

Innovation in Life Skills Development of MDVI Children Using Task Analysis and Audible Liquid Level Indicator

Araya Chanaponchai

Ban Dek Ramintra School

The Christian Foundation for the Blind in Thailand

Under the Royal Patronage of H.M. the King

Bangkok, Thailand

araya21673@gmail.com

Abstract—Life skills are necessary for MDVI children to access independence and integrate in the society. Ban Dek Ramintra School for the Blind with Multiple Disabilities specializes in the education and development of students with visual impairment and additional disabilities. It is dedicated in developing students' potential to acquire daily life skills, communication skills, orientation and mobility, and basic career skills to enable them and maximize their potential for social integration. In line with this, the school has implemented a "semi-trajectory" project with the objective of preparing students for transition. This project involves teaching household chores like kitchen tasks. The target group of this project is composed of 6 MDVI students who are in Grade 4 to Grade 6. These students lack the skills in accomplishing household tasks like preparing ready-made drinks. Teaching MDVI children how to prepare ready-made drinks involves a detailed process of teaching and ensuring students' safety. For these reasons, the researcher deemed it necessary to use Task Analysis as a teaching approach and Audible Liquid Level Indicator as the equipment to aid the students in performing the task while preventing hazards. This endeavor was able to equip MDVI students with skills and confidence to perform the target task in order to help themselves, their friends and also for their family members when they graduate from the school.

Keywords—MDVI children; life skills; teaching innovation, task analysis

I. INTRODUCTION

Life skills are vital in coping up with the demands and changes of everyday life. They are useful in different problem areas such as drug abuse, threat to mental well-being and even disabilities. Life skills is so significant that it is promoted internationally as an integral part of education.

[1] advocates for life skills-based education and has set criteria to guarantee the success of this kind of education. UNICEF further maintains that teaching life skills empowers people who are in challenging circumstances.

In Thailand, life skills is one of the ten areas included in the standards of different curricula that are recognized by the Thai Ministry of Education. The Thai government also designed strategies to develop the life skills of individuals by promoting lifelong learning.

The Christian Foundation for the Blind in Thailand (CFBT) under the Royal Patronage of H.M. the King recognizes the importance of life skills in developing the quality of life of children with visual impairment and also the children with multiple disabilities and visual impairment (MDVI) [2]. CFBT would like to ensure that MDVI children are equipped with life skills through Baan Dek Ramintra School. Baan Dek Ramintra School is a specialized school that provides education and development to MDVI students. It develops the potential of students to have daily living skills, communication skills, orientation and mobility and basic career skills to enable them to live harmoniously with other members of the society using their full potential [3].

In line with this goal, Baan Dek Ramintra School has implemented the semi-trajectory home called the "Half-way House Project". The target group of the project is composed of 6 MDVI students who are in Grades 4 to 6. The objective of the project is to equip the students with home life skills necessary to live their daily life especially after their graduation from the school. These life skills include skills in performing household chores such as kitchen work Patterson[4].

Moreover, the results of the assessment reveals that the target group of students still lack the skills in performing housekeeping, kitchen work and some necessary tasks such as making instant drinks which many people may consider easy but can be difficult for blind children with other disabilities [5]. Preparing instant drinks makes use of hot water and this could pose danger to the students.

The students' safety in performing learning tasks is the priority of Baan Dek Ramintra School. For this reason, this research is conducted to guarantee a safe environment for the students while learning the basic life skills.

II. EMPLOYING TASK ANALYSIS IN LIFE SKILLS DEVELOPMENT

A. How MDVI Children Learn Life Skills

MDVI children often acquire skills longer than typical children. They need significant amount of exposure before they can retain learning. Teaching functional skills to MDVI children is often used because it makes the skills easier for

them to remember. Learning and practicing the skill in a natural environment is also helpful for MDVI children because it involves repetition.

B. Role of Technology

The use of technology is very important in the field of disability. Technology enables MDVI children to access information and increase their independence. For this reason, technology access skill should be taught to MDVI students. However, assistive technology is costly and this is a challenge for people working in the field of special education [6].

C. Using Task Analysis in Teaching Life Skills to MDVI Students

[7] define task analysis as the method of breaking a skill down into smaller and simpler tasks. [8] established that task analysis is a method of determining and categorizing factors that affects task competence. Task analysis provides a step by step procedure in accomplishing an activity.

