

## INCREASING SELF REGULATED LEARNING OF STUDENTS WITH SPECIAL NEEDS THROUGH THE ILBAWEL MODEL

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**Abstract :** This study aims to increase self regulated learning of students with special needs in the course of Educational Psychology through the application of Web Enhanced Learning-Based Inquiry Learning Model (ILBaWEL). The study used single subject design with multiple baseline cross subject. The data were collected through observation, interviews, and test. The subjects consisted of five students with special needs, which consists of one person with a hearing impairment and four persons with visual impairment who took a course of Educational Psychology at the State University of Padang. The five (5) students with special needs are to apply the ILBaWEL Model in the course of Educational Psychology. The results of the research showed that (1) the ILBaWEL Model have the accuracy, appropriateness and usefulness to be applied in the course of Educational Psychology because it emphasizes student activities to seek and find, develop the ability to think systematically, logically and critically. It also facilitate learning interaction from anywhere and anytime, has a wider range, easy to use by faculty and students, and it is a learning model prescriptive components consist of a set of systematic learning steps; (2) the application of ILBaWEL Model in the lecture consists of six stages, such as orientation, define problems, propose a hypothesis, collect data, test hypotheses, and conclusions; (3) the ILBaWEL Model was effective for increasing the self regulated learning of students with special needs in the course of Educational Psychology. There is an increased score of self regulated learning significantly from the baseline phase to the intervention phase.

**Keywords:** the ILBaWEL Model, self regulated learning, students with special needs.

Character building of students in higher education can be done through education. A good education will form a straight students behavior, focused and knowledgeable, which will eventually lead to the goodness in life will be according to the national education goals. All of this can be achieved by the ability of its own, which is grown only through education. Keywords educational process is independence (Badan Standar Nasional Pendidikan, 2010: 39). In fact, education in Indonesia is still far from the goal of education contained in article 3 of Law No. 20 of 2003, that the purpose of education is to develop students' potentials to become a man of faith and devoted to God Almighty, noble, healthy, knowledgeable, skilled, creative, independent, and become citizens of a democratic and accountable.

The causes of the learners are the lack of awareness and motivation. Not to the growing awareness of learners in directing them to learn because they do not know the benefits of learning or not there is something you want to accomplish. Self-regulated learning is essential to the learning process (Jarvela & Jarvenoja, 2011; Zimmerman, 2008). It can help students create better learning habits and strengthen their study skills (Wolters, 2011), apply learning strategies to enhance academic outcomes

(Harris, et al, 2004), monitor their performance (Harris et al., 2005), and evaluate their academic progress (De Bruin, Thiede & Camp, 2011). Self-regulated learning is a process that assists students in managing their thoughts, behaviors, and emotions in order to navigate their learning experiences successfully. This process occurs when a student's purposeful actions and processes are directed towards the acquisition of information or skills.

The research shows that self-regulated students are more engaged in their learning. These learners seat themselves commonly in the front of the classroom (Labuhn, Zimmerman, & Hasselhorn, 2010), voluntarily offer answers to questions (Elstad & Turmo, 2010), and seek out additional resources when they need to master content (Clarebout, Horz, & Schnotz, 2010). Most importantly, the self-regulated learners also manipulate their learning environments to meet their needs (Kolovelonis, Goudas, & Dermitzaki, 2011). For example, the researcher has found that self-regulated learners are more likely to seek out advice (Clarebout et al., 2010) and information (De Bruin et al., 2011) and pursue positive learning climates (Labuhn et al., 2010), than their peers who display less self-regulation in the classroom.

The Self-regulated learning is theoretically

rooted in social-cognitive theory. Zimmerman (2001) grounded in Bandura's emphasis on the reciprocal nature of interactions between personal processes, behaviors and environmental factors. Social-cognitive theory of self-regulated learning includes many self-processes such as metacognition, affects, and motivational beliefs such as self-efficacy (Zimmerman, 2002). Social cognitive theorists define self-regulated learning as learning in which learners are metacognitively, motivationally, and behaviorally active participants in their own learning process (Zimmerman, 1986). Beitler (2005) states that the characteristics of learners who have the independence to learn: (1) a love of learning, (2) confidence as learners, (3) openness to learning challenges, (4) an inquisitive nature, (5) self-understanding in terms of learning, and (6) accepts responsibility for their learning activities.

