Designing Learning Environments for Meaningful Creativity: Creative and Playful Table

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1）Introduction

We have designed and conducted many workshops trying to foster creativity in everyday lives (1999, 2001, 2002), which have led us to develop a framework for creative learning based on playful and mindful engagement (1999, 2003, 2005).

We argue that creativity in the sense of creating something meaningful is not just about creating something new but about creating meaningful relationships with people and objects in one's environment. Designing learning environments for such meaningful creativity involves emotional and motivational as well as cognitive elements.

In this presentation, we will illustrate what we believe to be the essential elements for such a learning environment, by describing a workshop in which children tried to design a lunch for their mothers as guests. In the workshop, each child designed and created a dish of eggs cooked in an original and creative style, and a space and time to serve it, including a letter of invitation and a menu describing the important features of the original cooking.

The main essential elements for this workshop were:

1. A context of MOTENASHI, which means to serve someone with deep affection and care.
2. AJIWAU: which means to taste and appreciate not just physical objects such as the food itself but also the meaningful message embedded within the objects.

In this workshop, the children's affection to their mothers made a very meaningful context and motivation for creating and appreciating the occasion with care and attention. These elements, combined with a number of constraints carefully embedded in the tasks of cooking and space design, helped the children to perceive new potentials hidden within the ingredients and encouraged them to realize the potentials in order to create a meaningful occasion.

Based on this workshop and our framework, we will discuss the implication for the relationship between play and creativity.

２）Background in Japan

Since the introduction of the integrated learning into the Japanese school curriculum, a new style of class design has been required that goes beyond the boundaries between different subject areas.

In the traditional lecture-oriented teaching style using textbooks, the teacher designed and ran class lessons. However, we believe it is important that the children can design lessons and evaluate themselves in order that they can actively engage in class activities.

What we mean by "design" here is constructing possibilities for experiences in the time constraints of a class. Also, what we mean by "evaluation" is not to measure the children's masteries but is a tool for the children to know whether the goal of the activities they design has been achieved, as well as to give the children a useful basis for improving their design to achieve better activities. This means that the children conduct a formative evaluation of their own classes. Evaluative point of view will give the children an opportunity to reflect on and find meanings in their experiences.

The way the children's masteries are evaluated has been the target of as much interest as in the way the class is conducted. It would not be enough only to measure what they have achieved, in order to evaluate the children's abilities described above. Also, such kind of abilities would not be possible to instantly measure quantitatively.

In order to experiment with methods for individual evaluation, we incorporated the following activities into the workshop: explaining one's own learning activity to others; keeping records of the process in the activity; and reflecting on the whole activity as well as reporting about it. That is, we designed the activities in the workshop so that the goal and the process are naturally recorded during the workshop.

３）Designing the Workshop "Egg Omotenashi"

1. The workshop consisted of the four activities described below.
2. As an example of "Motenashi", which means to serve someone with deep affection and care, the participants were served with a dish of eggs from the staff.
3. They made plans for serving others, and tried cooking and tasted the result.
4. After they modified their plans and based on the tasting, they actually did their "Motenashi" to the guests.

They collected feedback on their "Motemashi" from the guests which they used to report on the activities they designed.

We conducted the workshop for 5 hours from 10am to 3pm each day for two days, 10 hours in total. From third to sixth graders participated. In the workshop site, we set up a cooking table with a gas stove and a water faucet for each group of 2 or 3 children. Also, a reflection corner was set up where photos taken during the workshop with Polaroid cameras were displayed on a table. Thus, we prepared two spaces in the room, one for expressive activities like designing the recipes or cooking, and one for reflecting on their own activities.

3-1) Receiving a "Motenashi" from the staff

We began the first day by welcoming the children and doing a "Motenashi" for them, so that the children can experience themselves a "Motenashi" which they were supposed to try themselves during the two day activities. The three staff members each cooked, in front of the children, a different dish using eggs, which the children were going use for their activities, and served to the children. Each staff member then drew a calligraphy of the name of the dish s/he had invented, explaining its meaning. Having the children experience this "Motenashi" from the staff members had the

following three purposes. Firstly, we wanted the children to understand that the cooking activity they were going to be engaged in is not just for eating but for doing "Motenashi". Secondly, we wanted to show the children that there are many different methods and orders for cooking eggs, such as breaking/not breaking the shell, beating/not beating, and boiling/frying/steaming. Lastly, we wanted each of the children to invent a new, original egg dish and its name.