The tasks that seem to be easy for typical students maybe complex for MDVI students. Therefore this approach can aid the MDVI students in performing an activity by doing simplified and organized tasks.

III. RESEARCH METHODOLOGY

A. Research Tools

Organization and teaching tools are very important in order to attain developmental goals in teaching MDVI students. This study employed technology and planning tools to ensure the success of learning activities.

1) Audible Liquid Level Indicator

Audible Liquid Level Indicator is an electronic device that has the feature of indicating water level through a sound [9]. The audible liquid level indicator produces a loud noise to signal the water level as the student presses the water from a thermos bottle. The audible liquid level indicator can be used for both hot and cold water.

2) Activity plan for making instant drinks

The activity plan includes organized procedures in implementing the tasks for making instant drinks. This ensures careful planning before requiring the students to proceed with the activity [10].

3) Task analysis assessment form

The task analysis assessment form was used in order to evaluate students' performance for each task. The following rubric was used to evaluate the students:

Evaluation Criteria
5 means doing it yourself, every step
4 means almost all can be done manually
3 means can be done by guiding
2 means can be done by verbal and gesture guidance

4) Behavior observation form

The behavior observation form is consists of 5 indicators: students sense of responsibility, diligence and interest in the activities; sense of cooperation; enthusiasm in practicing the skills and enjoyment in doing the activities [11].

B. Research Procedures

1. The researcher selected the visually impaired students with other disabilities in the semi-trajectory of Baan Dek Ramindra School as the target group of the research. The school prepares these students for transition by teaching them daily living skills.

2. The student's personal history on basic skills report forms and Individual Education Plan (IEP) was investigated before conducting the research.

3. An assessment was conducted by experimenting with basic skills (Baseline) in making instant drinks using the audible liquid level indicator while the researcher closely observing and recording the behavior that occurred.

4. Conducting experiments using the activity plan

5. Apply the task analysis assessment form which the researcher devised to assess the ability of the students

6. Analyze the data obtained from the daily living skills assessment form

The research was conducted for 2 weeks from Monday-Friday and each session runs for 30 minutes each day.

IV. RESULTS

The results of the pre-test and post-test show that there is a 70% increase in the achievement rate of MDVI students after using task analysis and audible liquid level indicator in teaching how to make instant drinks.

The intervention using task analysis and audible liquid level indicator enabled students to help themselves in making instant drinks. The experience that they gained from the activities can be used in their daily life at home with their families.

Furthermore, the new skills that the MDVI students learned increased their independence which is very important in the process of transition.

The activities in this research also provided opportunities for the teacher to develop innovative media in organizing activities for MDVI students.

REFERENCES

[1] W. H. Organization, "Skills for health: skills-based health education including life skills: an important component of a child-friendly/health-promoting school," 2003.
 [2] *Education in Thailand*. Bangkok, Thailand: Office of the Education Council, 2013.
 [3] J. Delors, *Learning: The treasure within*. Unesco, 1998.
 [4] T. L. Patterson, S. Goldman, C. L. McKibbin, T. Hughs, and D. V

- Jeste, "UCSD Performance-Based Skills Assessment: development of a new measure of everyday functioning for severely mentally ill adults," *Schizophr. Bull.*, vol. 27, no. 2, pp. 235–245, 2001.
- [5] D. A. Aaker, *Building strong brands*. Simon and Schuster, 2012.
- [6] P. L. Emiliani and C. Stephanidis, "Universal access to ambient intelligence environments: opportunities and challenges for people with disabilities," *IBM Syst. J.*, vol. 44, no. 3, pp. 605–619, 2005.
- [7] K. Szidon and E. Franzone, "Task analysis," *Madison, WI Natl. Prof. Dev. Cent. Autism Spectr. Disord. Waisman Center, Univ. Wisconsin*, 2009.
- [8] R. M. Gagne, W. W. Wager, K. C. Golas, J. M. Keller, and J. D. Russell, "Principles of instructional design," *Perform. Improv.*, vol. 44, no. 2, pp. 44–46, 2005.
- [9] L. C. Lynnworth, *Ultrasonic measurements for process control: theory, techniques, applications*. Academic press, 2013.
- [10] A. H. Schoenfeld, "Learning to think mathematically: Problem solving, metacognition, and sense making in mathematics," *Handb. Res. Math. Teach. Learn.*, vol. 334370, 1992.
- [11] M. Csikszentmihalyi and B. Schneider, *Becoming adult: How teenagers prepare for the world of work*. Basic Books, 2001.