

APPLYING TASK ANALYSIS TO DEVELOP THE NECESSARY SKILLS OF STUDENTS WITH MDVI: FOCUSING ON COOKING RICE USING THE ADAPTED RICE COOKER

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Abstract: *Independence plays an important role in the process of transition. In order to prepare the 5 students with MDVI in Grade 6 of Ban Dek Ramintra School for the Blind and Blind with Multiple Disabilities for transition, they have to undergo the preparation process at Half-way House for a period of one year. The Half-way House Project includes teaching daily living skills and vocational skills to students with MDVI. One of the daily living skills they learn through the Half-way House Project is cooking. Before conducting this study, 80% of Grade 6 students with MDVI of Half-way House Project at Ban Dek Ramintra School for the Blind and Blind with Multiple Disabilities were not able to cook rice all by themselves using the rice cooker. They lacked the necessary skills to perform this task. Rice is the staple food in Thailand. It is included at most meals of Thai people. Therefore, cooking rice is an important skill that students with MDVI need for their daily life. To ensure a scientific process in teaching the task of cooking rice, I included the application of task analysis, object identification techniques and Orientation and Mobility. I also devised an Individualized Instructional Plan (IIP) and used an adapted rice cooker with tactile buttons and audio signals modified by our visually impaired resident technician. The combination of techniques and the use of adapted rice cooker enabled the students with MDVI to understand clearly what to do to complete the task. With this new knowledge and skills, students with MDVI are able to perform a task that will not only benefit them but also other people. They can now cook rice for themselves and also for their friends and family. The mixed method of using task analysis, object identification techniques and O&M to complete the task will be used as an instructional model for other students with MDVI at Ban Dek Ramintra and other schools for students with MDVI under CFBT.*

Keywords: blind with multiple disabilities, task analysis, object identification techniques, orientation and mobility, daily living skills

INTRODUCTION

Independent Living Skills (ILS) is necessary in the process of transition of children with MDVI. These skills must be developed for utmost independence of the students. However, there are plenty of limitations in accessing these skills in the case of children with MDVI. Sighted children can casually observe how these basic skills are done by adults surrounding them like their family members.

On another hand, children with MDVI lack visual faculty to apprehend how things are done by observing. These skills need to be taught to them in a very systematic manner.

The Half-Way House Project of Ban Dek Ramintra enables them to learn these necessary Independent Living Skills such as doing household chores like washing dishes, washing clothes, cooking and vocational skills like growing mushrooms, making beaded jewelry and tie-died shirts. In order to prepare the 5 students with MDVI in Grade 6 of Ban Dek Ramintra School for the Blind with Multiple Disabilities for transitioning to the next step of education and skill development process at Lopburi School for the Blind and Blind with Multiple Disabilities or return to their home to live as independent members of their society, this group of students has to go through the process of

preparation at the Half-Way House Project for the period of one year. These 5 students with MDVI who participated in this research have problems of autism, mental retardation, intellectual disability, physical disability and communication disability.

Cooking rice is one of the skills that are taught at the Halfway House. This is a necessary skill that a student with MDVI should learn in order to be self-sustaining as rice is the base-food in Thailand. Cooking rice maybe just a simple task for people without special needs but for children with MDVI who have limitations in learning, this is a task that needs specific and clear instructions. According to Heward (2003), children with exceptional needs require and deserve systematic, effective special education. Through systematic instruction significant learning can be achieved by a learner thought to be incapable of learning.

To ensure a systematic process of teaching this skill, I decided to use task analysis. Task analysis is the breaking down of a task into steps that needs to be performed in order to accomplish the task and the purpose of classifying the task is to device an effective instruction (Gagne et. al, 1988). According to Gagne (1974) it is a method of identifying and classifying the behavioral contributors to task competence for which differential instructional design was possible and desirable.

It is the objective of this research to prove that task analysis is effective in helping the students with MDVI to complete a task which in this case is cooking rice. By simplifying the task, the students with MDVI can perform something significant for their daily life and the life of people around them. This is to empower them with skills that will equip them with independence through instructional strategies that address the limitations of their sensory faculty.

