

Advantages of Using Mobile Devices in Learning Situations



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1. Introduction

- 2 aspects of the use of mobile devices in learning
 - m-learning environments
 - LMS, Drills, Game type's contents, etc.
 - Use as learning tools, similar to pencils and notebooks
 - Collecting information, Searching, etc.



2. Characteristics of each aspect

- m-learning environments
 - Precedence purpose types
 - Systems and applications have constructed on the basis of learning design for the achievement of the learning purpose
- Use as learning tools
 - Backseat player types
 - By the suitable method for activity, the existing function is utilized effectively



★Food Education System

Regional Disaster
Prevention SNS System



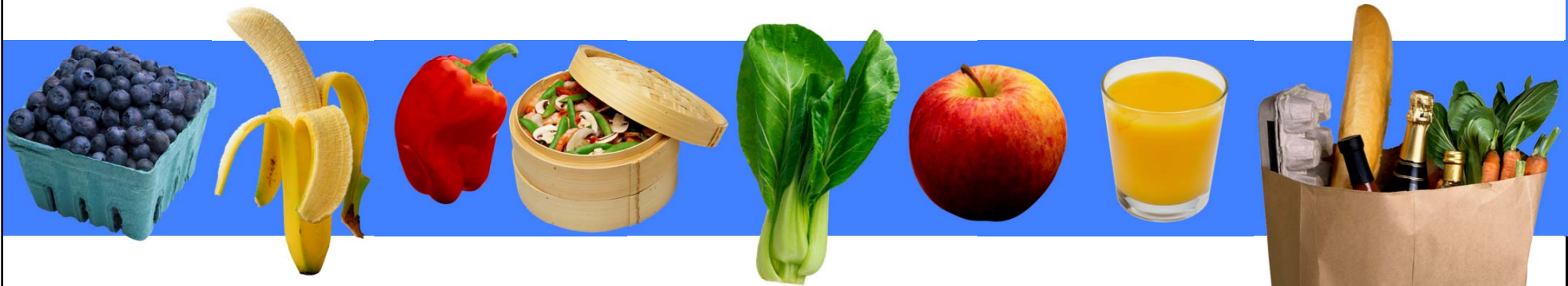
3. Examples of m-learning environment

Food Education System

- Background
 - Rich and varied diet
 - Diet problems
 - Irregular eating
 - Nutritional imbalances
 - Overeating
 - Excessive dieting



Bad eating habits causes health problems



- To live a healthy life, people need to learn good eating habits
 - Target and aims
 - People who are not recognized diet problems
- ↓
- Become aware of issues in eating habits
 - Make a start to learn good eating habits
 - Entry for good eating habits

Learning Design

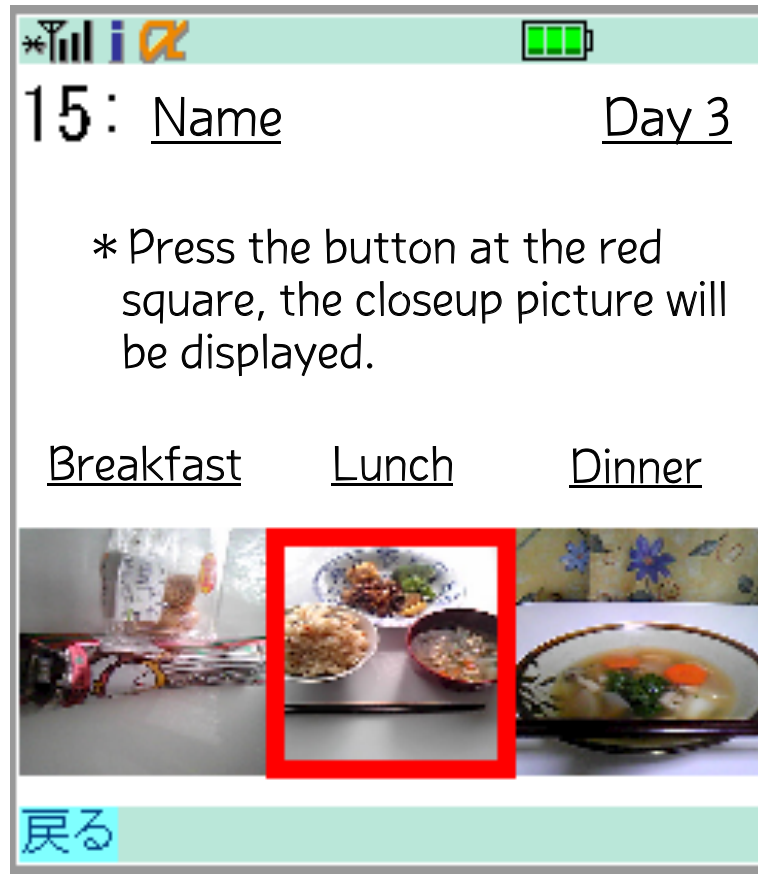
	Learning Design	Functions	Aims
Task	Self-recognition	Meal records (photos, comments)	Pay attention to daily meals
	Knowledge acquisition	Quizzes and explanations	Enrich knowledge
History	Learning by reflection	Referring to own histories	Encourage self-recognition
	Learning by contrast	Referring to others' history	Hint to improvement
	Motivation increase	Point-based game	Enjoy activities