Students with special needs, compared with their normally developing peers, are generally effective self-regulated learners (Zimmerman, 2000a). The social cognitive approach views self-regulatory processes as three cyclical phases such as forethought, performance or volitional control, and self-reflection processes (Zimmerman, 1994). Students with special needs are characteristically poor self-regulators, and thus, they need explicit instruction to support their acquisition and use of self-regulatory strategies to succeed in the domain of mathematical learning. The most frequently studied self-regulatory strategy is self-monitoring, which refers to constant efforts in keeping track of on-going progress (Montague, 2007).

Observing for three years (2013-2015) in the course of Educational Psychology at the State University of Padang showed that the characteristics of self-directed learning of students was still lacking, especially students with special needs. This was evident from the low awareness and lack of initiative to learn, less able to cope with learning problems, a lack of a sense of curiosity about the subject matter, lack of confidence in the ability of self, lack of interest in reading, lazy about the task of lecturers, highly dependent on friends in learning, rarely evaluate learning outcomes and lack of understanding of learning needs.

Lectures for students with special needs are still lacking, particularly in the provision of learning resources. So far, there were no library books written in Braille, so that students with visual impairment depends on their friends to access learning resources. Now, there are a lot of talking computer applications that can be accessed by students with visual impairment, but empowerment-based learning on the internet they have not been going well. Though their ability and skills to access the internet is pretty good, many students with special needs are not able

to utilize traditional learning programs because they have disorders that results in them get difficulty to participate in lectures. They are very dependent on the help of friends, especially when making assignments lectures. Thus, the use of computer-based access to learn technology plays an important role in improving self-directed learning of students with special needs (Hasselbring & Williams Glaser, 2000).

Self-directed learning is one of the predictors of learning outcomes. The higher independence of student learning is the higher learning results (Irzan Tahar & Enceng 2010; Francom, 2010). While the formation of self-directed learning includes three contexts; in formal learning settings, in the workplace and community contexts (Guglielmino, 2008). Therefore, a lecturer has a role in supporting the establishment of self-directed learning (Shahbaz Malik and Shabbir, 2008). The role of the lecturer is not only transfer knowledge, skills and attitudes, but also to improve the independence and creativity of learners. Educators are required to create the conditions of learning which gives the freedom for students to ask questions, to think and argue. For creating these conditions, it is required fun learning for students.

The practical learning in higher education is dominated by the lecturers. The lecturers are likely to bring the students to learn, the educators assess learner performance, indicating a need to learn and pick out the tasks of learning for students (Shephard, 2000 in Kicken, et al, 2009). Students are rarely given the opportunity to use the skills (set goals, metacognition, self-correction, reflection-election right tasks to learn). The learning activities are chosen by the lecturer, the lesson activities have been arranged, learning resources is rigidly specified, and restriction of opportunities learners to set goals (Francom, 2010).

Therefore, efforts to increase students' self-directed learning need to be developed. One of them is through the implementation of inquiry learning model (Joyce & Weil, 2000). This model aims to train the ability of learners in researching, explaining phenomena scientifically and solve problems. Inquiry learning model is very important to develop values and attitudes in the scientific way of thinking (Joyce & Weil, 2000). The learning model is implemented by using online computer technology. Through online learning, the students are able to take the initiative, to overcome barriers or problems, have confidence and to do something independently. One type of online learning is a web enhanced learning using the internet to support the quality of learning done in class, providing additional learning resources that can be utilized students whenever and wherever needed, which in turn can improve self-directed learning of students.

## METHOD

Single-subject experimental design using models of multiple baseline designs across subjects design with A-B-A' were used in this research (Barlow & Hersen, 1984; Creswell, 2012). Phase A is baseline phase, B is intervention phase with PMI, and A' is the maintenance.

