually do what students heard form the teacher of the class.	- Answered questions with showing their notebooks. - Reminded their practices.
Visual Clustering 2	- Clustered elements got in "Interview 2."	
Pattern Writing 2	- Started writing patterns with results of "Visual Clustering 2."	
Complete First Version of the patterns	- Handed out the patterns to pupils.	- Started pre-using the patterns.
Pattern Writing 3	- Revised the patterns.	
Mini Writers' Workshop	- Held a workshop to pupils. - Got many feedbacks from pupils.	- Gave many feedbacks.
Pattern Writing 4	- Revised the Patterns following feedbacks got in "Mini Writers' Workshop."	
Fixed the Patterns	- Made booklets of the patterns. - Handed out booklets to pupils on the day of their graduation.	- Got a booklet of the patterns.

*1 University students and the teacher of the class.

Fig.2 The Making Process with Pupils

Fig.3 Mini Writers' Workshop

3-2. The Whole and Patterns

Here, we propose the whole image and patterns of self-directed learning with notebooks. Patterns in the whole image are arranged along the timing when each pattern appears. Each pattern is descriptions of secrets to do self-directed learning effectively and to realize the practice to learn by themselves. The six patterns we propose this time show features of self-directed learning strongest in nineteen patterns existed already.
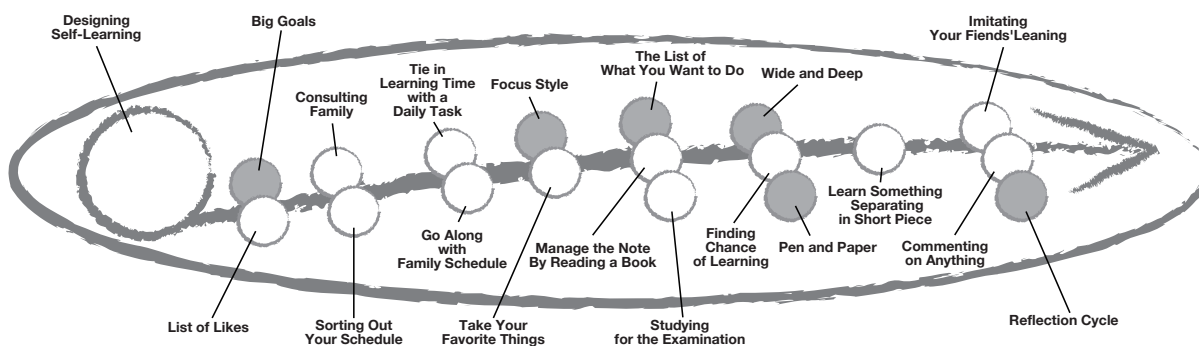

Fig.4 The Whole of Learning Patterns for Self-Directed Learning with Notebooks

No.	Pattern Name	No.	Pattern Name
0	Designing Self-Learning	10	Manage the Note by Reading a book
1	Big Goals	11	Studying for the Examination
2	List of Likes	12	Wide and Deep
3	Consulting Family	13	Finding Change of Learning
4	Sorting Out Your Schedule	14	Pen and Paper
5	Tie in Learning Time with a Daily Task	15	Learn Something Separating in Short Place
6	Go Along with Family Schedule	16	Imitating Your Friends' Learning
7	Focus Style	17	Commenting on Anything
8	Take Your Favorite Things	18	Reflection Cycle
9	The List of What You Want to Do		

Table.1 The List of Pattern Names

Each pattern is written for pupils who practice self-directed learning with notebooks. Each pattern consist of a possible *Problem* with *Force* which occurs in certain *Context*, *Solution* with *Action* as explanation in detail, and *Consequence* which may happen after using the patterns. We put *Pattern Name* that sum up content of the pattern and *Introductory Sentence* that supplement the content. These patterns are for children in sixth grade so we used easy expressions for children to understand easily.

List of Likes

Motivate yourself to keep learning

You want to design your self-directed learning.

▼ In this context

The number of your interests varies each day. Even if you find many interesting topics for one day's menu, it's hard to research them completely. In other hand, when you find few things, you have difficulty in writing the contents.