Task module



- Records of daily meals by a mobile phone camera with comments
- Selection-type quizzes
- Free comment description
- Explanations of food and meals

History module



- Check and review own activity histories and others (meal records and points)

Experiment

Dec. 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

- Experimental period: One week
- Target: 10 University students

Day	Experiment description
Day 1	Operation instruction and trial Check of eating habits Pretest
Day 2 -Day 6	Food education with our system 1.Meal record (breakfast lunch, dinner) 2.Quiz or free comment (three per day) 3.Bits of knowledge (three per day)
Day 7	Posttest Questionnaire on system Questionnaire on food, meals and eating habits

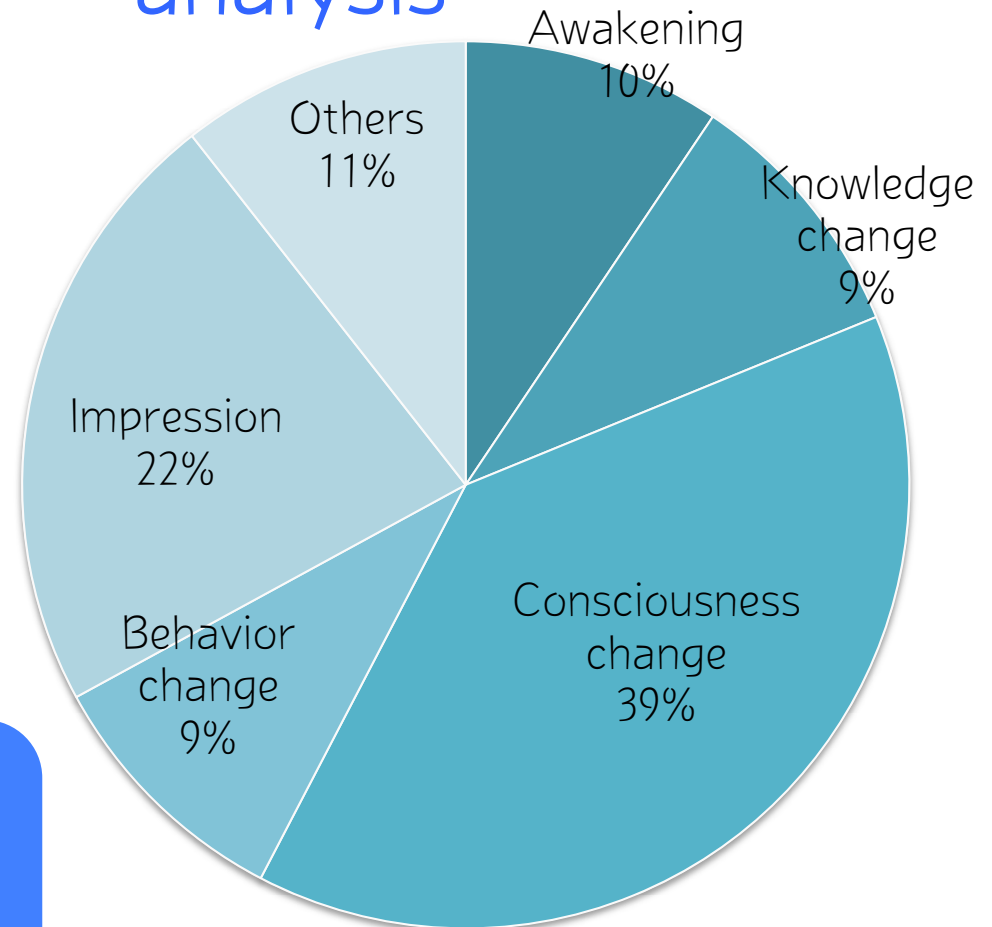
Results(1)