This research subject is students with special needs and students without disabilities who take courses in Educational Psychology in the third semester at the State University of Padang. Educational Psychology courses are courses basics of education that shall be taken by a student of education at the State University of Padang. Students with special needs consists of one person with a hearing impairment and four persons with visual impairment. While students without disabilities are 45 people. Fiftieth of these students come from backgrounds filed study varied, one of the majors economic education, five people from the department of chemical education, twenty people from the Department of civic education, five people from the department of education sociology anthropology, fourteen of education majors coaching sports.

This research was conducted in Educational Psychology Class by applying ILBaWEL Model over the course of four months effective.

The target behavior is self regulated learning that is person's ability to take the initiative in arranging, manage and control the process of learning to cope with the problem of learning by using a variety of learning strategies. Self regulated learning consists of: (1) learning initiative, (2) diagnosing learning needs, (3) establish learning objectives, (4) selecting and applying learning strategies, (5) monitoring, managing and controlling learning learning difficulties facing a challenge, (6) utilize and finding relevant learning resources, (7) evaluating process and learning outcomes, and (8) self-concept and self-abilities. To measure the achievement of the target behavior used multiple baseline cross subject with uses frequency and self regulated learning scale. Self regulated learning scale completed by students without disabilities and multiple baseline cross subject with uses frequency completed by students with special needs.

Treatment materials (the module of ILBaWEL) prepared by the authors and validated by experts (experts judgment) is used as a guide for lecturer and students in applying ILBaWEL Model. The module of ILBaWEL Model consists of 3 parts. Part I Introduction: (1) importance of independence learning in higher education, (2) why should web-based learning, (3) face to face interaction and the virtual class. Part II Theoretical Study: (1) self regulated learning, (2) concepts of e-learning, (3) e-learning and

learning theory underlying, (4) e-learning applications in web-based in classroom, (5) application of the principles of e-pedagogy in learning model web-based e-learning. Part III ILBaWEL Model Application In Educational Psychology Course: (1) ILBaWEL Model implementation guide for students, and (2) ILBaWEL Model implementation guide for lecturers.

## FINDINGS AND DISCUSSION

### Findings

The results of the study at this stage of the model development as follows: (1) the ILBaWEL model can be used as learning models for improving self regulated learning because of containing pedagogical elements; (2) ILBaWEL models meet the functionality requirements of learning centered on the students, emphasizing students activities optimally to seek and find, foster self-confidence, develop the ability to think systematically and logically and critically, improve learning interaction, and have a wider range; (3) ILBaWEL models are easy to use by lecturers and students. ILBaWEL models is developed using the theoretical basis of behaviorism, cognitivism and constructivism; (4) ILBaWEL models is a prescriptive model of learning components consisting of a set of systematic learning steps, thus, easily implemented by lecturers and students; (5) the application of the model consists of a modified ILBaWEL models of inquiry learning with web enhanced learning, with the following steps.

Orientation, is fostering a responsive learning environment. Lectureing condition that students are ready to implement the learning process, stimulate and encourage students to solve the problem.

**Table 1. Collaborative Inquiry Learning Model (MIL) to the Web Enhanced Learning (WEL) in Phase Orientation**

| Learning Activities                                     | Learning Goals                                 | Result   |
|---|--|--|
| 1. Students are given the topic of the lecture material | 1. Introduce the topic of the lecture material | Definition/ concepts students about the lecture material |
| 2. Students form hypotheses                             | 2. Form a hypothesis                           |  |
| 3. Students build meta concept                          | 3. Develop questions related to the hypothesis |  |

Formulate the problem that brings students to a problems that contains puzzles. The problem is formulated by students, while lecturers provide topics to be studied.

**Table 2. MIL Collaboration with WEL in Phase Formulating Problems**

| Learning Activities  | Learning Goals                          | Result                                   |
|--|---|--|
| 1. Students find support/evidence on e-learning                      | 1. Exploring Data<br>2. Revise the data | Improvement of the concept of individual |
| 2. Fix the concept and editing meta data by the newly acquired facts |   | Data / individual records                |

Proposed a hypothesis, namely the temporary answer of a problem under study that needs to be verifiable.