▼ Therefore

Make a list of seeds of the menu. Pick up one or a few things when you find many interests. Stock the others for the day when you can't discover such things. Make an order of priority based on how you research and keep your motivation.

▼ Consequently

You stock the menu, and you don't need to take much time to search it. You can work on your self-directed learning without worrying even when you meet few concerns and interests. You can motivate yourself to work with the list every day.

Big Goals

Not only "for the time being" but also "long-term planning"

You're keeping working self-directed learning.

▼ In this context

You find self-directed learning boring. The purpose of your work gets "submitting a note". Without planning, your work may become boring.

▼ Therefore

Think about your interests or what you should do, and make your long-term plan to the goal. Decide one day's menu of your self-directed learning, thinking of what you should do now. For example, it's good to study with a long-term plan for the next test in the class.

▼ Consequently

You come to have a good habit of planning your learning. You have a chance to realize what is necessary for you.

Reflection Cycle

Always reflect what you did

You keep working on your self-directed learning.

▼In this context

Things you have been learning don't connect each other. You are apt to just make the notebook. You see the importance of reflecting, but it's also important to go on the next, so you usually put off reflecting later. You also feel it boring.

▼Therefore

Work on reflecting as one of the menu. Take reflecting in the list of the menu. For example, summarizing things you learned in the class and reviewing questions you mistook before. It is good to write down your impression or opinion after you reflected.

▼Consequently

You can have a habit of reflecting and thinking deeply. When you treat reflecting as one of the menu regularly, you can put enough time in reflecting naturally.

Focus Style

Find your own styles to concentrate

You started working your self-directed learning.

▼ In this context

You can't concentrate on your work. It's hard to concentrate on your work for even an hour. In other hand, if you have a long break, you can't motivate yourself and feel bored.

▼ Therefore

Make a style that you can concentrate on your work. Try different types of time management and the menu over and over again. And then, you will find your own style that you can concentrate. For example, whether you have short breaks in an hour or not. Listening to others helps you to find your own styles.

▼ Consequently

You can concentrate on your work, then you come to feel interested in your self-directed learning and have confidence on yourself. When you imitate others' strong points, not imitating as it is but you can change them into your own knowledge fitting you.

Wide and Deep

Interests are unlimited

You keep working on your self-directed learning.

▼In this context

When you find just an answer to a question, you can't think about the theme deeply. It's not good to take a note about what you learned only in the class, because your studies don't spread. However, when you search about words concerning the matter, it's hard to stop searching.

▼Therefore

Search for your interest or the matter concerning with what you are now studying. Search about a word that you want to know while studying. Add things that you can't have enough time to learn that day to "**List of Likes**". Keep a balance between work and the others.

▼consequently

You can deepen your understanding about what you are interested in. By searching one theme, your knowledge spread widely. And then, when you connect one with the other themes, the contents of your list of what you want to do will increase.

Pen and Paper

Don't miss your idea.

You have a good idea.

▼ In this context

Even if you have a good idea, you will miss it soon when you go to bed or you are on your way to school. When you start working the self-directed learning, you can't use the idea.

▼ Therefore

Always have a small note and a pen that you can use quickly. Have a small note apart from a self-directed learning notebook. Always have it and take a note when you find something interesting. Review the contents in it when you can't come up with the theme of the study.

▼ Consequently

You don't forget your good idea. You have a good memory if you write it.

4. Conclusion

In this paper, we focused on self-directed learning with notebooks, a type of homework, as practices of learning by themselves and proposed learning patterns for self-directed learning with notebooks that write tips of this learning in a format of the pattern. The patterns are extracted by interviews to pupils practicing this learning and made in the process pupils joined. We think we developed a tool to support pupils' self-directed learning learning. We also think we could made a case of making learning patterns with its users.

We hand out the patterns to pupils as one of results of their learning on the day of their graduation. Now, we are working a research how they use their experience of self-directed learning with notebooks and the patterns to their learning in junior high school. And we are working tries to give the patterns to new pupils this year and work daily learning. We plan to make new patterns based on practice of new pupils and revise existed patterns. We would like to keep supporting to pupils in order for more and more pupils to realize effective learning through revising the patterns with them.

Acknowledgements

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