- Questionnaire results

- All participants had changed in attitudes and knowledge
- 40% said: great changes (in both items)

Aware of food, meals and eating habits

- Free comments analysis



Results(2)

- Meal records analysis
 - 6 participants : visible changes

Have breakfast
Get a balanced diet
Get nutritious foods

A's Breakfast



First two days



Last two days

Food Education System



★Regional Disaster Prevention SNS System



3. Examples of m-learning environment

Regional Disaster Prevention SNS System

- Background

- Japan has many earthquakes
 - In a big disaster, information of the region is lacking
- Neighboring human relations have diluted



In a big disaster, it is difficult to know disaster situation and to help each other

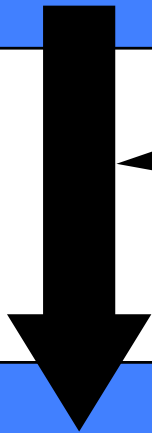


- Need to support to know the disaster situation and build daily human relationship
- Aims
 - The preparation for prevention of disasters in the neighborhood and a town association
 - Daily human relationship
 - Sharing community resources
 - Support of relief activities in a time of disaster

Regional Disaster Prevention SNS System Design

Normal Situation

Preparation for disasters by sharing family information (family structure, occupation, chronic disease or handicap) among local residents



Familiar system is effective in disaster situation

Disaster Situation

Support of residents' quick and exact relief activity by telling damage information (safety confirmation, injury, request of rescue) mutually

Normal mode(1)

- Sharing family information



Normal mode(2)

- Map



Disaster mode(1)

- Sending information of a victim of a disaster

Name: Kazuo Sato
Urgency: High
Situation: Confined

Location information

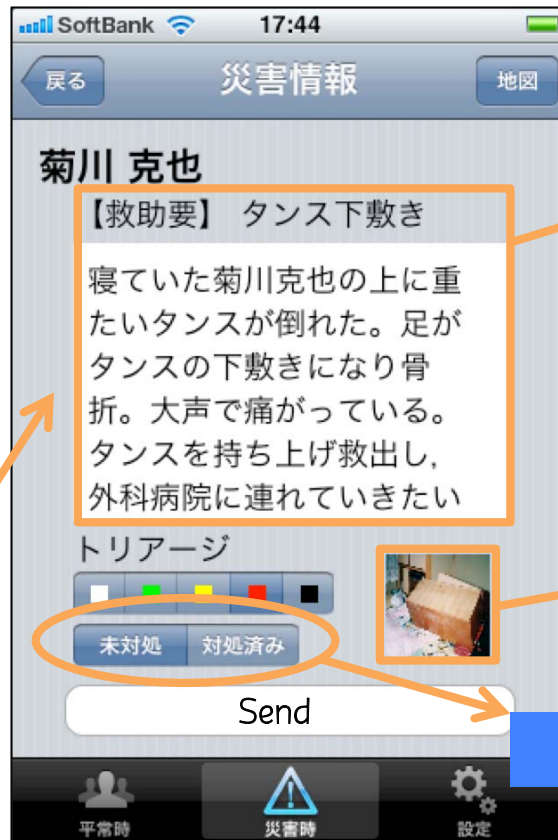
Free description

Disaster mode



Disaster mode(2)

- Cooperation between groups



Not yet or Finished

Disaster mode(3)

- Receiving damage information from a public institution

IMPASSABLE
This road has chapped



Experiment



- Educational Simulation
- Targets: 64 junior college students
(4 × 16 groups)
 - Experimental groups :
8 groups used the Disaster Prevention SNS System
 - Control groups:
8 groups did not use