**Table 3. MIL Collaboration with WEL in Phase Asking Hypothesis**

| Learning Activities  | Learning Goals                      | Result                                   |
|--|-------------------------------------|--|
| 1. Share data with other students (chat)                         | 1. Sharing Data<br>2. Share results | Improvement of the concept of individual |
| 2. Sharing meta new concept                                      | 3. Share ideas                      | Data/ individual record                  |
| 3. Revise the data and meta concept of online discussion results | 4. Define and revise the data       | Dialogue with chat                       |

Collect data, which activities encompass the information needed to assess the proposed hypothesis. This stage requires strong motivation to learn, perseverance and the ability to use the potential of thinking.

**Table 4. Collaboration MIL with WEL in Phase Collecting Data**

| Learning Activities                                | Learning Goals                        | Result                         |
|--|---------------------------------------|--------------------------------|
| 1. Sharing of data within the group                | 1. Communicating knowledge            | 1. Dialogue group in classroom |
| 2. Questions, cooperation, negotiation, compromise | 2. Negotiating the knowledge acquired | 2. Repair group concept        |
| 3. Choosing to decide on the core concept of group | 3. Combining knowledge                |                                |
| 4. Revise the concept of group                     |                                       |                                |

Test the hypothesis, is the process of determining the answers and develop the ability to think rationally considered acceptable according to information obtained by the data collection.

**Table 5. MIL Collaboration with WEL in Phase Testing Hypotheses**

| Learning Activities                                | Learning Goals                                  | Result                         |
|--|---|--------------------------------|
| 1. Checking the answers through the collected data | Confidence students in answer to the hypothesis | Obtaining the truth of science |
| 2. Evaluation                                      |   |                                |

Formulating its conclusions, the process of describing the findings obtained based on the results of hypothesis testing. The role of the lecturer is to show students where the relevant data is used as a conclusion.

**Table 6. MIL Collaboration with WEL in Phase Formulating Conclusions**

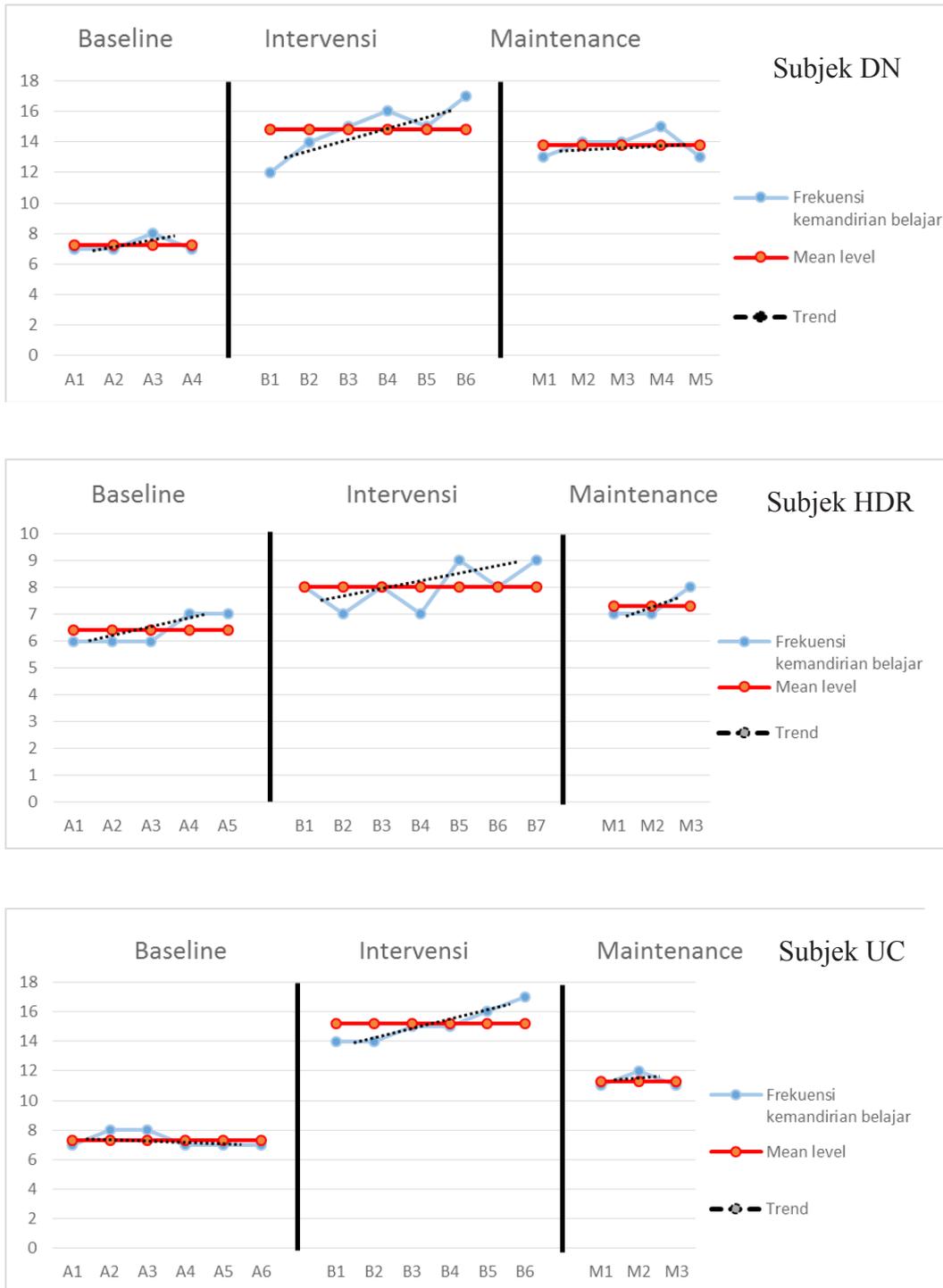
| Learning Activities    | Learning Goals     | Result                |
|------------------------|--------------------|-----------------------|
| 1. Summing up the data | Find the knowledge | Acquire new knowledge |
| 2. Evaluation          |                    |                       |