This research is conducted in line with the commitment of The Christian Foundation for the Blind in Thailand (CFBT) under the Royal Patronage of H.M. the King to provide the best possible professional services and management to the visually impaired in order for them to live harmoniously and with dignity in the society and enable them to enjoy human rights the same as other members of the society.

Tools and Techniques:

This study is conducted with the integration of task analysis, repetition and adaptation of technology. Mixed method is also use in teaching the task. This mixed method is composed of using Task Analysis, Object Identification and Orientation Mobility. The essence of repetition in learning is also recognized

in this study. Frequent repetitions are necessary to reach the stage when content could be reproduced from memory and inhibit forgetting of the content after it has learned (Ebbinghaus, 1913).

Object Identification and O&M (Orientation and Mobility): This includes the techniques in locating and identifying the materials needed for cooking rice and the instructions on how to move around the kitchen. Incorporating the Object Identification Techniques and O&M in conducting this research ensures safety of students with MDVI while performing the task. Knowledge of the environment around them contributes to their security and confidence in accomplishing what is required of them.

Integrating Other Subjects: Ban Dek Ramindra follows a principle of integrating different subjects in teaching one task. In learning how to cook rice for example, the students also learn numeracy by counting the number of cups of rice they need. They also learn Science by learning the temperature. They also learn English by saying the things needed in cooking rice in English.

Adaptation of Technology: To enhance accessibility of equipment used in cooking rice, Mr. Suchart, a visually impaired technician of CFBT made some adaptations. These adaptations include placing tactile buttons on the rice cooker, audio signal and synthesized voice for the students with MDVI. Another adaptation made is using an electric power outlet with on and off button without the need for plugging. This is to ensure the safety of the students with MDVI while completing the task.

Instruments for Assessment and Evaluation: Individualized Instructional Plan (IIP) is also used to cater to the needs of this heterogeneous group of students with MDVI. A rubric is used to evaluate the performance of each student while completing the task.

PROCEDURE

The task of cooking rice is broken down into the following steps:

- i. Put the inner cooking pot beside the rice container
- ii. Open the cover of the inner cooking pot
- iii. Put the needed amount of rice to the inner cooking pot

Note: The students with MDVI were taught of the ratio of the amount of rice and number of People

(1 person/cup 5 students= 5 cups)

- iv. Carry the inner cooking pot to the sink
 - v. Turn on the faucet
 - vi. Put water to the inner cooking pot to rinse the rice, count 1-10 while stirring it with your hand
 - vii. Pour off the water and use your left or your right hand (depends on the student's handedness) to prevent the rice from falling off the inner cooking pot
 - viii. Repeat 6 and 7
 - ix. Turn on the faucet and put the suitable amount of clean water on the inner cooking pan
Note: To know if the amount of water is correct, place your index finger above the rice and add enough water so it would come up to your first knuckle
 - x. Carry the inner cooking pot from the sink and place it beside the rice cooker
 - xi. Dry/wipe the outer surface of the inner cooking pot
 - xii. Put the inner cooking pot inside the rice cooker
 - xiii. Close the cover tightly
 - xiv. Turn on the switch for power outlet that is already connected to the outer pot of the rice cooker
 - xv. Push the switch to start cooking and wait for the synthesized voice to signal that the rice is already cooked
- v. The student can perform the task completely (all 15 steps) and independently

CONCLUSION

Simplifying the task of cooking rice based on the concept of task analysis, designing a systematic set of instructions, using mixed method and adapted technology produced significant results in the learning experience of our MDVI students at Ban Dek Ramintra. Two students with MDVI can complete the task. Three of the MDVI students can complete the task but needed the help of the teachers in measuring the cup of rice. Their knowledge in other subjects like Math, English, Science and Health was reinforced in this activity. To illustrate, they were able to practice counting by determining the ratio between the number of cups of rice needed and the number of people.

USAGE OF RESULT

The instructional model used in this study had created success in teaching students with MDVI who participated in the this study. This instructional model will not only be implemented in Ban Dek Ramintra but in all schools for students with MDVI under CFBT.

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Assessment:

The students were graded according to the rubric below, 1 being the lowest score:

- i. The Student gives cooperation
- ii. The student can perform with teacher's assistance by holding his/her hand to guide him/her
- iii. The student can perform with the teacher's additional instructions
- iv. The student can do most of the steps all by himself/herself with little needed instruction