3- 2) Design a Recipe and Experiment

In this activity, the children tried to design their own recipes and experiment. First, in order to have a clear image of the variety of cooking methods, they wrote down various egg dishes they knew on sticky notes and categorized them according to the cooking methods. Boiled egg, Omuraisu (a fried ketchup-flavored rice covered with a plain egg omelette), Oyako-donburi (simmered chicken, egg and onion on rice), Pudding, Chawan-mushi (meat and vegetables boiled in egg custard), Medamayaki (sunny side up), and many other names of egg dishes were mentioned and the children tried to organize them according to cooking methods. When we asked them whether they had ideas for their own cooking, most of the children seemed to have been able to form images for their creation. We then had each of the children make her/his own recipe, using a sheet with a chart they could fill out about cooking methods. The chart was designed so that the children could just select from illustrated choices like whether to break the egg or not, beat it or not, boil/fry or steam it, etc., according to the dishes they had imagined, and the sheet will show the procedure of cooking. They then could put sticky sheets with words like "salt", "sugar", or "soy-sauce" written on them, to show what ingredients to add at what timing. They could also use sticky sheets for writing original points and plans they came up with that would make the

recipes unique. We expected that this would naturally invite the children to invent and incorporate new ideas. The recipe was completed with a drawing of what the finished dish should look like.

Next, the children tried to see if they could cook what they intended, by following the recipes. The staff members supported their activities so that they could use knives and fire safely, and also that they could produce something as close as possible to what they had imagined. There was one facilitator for each table to help the children. The role of the facilitators was not to teach something but to support the children to think themselves and express with their own hands what they came up with. Everyone tried tasting what the children had cooked.

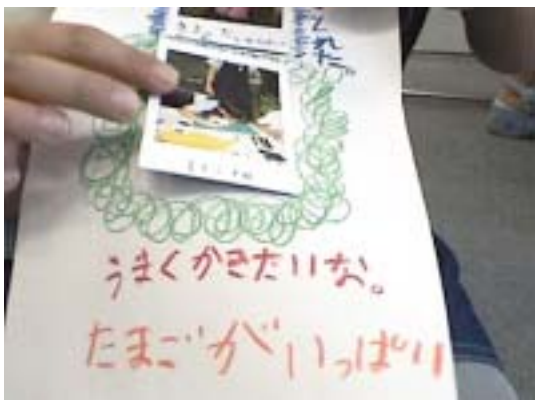
3-3) Gathering at the table for designing "Motenashi"

The activity for the second day was to cooking the dishes to serve the families and setting up the space. First, we reflected on the first day's activities, in order to make the best connection to the second day. We placed Polaroid photos of the activities of the previous day in the temporal order, and everyone selected three or four favorite photos and added descriptions of the photos. This activity of making photo albums by editing and commenting on the photos was intended to let everyone find meanings in the activities of the previous day. Then everyone engaged in activities like imagining reactions of the families when they tried the dishes they had designed, and making luncheon mats to be used by the families. These activities were intended to let the participants feel more strongly that the dishes they were going to cook were not just for eating but for serving someone special with affection.

After setting up the space by preparing a menu with calligraphy and a luncheon mat, everyone began cooking, following the revised recipe made during the

previous day. After cooking, all the children and the parents sat at a large table and enjoyed the meal together.

3-4) Reflecting on the activities to discover meaning



Finally, the children edited photo albums of the second day, like they did for the first day, in order to reflect on the activities of “recipe making -> trial cooking -> motenashi” and try to find out what these activities meant to themselves. While the children were working on the albums, the families and the staff members wrote down their reflections on the motenashi. These reflections were then returned to the children as the evaluation, Even though they were called “evaluation”, they were not meant to measure whether the motenashi was good or bad, but they were

rather meant to be like letters describing what the motenashi meant to the recipients. The children evaluated themselves by making the albums and received evaluations from others as the letters. We designed the reflection this way, so that the children could experience multi-layered meanings of the activities by reflecting on the activities during the two days from two different viewpoints,

４）Environments to foster creativity – their elements and design

4-1) Constraints for expression

To engage and guide the children into creative activities, we need a fascinating and challenging task. The purpose of and constraints in the task would determine whether the children feel motivated to challenge. They get bored by too easy tasks and overwhelmed by too difficult tasks.