Procedure

Roll	Outline	
Casting	<ul style="list-style-type: none"> Submitting scripts of character's family information 	
<u>Normal Situation :</u> Information exchange	Experimental group	Control group
	<ul style="list-style-type: none"> Referring to 3 another family information <u>by iPhone (SNS system)</u> 	<ul style="list-style-type: none"> Referring to 3 another family information <u>by a paper script</u>
	<u>Talking task: Exchanging information each other face to face</u>	
Earthquake occurrence	<ul style="list-style-type: none"> Intensity 6 upper Submitting damage information about own character' s family 	
<u>Disaster Situation :</u> Discussion	<ul style="list-style-type: none"> Reporting damage information to others 	
	<ul style="list-style-type: none"> Sending and receiving damage information <u>by iPhone</u> 	<ul style="list-style-type: none"> Exchanging damage information <u>face to face referring a paper script</u>
	<u>Talking task : Discussing relief activity face to face referring damage information</u>	

Results

- Increase in efficiency of talks

[Average]

	Experimental groups	Control groups
Normal Situation	12.9min.	16.5min.
Disaster Situation	14.1min.	21.6min.

The SNS system led to time shortening of talks

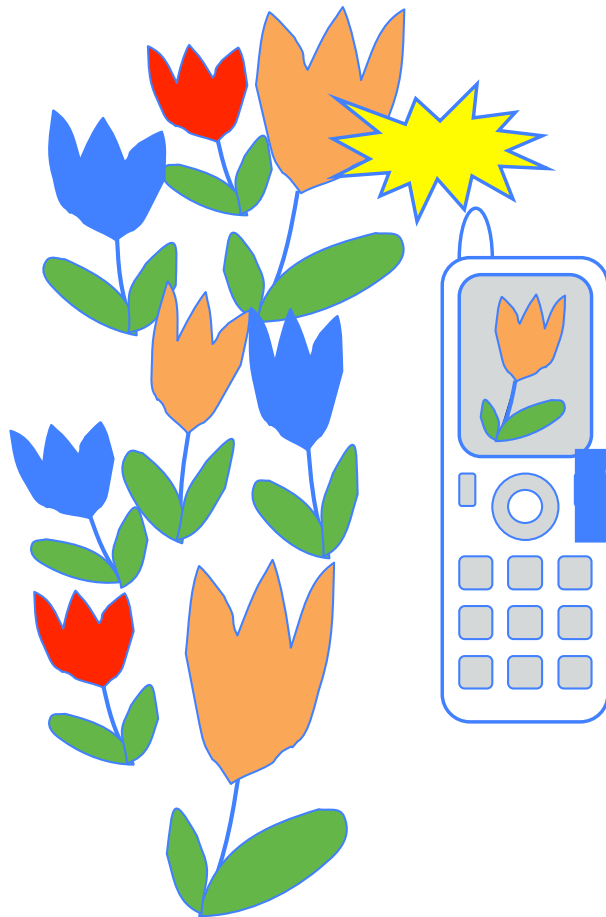
clippicKids



4. Examples of use as learning tools

clippickKids : Photo sharing system

(2002-2008)



E-mail

Web Page

2年ろくみせんようページ>

きせつがちがいをくらべよう ~夏から秋へ~: 2003/10/15

- From: <すべて> [1ばん] [2ばん] [3ばん] [4ばん] [5ばん] [6ばん] [7ばん] [8ばん] [9ばん] [10ばん] [14ばん] [15ばん] [16ばん] [17ばん] [18ばん] [19ばん] [20ばん] [武田先生] [黒田先生(25ばん)]
- Date: <すべて> [2003/10]

22まい:

[x1 - x2] [▼あたらしいじゅん - ▲ふるいじゅん] [全選択 | 全クリア] → [いちらん表示 (小)] [ノート表示 (大)]

No.329 From: 3ばん Date: 10/15 11:06		No.326 From: 6ばん Date: 10/15 11:05		No.302 From: 6ばん Date: 10/15 11:00		No.294 From: 6ばん Date: 10/15 10:59
No.286 From: 6ばん Date: 10/15 10:58		No.244 From: 6ばん Date: 10/15 10:50		No.230 From: 6ばん Date: 10/15 10:46		No.199 From: 6ばん Date: 10/15 10:41
No.162 From: 6ばん Date: 10/15 10:32		No.148 From: 6ばん Date: 10/15 10:29		No.138 From: 6ばん Date: 10/15 10:28		No.130 From: 6ばん Date: 10/15 10:26
No.119 From: 6ばん Date: 10/15 10:24		No.112 From: 6ばん Date: 10/15 10:22		No.107 From: 6ばん Date: 10/15 10:21		No.099 From: 6ばん Date: 10/15 10:18

