

## EMPOWERMENT OF MENTALLY RETARDED CHILDREN THROUGH MAKING HYDROPONIC MINI PARKS IN EXCEPTIONAL ELEMENTARY SCHOOL B / C DHARMA WANITA PERSATUAN PROVINCE OF SOUTH KALIMANTAN

Giyarto Nugroho<sup>1</sup>, Robby Rahmadi<sup>2</sup>, Habibah Nurhayati<sup>3</sup>, Nasidawati<sup>4</sup>, Tinah<sup>5</sup>

<sup>1</sup>Agronomi, Faculty of Agriculture, Lambung Mangkurat University

<sup>2</sup>Marine Sciences, Faculty of Fisheries, Marine Sciences, Lambung Mangkurat University

<sup>3</sup>Biology Education, Faculty of Teacher Training and Education, Lambung Mangkurat University

<sup>4</sup>Elementary School Teacher Education, Faculty of Teacher Training and Education, Lambung Mangkurat University

<sup>5</sup>Extraordinary Education, Faculty of Teacher Training and Education, Lambung Mangkurat University

### ABSTRACT

Children intellectual barriers have a lower IQ than normal children who have an impact on thinking skills so that intellectual obstacle education is more directed to skills education. This empowerment takes place in Exceptional Elementary School B / C Dharma Wanita Persatuan of South Kalimantan Province. The purpose of this research is (1) To provide education to the children's tunagrahita about the importance of improving the quality of soft skill through cultivation and entrepreneurship activities. (2) Train and empower children with tunagrahita make mini hydroponic park. (3) Obtaining by conducting cultivation of plants through mini garden of entrepreneurial hydroponics that is easy and profitable. (4) To open the society's insight on the competence of the child's tunagrahita so that the increased social support about its existence. Mantra Nini program is done by education method of planting of mustard seeds, drying of mustard seeds, transferring of mustard seedlings into the hydroponic framework, the treatment of mustard seeds, harvesting of mustard to children with disabilities. The results obtained indicate the existence of hydroponic skills in child tunagrahita through skill learning activities by applying hydroponic axis system. Prepare tools and materials (Very good), punch rockwool (enough), put seeds into rockwol (good), wet rockwool (good), transfer seeds in net pot (very good), put net pot in hydroponic framework (excellent) , replenishment of nutrients into water containers (less).

**Key Words:** mental disabilities, hydroponics, entrepreneurial hydroponics

### INTRODUCTION

Special education is held to serve all students who have special problems and needs in learning and of course carried out according to their abilities, in line with the opinion of Polloway and Patton (in Ishartiwi, 2014) which suggests that the child with special needed education services are tailored to the needs of children. Children with mental retardation are children with special needs who experience obstacles in their mental development. According to Wijaya (2016) mental retardation is a child who experiences an abnormality which includes general intellectual function below the average of IQ 84 and below, the disorder shows obstacles in various aspects.

The World Health Organization (WHO, 2008 in Dewi, 2011) estimates that the prevalence of mental retardation in the world is 3% and will tend to increase throughout the year. If the population in the world is around 6.5 billion, it can be estimated that 195 million people suffer from mental retardation, and from this WHO estimate it can be analogous that the larger the population of a country, the greater the number of people with mental retardation. Indonesia is a country with the fourth largest population in the world after China, India and the United States. It is estimated that 1-3% of the population in Indonesia suffer from mental retardation (Maramis, 2009). Based on the results of the 2006 Central Bureau of Statistics National Census

(Wahyuandre, 2009 in Dewi, 2011), it was found that of 222,192,572 Indonesians, 0.7% or 2,810,212 were disabled, 601,947 children (21.42%) among them are school-age disabled children (5-18 years), and the largest number is occupied by the population of children with mental retardation

Formulation of problems to be solved through this program on basically, it cannot be separated from the scope of the above problems, namely: 1) How to provide educational efforts to mentally retarded children about the importance of cultivating plants through a mini hydroponic garden. 2) How to provide technical training in the application of cultivation through hydroponic mini parks to mentally retarded children. 3) Increase income by holding plant cultivation through an easy and profitable mini hydroponic entrepreneurial garden.

The objectives are: 1) Providing education to mentally retarded children about the importance of improving the quality of soft skills through farming and entrepreneurship activities. 2) Train and empower mentally retarded children to create a mini hydroponic garden. 3) Obtain by conducting plant cultivation through an easy and profitable mini hydroponic entrepreneurial garden.