This workshop was designed around cooking egg dishes. The reasons for choosing eggs as the material were that eggs are familiar to the children, that there are many different cooking methods, and that eggs can be cooked without any other major ingredients to make a complete dish. Thus, we expected that by being constrained to use only eggs as the ingredients, the children would be able to invent new ideas for cooking. In fact, only through the activity of enlisting the variety of cooking methods for eggs, the children could come up with what kind of dishes they wished to cook. The constraint of the egg seemed to have functioned well as an interesting and challenging task. We believe that we could strike a good balance between the constraint of the material and the freedom of invention and expression within that constraint.

We may feel that when we design expressive activities for children, it is better to design an environment that gives them more freedom of expression. However, a freedom of choice may result in a confusion of being unable to decide what to do and where to begin. The process of thinking is essential for a creative expression, and therefore, we would like to stress the importance of giving a clear purpose and letting the children try to express themselves within a set of constraints. We believe that designing activities in a learning environment to foster creativity requires consideration of thinking processes.

4-2) Expressions with recipients

The purpose of this workshop was to give the children experience of designing “motenashi”. Specifically, everyone served her/his family with an egg dish which she/he created. Designing a “motenashi” gave the children opportunities to think about the methods, space and time flow, such as how to cook, what kind of space to prepare and what timing to serve the food. Creating an original egg dish was turned into designing a space and time for serving the family. The children had a clear image of their families as the recipients of their “motenashi” while cooking as well as serving. It is meaningful that the workshop is not just for cooking but for doing “motenashi”.

Because “motenashi” always involves other people, it creates an opportunity to reflect on one’s activity through communication with others. We believe that this opportunity to have a viewpoint for evaluating one’s own activities is meaningful for an environment to foster creativity. By evaluating with each other whether the feelings expressed in a “motenashi” would be communicated to the recipient, they could modify their plans accordingly. Also, by evaluating whether the feelings were actually communicated to the recipients, they could evaluate their own activities.

Thus, this workshop attempts to have the children design their own activities through formative evaluation. As we mentioned before, through these activities, we expect that the children can learn to design their own learning (in various activities including in classrooms lessons) and opportunities for communicating with other people.

The existence of the family as the recipient would stimulate the passion to express. We believe also that by receiving feedback from others, one would be able to find meaning in the process of expression.

4-3) Devices to support thinking - The design of opportunities and tools

In this workshop, we embedded many situations and tools as devices to support thinking.

A) Device to construct time flow – recipe sheet

In order for the children to plan their cooking, we first gave them an opportunity to

categorize existing egg dishes. Then they designed recipe sheets to temporally organize their cooking methods, which enabled them to turn their cooking ideas into concrete steps.

B) Device to become aware of "motenashi" – menus and luncheon mats

In order that the children become aware that the cooking is for "motenashi", we incorporated activities to imagine the recipients of motenashi.

The children gave to the dishes they cooked names such as "marbling egg" and "fuwanitama (fluffy boiled egg)". Then they created "oshinagaki" (traditional style menu) with calligraphy. The goal here was not to write well and they did not practice beforehand, but they mentioned afterwards that they could write well. We interpreted this to mean that calligraphy helped the children to externalize their feelings they expressed in the names of the dishes.

Next, they made luncheon mats. They designed the mats as the space to place their dishes, by putting colored paper patches and drawing on them. For example, one boy drew an automobile. He explained that "my dad likes cars, so I wanted him to feel that the food was brought to him on the car". We can see that he was imagining how the guest would feel.

Then, just before starting to cook, we had the children write down their expectations about what the guests would say when they first tasted the food. They all mentioned that they expected the guests to say the foods tasted good. We expected that the children had in their hearts the motenashi as the purpose of the cooking when they began cooking.

C) The device for reflecting on the activities - my album

We designed the workshop so that the activities of the children became visible to them. One such device was the Polaroid photos taken during the activities. Each photo was marked with the time taken and placed in the temporal order at the reflection space. The children could freely go to see these photos during the activities, and we provided sticky pads so that they could write comments if they wanted to. The children liked photos in which they could see their activities and interaction with the friends, and wrote what they were saying and explanations. These photos were used not only for on-site reflection, but also for making photo albums after the activities.

Everyone selected three to four photos and laid them out freely to compile a “my album”.

For many of the children, describing the activities of the day in words seemed to be a hard task, and it would have been difficult for them to enjoy it. So, we decided to have them select and comment on photos, so that they could easily compile their experiences as a series of events and explain in the order of occurrences. That was “my album”. We prepared long sheets of paper the size of A3 cut in long halves, so that the children could naturally design temporal layout and view the flow of the day’s activities. Also, we constrained the number of photos that the children could use, so that the “highlights” for them were recorded.