**Table 7 Overview Consensus Accuracy, Feasibility and Usefulness ILBaWEL Model by Experts**

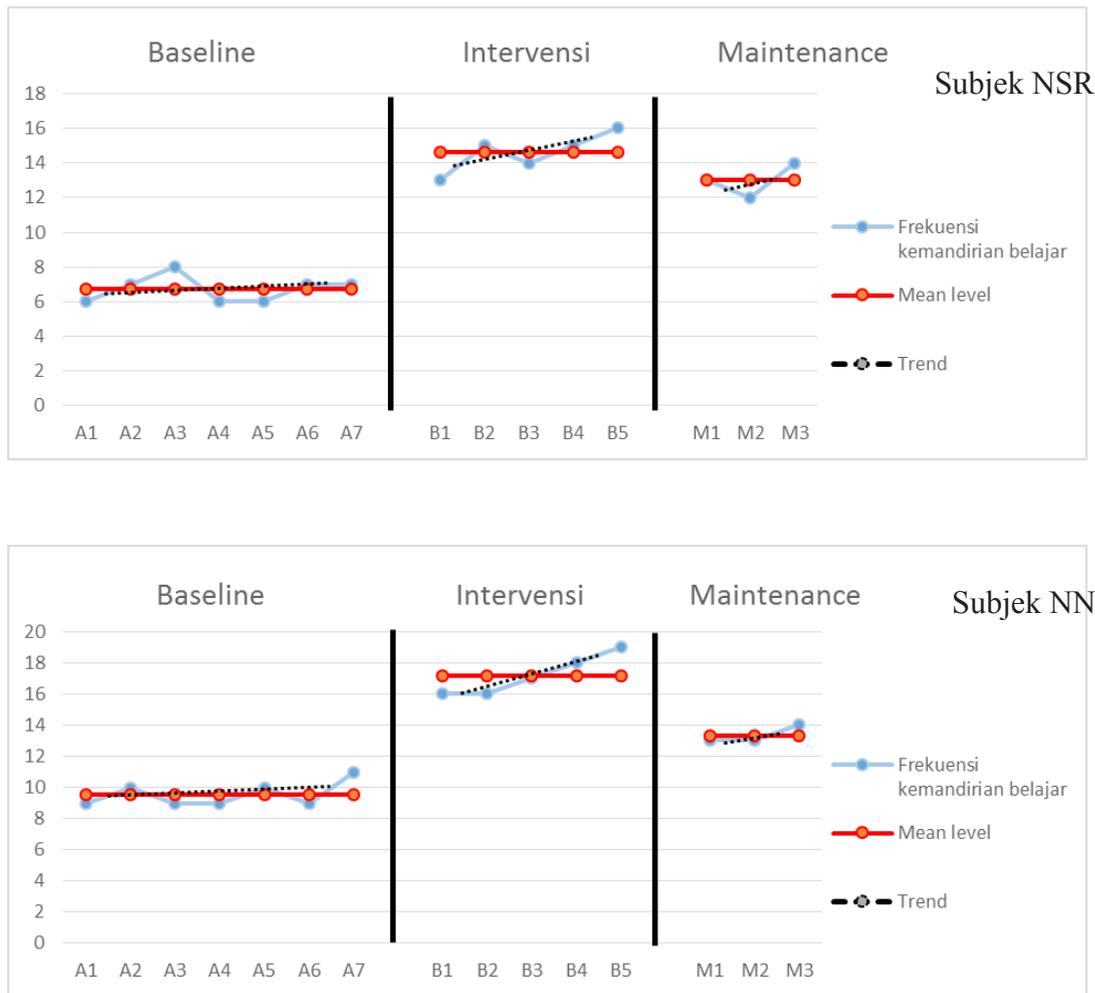
| No | Aspects  | the Degree of Consensus | Conclusion   |
|----|--|-------------------------|--|
| A. | 1. Appropriateness Procedure Using Model ILBaWEL by Lecturer                               |                         |  |
|    | a. Right   | 75%                     | Component Model implementation steps ILBaWEL very precise when applied by lecturers, and precise enough to be applied to the students. |
|    | b. Very Precise  | 8,4%                    |  |
|    | c. Not Exactly   | 16,6%                   |  |
|    | 2. The accuracy of the implementation steps according ILBaWEL Model Students               |                         |  |
|    | a. Right   | 67%                     |  |
|    | b. Very Precise  | 24%                     |  |
|    | c. Not Exactly   | 9%                      |  |
| B. | Feasibility Model IBAWEL (Practicality and Efficiency)                                     |                         |  |
|    | 1. Practicality Model ILBaWEL  |                         | Experts agree that the implementation steps ILBaWEL Model developed quite practical efficient.   |
|    | a. Not Practical   | 9,4%                    |  |
|    | b. Practical   | 71,1%                   |  |
|    | c. Very Practical  | 19,5%                   |  |
|    | 2. Efficiency Model ILBaWEL  |                         |  |
|    | a. Not Efficient   | 7,5%                    |  |
|    | b. Efficient   | 22%                     |  |
|    | c. Highly Efficient  | 70,5%                   |  |
| C. | Usefulness Model ILBaWEL   |                         |  |