## **METHOD**

### **Implementation Techniques**

#### **1. Mustard Seed Planting Education**

This method is presented through education of planting mustard seed which contains about the introduction of good mustard seedlings. Starting with an explanation of the procedure for planting mustard seeds over rockwall. Rockwall is cut into small rectangles, each rockwall contains 2 mustard greens. Previously, rockwall must be given enough water to make it easier to enter mustard greens.

#### **2. Transfer of Mustard Seed into the Hydroponic Framework**

The next method is to move the mustard greens that have grown into the framework of a hydroponic mini garden. To put mustard greens that have grown into the hydroponic frame using a small netpot. Netpot is given wool cloth that has been cut into length and then put into the bottom of the netpot with a cross position.

#### **3. Care of Mustard Seed**

To do mustard seed treatment must be done routinely by providing nutrition at least once every 3 days. Nutrients given are nutrient A and nutrition B. Then measure the water content with PDS and check the height of the mustard stems and leaves to make sure the mustard grows well.

#### **4. Harvesting of Mustard**

There are 2 kinds of harvesting methods, namely removing the whole plant and its roots and by cutting the base of the stem above the ground. Age of mustard harvest + 40 days after planting, you should first see the physical plants such as color, shape and size of leaves.

## RESULTS AND DISCUSSION

The summary results of hydroponic manufacturing skills are presented in the following table.

Table 1. Summary of hydroponic manufacturing skills.

No.	Skills observed	Value	Category
1	Prepare tools and materials.	81.2	Very good
2	Hollow out rockwool	75	Enough
3	Insert seeds into rockwool	82.95	Well
4	Wetting rockwool.	80.68	Well
5	Seed drying	94.32	Very good
6	Transfer of seeds in the net pot	92.05	Very good
7	Place the net pot in a hydroponic frame	96.59	Very good
8	Filling the nutrient water into the water supply container	55.68	Less

Category: Very good (86-100%), Good (76-85%), Enough (60-75%), Poor (55-59%), Less (<54%).

Source: Purwanto (2012)

The results show the existence of hydroponic skills in mentally retarded children through skills learning activities by applying the hydroponic axis system. Prepare tools and materials (very good), puncture the rockwool (enough), put the seeds into the rockwool (good), wet the rockwool (good), transfer the seeds in the net pot (very good), put the net pot in a hydroponic frame (very good), filling the nutrient water into the water supply container (less).

Skill learning prioritizes the active role of students in learning to train the abilities of children in certain occupations as well as training the creativity of children, in mentally retarded children skills education is carried out so that children have independence and work skills. One of the learning skills is by planting hydroponic axis systems, the hydroponic axis system is a skill that is easy enough to be mastered by mentally retarded children and special skills to learn it. With simple skills of planting hydroponically, the axis system is one type of adequate skill that can be done by mentally retarded children. By applying the steps to make hydroponics in learning skills, it can make children interested and enthusiastic in doing learning so that children will remember more about the tools and materials and the steps used. In addition, students will not be bored because the learning process is not only carried out in the classroom but also outside the classroom. During the learning process, mentally retarded students look enthusiastic about following each lesson. This can be seen from the activeness of students in making mini hydroponic parks.

Based on the results, it is in line with Wulansari (2018) the ability to recognize tools and materials through the application of the axis system hydroponics. on the Z table crisis value of 5% (two-sided testing) which is 1.96 ( $Z_h > Z_t$ ). This means that there is a significant effect of the application of the axis system hydroponics on the skills of recognizing tools and materials for mental retardation in the Extraordinary High School of Pandaan State.

## CONCLUSION

1. Exceptional Elementary School B / C Dharma Wanita The Association of South Kalimantan Province is used as a model or Exceptional Elementary School B / C pilot in terms of improving the quality of human resources.
2. The results of the Empowerment of Young Children Through the Making of Mini Hydroponic Parks will be used as advocacy material in the form of policy briefs.

3. Through the Empowerment of Grahid Children Through Making Mini Garden Hydroponics students can enjoy the results of their own cultivation.

#### **REFERENCES**

- Dewi, E.I. 2011. Effect of Supportive Group Therapy on the Loads and Levels of Family Anxiety in Caring for Children with Disabilities in Special Schools (SLB) in Banyumas Regency. Unpublished thesis. Depok. University of Indonesia Faculty of Nursing.
- Ishartiwi. 2014. "Learning Skills for Empowering the Independence of Children with Special Needs". E-Journal of UNY Special Education. Page 2-14.
- Maramis. 2009. Records of Mental Medicine. Surabaya: University Press publisher
- Wulansari, W and Edy R. 2018. Application of Hydroponic Axis Systems to Learning Skills to the Ability to Know Tools and Materials for Mentally Impaired People. Surabaya: Surabaya State University