We used the same size paper for the recipes and albums, so that we could later compile all of them into a booklet after the workshop. This enabled the participants to connect everyone’s experience and thoughts during the process of many activities. This booklet was designed as a device to reflect and share the whole workshop.

Through this act of visualizing the activities during the two days, we could find meanings in our experiences. Also, by printing the booklets and distributing to the participants, we could all share everyone’s experience. Publishing – printing/distributing – made the activities public – something we could share.

We have summarized environments to foster creativity in three points of view, but each of these points cannot be explained in isolation. They all have overlapping elements: having a recipient for expression is itself a constraint; a tool may be designed to make a constraint. We believe that it is necessary to combine many elements to construct an environment in which the participants can relate to people, objects, and space.

5) Discussion

We took approximately 200 photos with a Polaroid camera, which were used when the children wrote reflective comments between activities and at the end of the day, and when they compiled “my albums”. Based on what the children wrote in these reflective comments and my albums, we would like to discuss how various elements in the workshop affected the children, and what is important for a design of creative learning.

The children’s comments seem to show clearly that they felt very positively about each activity in the workshop and enjoyed what happened there.

As for the constraints for expression, the children seemed to have viewed the “eggs as the only ingredient” constraint as “many possibilities in eggs” rather than “eggs only”. As comments such as “By thinking together, we could come up with many ideas that we could not alone” and “What else? Ah, this one, too!” indicate, they seemed to enjoy coming up with a variety of cooking, We can see that they viewed the constraint as a fun challenge in which they could generate new ideas. These positive attitudes can be related to their experiencing three different egg dishes in the “omotenashi” they received from the staff, and also discussing together different ways to cook eggs.

As for the tasting of their trial cooking, their comments were either praising the others or thinking how to improve next time. They often praised each other’s cooking: “Everyone cooked fantastic dishes!!”, “Yum yum!”, “Great cooking by everyone! Super delicious!”. Many also commented compassionately about cooking of other children, mentioning specific points about different aspects such as naming, ideas, cooking methods, and tastes: “great idea to paste seaweed with butter!!”, “Boiled egg in an omelet sounds simple but unique. Great discovery!”, “Great name and great taste too!”. About their own trial cooking, their comments included specific plans for how to improve, such as “A little shocking that the inside was not fluid. I’ll try 4 minutes next time.”, “The caramel got hardened. Tomorrow, I’ll pour it while hot.”, “Big mistake! What to do tomorrow? (followed by four concrete plans)”, “It’s important to press firmly!!”, and “Less soy-sauce, and add sesame-oil, too”, instead of abstract expressions like “I’ll try hard” or “I’ll do better”. Rather than taking failures negatively, they made plans for what to do.

Everyone invented a new egg dish. For example, “Maki-maki egg” was a boiled egg wrapped inside an omelet. Both boiled egg and omelet are very popular and familiar ways to cook eggs but combining them resulted in a novel cooking. Right after she cooked it and put it on a plate, she cut it into halves and showed to everyone. She probably had such an image for serving when she came up with this cooking method. “Marbling egg” was a boiled egg with its yolk and white mixed in a marble-like pattern. Its inventor tried to make it by making a tiny hole on the shell and mixing inside with a thin stick. She wanted it to look just like an ordinary egg but is surprising when someone breaks the shell. It was very difficult to make a marble pattern she wanted, and she mentioned afterwards “I’ll probably try it again when I come home. I think I can make it better.” Most dishes were not very complicated, but those amateur chefs with little cooking experience found the right temperature and timing by careful experimentation. Cooking naturally requires creativity and a spirit to enjoy challenges, both in what to cook and how to cook it.

In their comments predicting how their parents would react to their “omotenashi”, they wrote “Like. Delicious. Thank you!”, “Like. You cooked it yourself!”, “She will say it tastes good, great job.” “She will be surprised and say it’s interesting.”, and “Smiling face”. Everyone seemed to believe that their parents would be happy about what they had done.

Also, they sometimes made comments during the activities which indicated that they were conscious about the recipients of their “motenashi”, such as, “I wonder how I should present this pudding to my mum.” and “I practiced how to serve it.” After serving, a child commented “I was glad that my mum was so happy, so I chose the photo of the moment for my album.” These comments indicate the effectiveness of treating the family as an important element in the design who receive the “omotenashi”

and try the food.