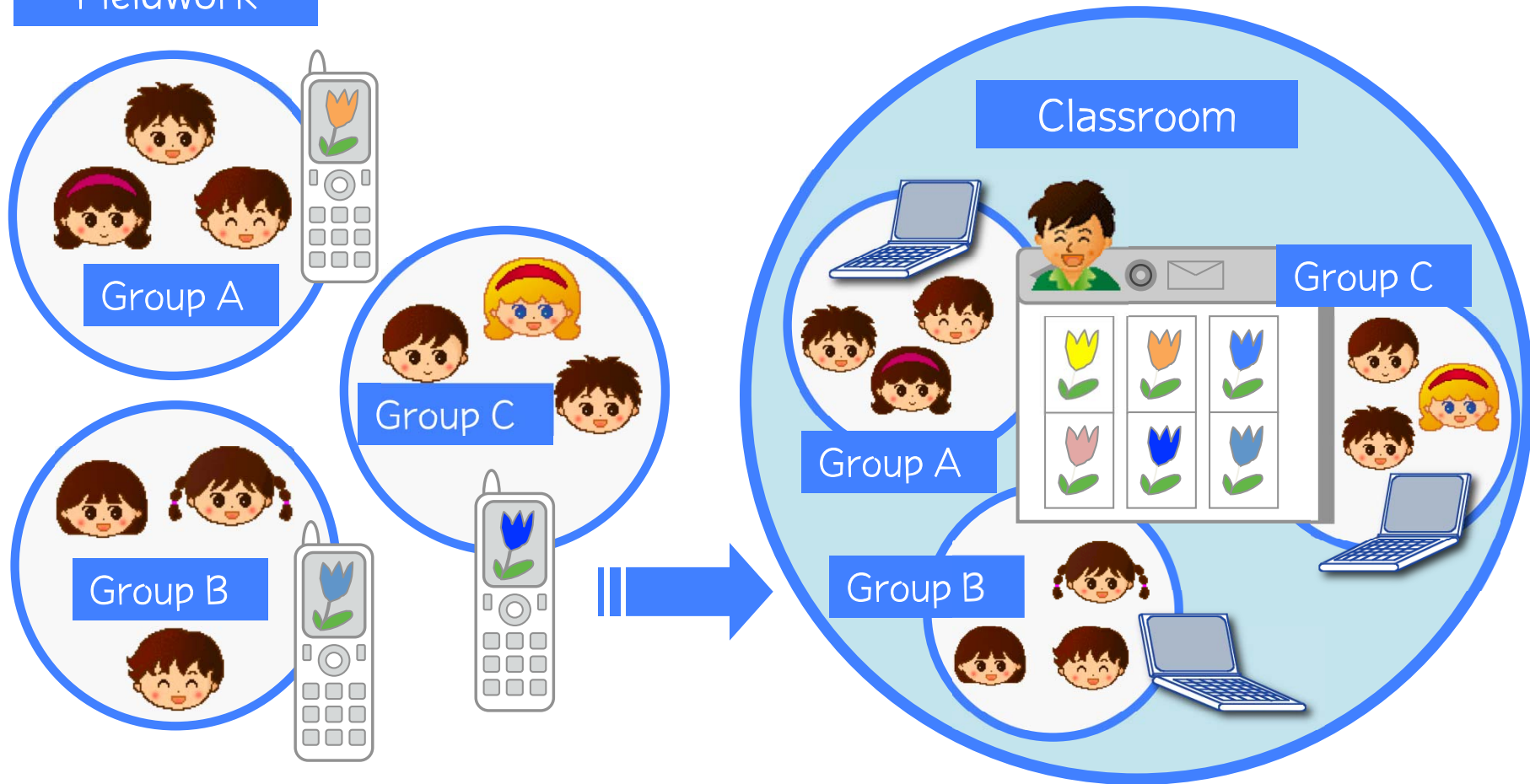
リンク: http://ie.h.kobe-u.ac.jp/~rokosan/staff/cg-bin/clippic_04/20031015/clippic_list.cgi?mode=popup&date_yyyyymm=200310&file=20031015101851_27804-01_03-10-15_10-18&no=99