|    | 1. The need for lecturers to special education in the field of information technology      |                         | Lecturers should receive short training in order to apply the model developed ILBaWEL.   |
|    | a. No Need   | 26,1%                   |  |
|    | b. Need  | 34,3%                   |  |
|    | c. It is Necessary   | 45,6%                   |  |
|    | 2. Users Model ILBaWEL (lecturers) need to acquire knowledge about self regulated learning |                         | The lecturers was absolutely necessary to have knowledge about self regulated learning   |
|    | a. No Need   | 8,3%                    |  |
|    | b. Need  | 33,3%                   |  |
|    | c. It is Necessary   | 58,3%                   |  |
|    | 3. Users Model ILBaWEL (students) need to acquire knowledge about self regulated learning  |                         | The studentss was absolutely necessary to have knowledge about self regulated learning   |
|    | a. No Need   | 0%                      |  |
|    | b. Need  | 38,7%                   |  |
|    | c. It is Necessary   | 61,3%                   |  |
|    | 4. Valueableness Model ILBaWEL for students  |                         | Students feel the application of the Model ILBaWEL very valuable.  |
|    | a. Not worth   | 0%                      |  |
|    | b. Worth   | 25%                     |  |
|    | c. Very Valueable  | 75%                     |  |

In addition, the results of analysis visual graphic of data on the five students with special needs are presented in chart 1 below. This graph shows the change in frequency of self-directed learning of students with special needs before, after intervention and after the maintenance phase by the Model ILBaWEL.