When asked how they selected the photos that they used for their my-albums, they mentioned “I chose photos showing I’m working with my friends.”, “I chose photos to show when I was drawing”, and “I wanted to show what I was making”, indicating that they used the photos to relate to other people and treated the albums as something to show to others.

Their comments also indicated that the recipients of the “motenashi” were not the only important people in the children’s mind. Among their comments in every phase, many mentioned the other children who they worked together. They commented on not only what they did and praise about the other’s cooking, but also how they felt about the relationships with the each other, often using the word “everyone”. In designing the workshop we placed the recipient of “omotenashi” as central target for expression, but the children seemed to find very meaningful relationships with each other who shared the process together.

As shown in the children’s comments, they seemed to take every activity actively, enjoy and be satisfied. We consider these positive states of the mind to be closely related to the existence of others who positively accept their expressions.

Here we would like to quote from our keynote presentation (Ueda, et al. 2006): In her detailed studies on personal theories people have, Dweck (2006) compared people with “fixed mindset “, viewing one’s abilities as fixed, and people with “growth mindset”, viewing one’s abilities as expandable. She found that someone with a fixed mindset tends to focus on how others evaluate oneself, on “looking smart” and try to avoid failures, whereas someone with a growth mindset tends to focus on how one can learn from an experience and is willing to face difficult challenges.

We believe that this concept of “fixed vs. growth mindset” can be usefully extended to many other aspects of human activities including creativity.

If one views oneself as not someone with a fixed set of properties but as someone whose potentials can be expanded by his/her own actions, then it is likely that one would also view other people and objects in one’s environment as equally flexible and expandable. One would try to see potentials and possibilities in other people and objects, what they can be, rather than what they are. With such a view, one would focus on how one could connect between oneself, other people, space and objects, in order to create something new.

We have called such a view a "playful mindset", or "playful spirit" (Mudpie Unlimited, 1999) to emphasize its dynamic nature. From a playful mindset, creativity is no longer viewed as a personal ability which one has or does not have. Though the study of creativity has been traditionally concerned with individual entities such as one's ability or its development, here we mean creativity an emergent process in which people and objects interact with each other to discover new meanings. A creative process is viewed as emergent, constructive and relational, a play in which one plays a role. One's attention would no longer be wasted in focusing on one's own ability to behave creatively, or to "look" creative.

The children's comments in this workshop tended to take their actions positively, using words like "I can do it" "It will go well", and they seemed to enjoy making relations with the other people, objects, expressions, to think about and create something new. We can interpret these to indicate that the children had growth, rather than fixed, mindset. Also, we hypothesize that the mindset is not a fixed property of a person but is something that can change in different situations. For example, someone with a fixed and closed mindset might become opened in a situation and get a growth mindset, flexibly accepting differences. That is, mindsets can be considered to be flexible in relationships with what surround us.

In our workshop, we hypothesize that the children's mindsets were shifted toward "growth" in the relationships with the "expressions" such as cooking, calligraphy, and albums, "everyone" who could sympathize with each other's process of expression, and the "family" as the goal of the activities who accept their expressions. Accepting oneself means being able to creating flexible and creative activities, as well as creating positive and playful relationships with the others. This holds in the reverse direction, namely, a positive and playful relationship with others would make one's expression more creative. Thus, creating a rich and meaningful expression in an environment which is designed with well-balanced tools, constraints, and relations with others, would naturally lead to a playful and growth mindset. Also, an open relationship with others with a growth mindset would naturally lead to a rich and meaningful expression.

We would like to argue that it is important for the design of a playful and creative learning, to have open relationships with other people. For an environment

for creative learning, we believe mindsets expressed by the keywords like “motenashi” and “ajiwau (to taste/feel deeply)” that can be carried into everyday lives are important. Being creative makes your mind playful, and being playful in turn makes you creative. In order to foster creativity, it is necessary to have an environment in which one can become playful, which in turn requires not only the physical conditions of constraints and tools, but also appropriate communication to build relationships with other people.

References

Playful Pieces, Mudpie Unlimited, & Child Research Net 1999, Child Research Net

Learning Art Project -Cultivating Learning Sensibilities-, Ueda, N., et al. (2006), Keynote presentation in "The Third International Symposium on Child Development - CREATIVITY & PLAY: Power, Purpose, Possibilities"