Examples of using designs

- Supporting classroom communication
 - In the classroom, to share and utilize information collected at dispersed study environment, like fieldwork
- Expansion of learning community
 - To promote cooperation between children and parents

Supporting classroom communication

Fieldwork



Example Unit Overview

- **Unit Title:**
Find the winter
- **Subject:**
1st grade students
- **The Goal of the Unit:**
To find characteristics of nature in winter and changes in people's lives by searching for things that represent cold weather and other winterish things



Activities

Exploring



Group Discussion



Classroom Discussion



- Exploring for winterish things inside and outside the school
 - Collecting photos by mobile phone
- Group Discussion
 - Summarizing why the things were winterish?
 - Comparing with other groups
- Classroom Discussion
 - Group presentation on “winterishness”
 - Q & A session

Individual worksheet


シャメール いちらん: 2003/02/18 > No.120 03.2.18 1:37 PM

[印刷] [印刷] [印刷] [印刷] [印刷] [印刷] [印刷] [印刷] [印刷] [印刷]

シャメール No.120 Name

1年 いぐみ 名まえ: _____

From: 3ばん
Subject:
Date: 2003/02/18 10:45:35



なべセットの中に入れて
いるやまいもをよく見て
いましたね。はくひや
白ねぎなどふゆにおい
しいものがたくさん入って
いますね。

なべセットをおすすめにしたの
だけれともふゆになべりょうり
はおいしいです。それにふゆにお
いしいやさいもたくさん入っていた
ので、おすすめにしました。

このセットの中に白ねぎが入って
います。

わたしは、ライフのなべセット
をおすすめにしました。なべりょうりは
ふゆになるとおいしいものになります。なべセットの中
には、白ねぎなどのふゆにおいしい
やさいも入っていました。なべりょうりのよ
うにあたたかい食べ物もふゆにとくに
おいしい食べ物です。

http://rie.h.kobe-u.ac.jp/~rokkosan/cgi-bin/clipic_beta/20030218/clipic_list.cgi?mode=popup&date_YYYYMM=200302&file=200302181045 ... ページ 1 / 1

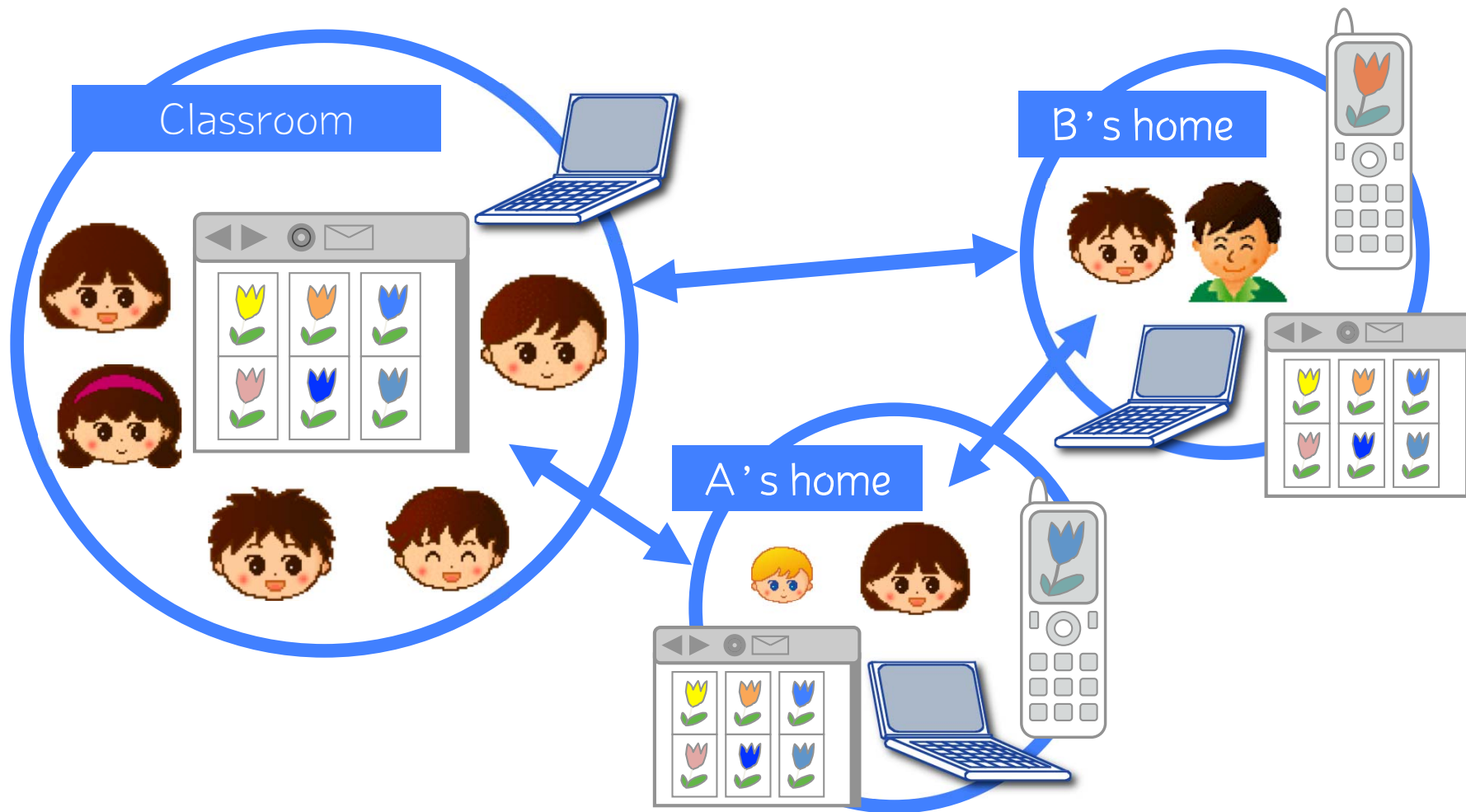
Explanation of the picture:

“Nabe dish” as the most winterish thing because it is especially delicious in winter. And, it contains a lot of vegetables that are delicious in winter. In this package, there is white welsh onion.

Reasons for recommendation:

I chose a packaged “nabe dish” sold at the supermarket. “Nabe dish” is more delicious in winter. In the package, there were various seasonal vegetables eaten in winter, including white welsh onion. Hot foods, such as “nabe dish”, are especially delicious in winter.

Expansion of learning community



Example Unit Overview

- **Unit Title:**
Let's help with housework
- **Subject:**
1st grade students
- **The goals of the Unit:**
 - To let children recognize the roles of family members who support their family life.
 - Making children actively takes part in the housework they can handle and thereby realize their responsibilities as a family member.

First Activity:

Reporting housework conducted in children's homes



Second Activity:

Web page displaying the process and ability of washing rice

六甲山プロジェクト > もちかえり2かいめ まとめ表示 [2004/10/06~2004/10/15] (7枚)

Date ▲▼ Page [前のページ] [次のページ]

<2004年> | <10月> 1

全て表示 <全て表示(7)>

+ No. ▲▼○ - From ▲▼○ + Subject ▲▼○ - Meta_1 ▲▼○ - Meta_2 ▲▼○

<全て表示> [] <全て表示> [<ごはんをたく>] [(なし)]

全て表示 全て表示 全て表示 全て表示

写真を全て選択 | 選択を全てクリア → インデックス表示

- 

No.33
2004/10/06 18:15
From: [redacted]
こめびつのすうじをおす。
ここで、ごはんをなんごうたくか、きめてすうじをおします。
- 

No.34
2004/10/06 18:20
From: [redacted]
みずをいれる。
- 

No.35
2004/10/06 18:23
From: [redacted]
みずをすてる。
さいしょのみずは、すくにすてる。
- 

No.36
2004/10/06 18:27
From: [redacted]
みずをいれてかきまわす。
- 

No.37
2004/10/06 18:29
From: [redacted]
みずをすてる。
1. おこめをこぼさないように、きをつける。
2. <おこめあらい>→<みずをすてる>をみずがきれいになるまで、くりかえす。

The manual filled in the process and ability to fold laundry

Third Activity:

Sharing the processes and abilities of housework tasks among classmates

The image displays a handwritten manual titled "せんたくたたみ やりかたメモ" (Laundry Folding Method Memo). The manual is divided into two columns. The left column contains four numbered steps (1-4) with corresponding photographs showing the process of folding laundry. The right column contains four numbered steps (1-4) with corresponding photographs showing the process of folding laundry. An orange arrow points from the left column to the right column. Below the manual, a photograph shows a group of children in a classroom sitting around a table, looking at a laptop screen. Three grey circles are overlaid on the photograph, indicating the children's faces.

せんたくたたみ やりかたメモ

① せんたくものをとめて
ピンと伸ばすものは
せんたくしただけのものは
いらないので、
② わたしは、ちがいに
してしまいます。だから
たたむときにおも
てにかえすんです。

③ しわをのしめ
てたたみにやす
くする。

④ たたむときしわをの
しめたので、ち
がいのたたみかた

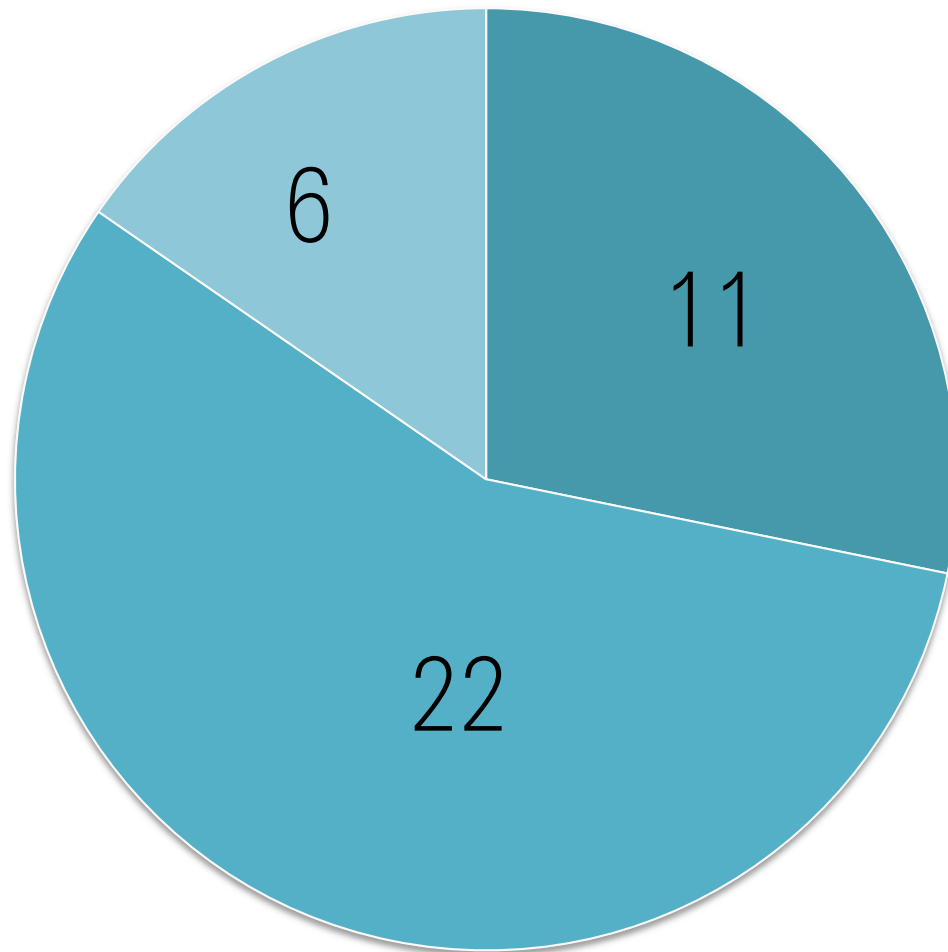
① カーセ"とがしま
ためになつてい
でもとのたたきに
な

② よう
たたみ
やりや
して

③ しま
し
やす

④ しま
た

Evaluations by Guardians



Question

Did you have more time to talk with your child about content of study during this unit than other?

- Very much
- A little more
- Not so much
- Not at all



5. Conclusion

For advantage of the use



SPECIAL THANKS

Food Education System



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Regional Disaster Prevention SNS System



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clippicKids



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