**Figure 1. Changes Frequency Self-regulated Learning of Students with Special Needs (DN, HDR, and UC) in Educational Psychology Class**



**Figure 2. Changes Frequency Self-regulated Learning of Students with Special Needs (NSR and NN) in Educational Psychology Class**



Graphs and 1 and 2 show the five subjects varied self-regulated learning. At baseline phase, the five students with special needs showed a stable trend lower self regulated learning. But all five subjects of different levels of self regulated learning. After being treated by applying Model ILBaWEL, an increase self regulated learning significantly, visible on an upward trend during the intervention phase. Meanwhile, after the subject is no longer using the Model ILBaWEL, a decline in self regulated learning. The highest improved self regulated learning from the baseline phase to the intervention phase occurred in subjects NSR with a difference of 7.89. While the lowest occurred in subjects HDR, this is caused by the total vision disorder condition that it has a dependency with peers in learning. Table 8 presents a summary of the increase in self regulated learning the fifth subject during phase of baseline, intervention, and maintenance.

**Table 8 Improving Self-regulated Learning of Special Needs during Baseline, Intervention and Maintenance Phase**

| No | Sub-ject | Mean Level Base-line | Mean Level Inter-ven-tion | Mean Level Main-te-nance | Differ-ence Im-prove-ment | Trend     |
|----|----------|----------------------|---------------------------|--------------------------|---------------------------|-----------|
| 1  | DN       | 7,25                 | 14,83                     | 13,28                    | 7,58                      | In-crease |
| 2  | HDR      | 6,40                 | 7,71                      | 7,33                     | 1,31                      | In-crease |
| 3  | UC       | 7,30                 | 15,17                     | 11,33                    | 7,87                      | In-crease |
| 4  | NSR      | 6,71                 | 14,60                     | 13,00                    | 7,89                      | In-crease |
| 5  | NN       | 9,57                 | 13,20                     | 13,33                    | 3,63                      | In-crease |

## Discussion

This finding is consistent with the theory put forward by Joyce & Weil (2000). According to Joyce & Weil, inquiry learning model offers active and self regulated learning, especially when students formulate questions and test ideas. This method increases the courage learners in asking questions. Lim (2004) stated that the inquiry as a learning method in the investigation that serves as the main vehicle for teaching and learning. In this method, students learn about the investigation and learned through the investigation, develop higher-order thinking skills and self regulated learning. Results show that self regulated learning are favorably influenced when students set specific goals, effectively use feedback, and make appropriate strategy attributions (Pintrich, 2003). Researchers then recommend that teachers should attend to goal-setting, feedback use, and attributional responses as part of their regular classroom instruction, and some investigators have developed classroom programs for this purpose (Schunk & Zimmerman, 1998).

In learning activities with Model ILBaWEL, students are able to perform well. Lecturer looks capable of mastering Model ILBaWEL. Lecturers teaching experience in contributing to the implementation of the development model ILBaWEL. Judging from the problem solving and self regulated learning, ILBaWEL Model has been able to increase the self regulated learning based on current information, the ability of the opinion, as well as individual responsibility. This finding is supported by Hienmstra (2006) that the web-based learning during the learning process will increase

activities to student-centered learning. Students have shown enthusiasm to actively respond to any questions and ask if there is anything that is not understood. A striking difference from previous learning is that the Model ILBaWEL look students in the learning process more balanced and equitable, thinking ability of students can be further optimized the appropriate level of ability. This is one of several advantages of the Model ILBaWEL.

Web-based enhanced learning (Model ILBaWEL) has the advantage, Hanover Research Council (2009) states, among other advantages are: (1) student interaction with faculty and other students is an essential characteristic and is facilitated through a variety of ways, including voice-mail and/or e-mail; (2) feedback to student assignments and questions is constructive and provided in a timely manner; (3) students are instructed in the proper methods of effective research, including assessment of the validity of resources.

## CONCLUSION AND SUGGESTION

At baseline phase, the five students with disabilities showed a stable trend lower self-directed learning. After being treated by applying model ILBaWEL, an increase self-directed learning significantly, visible on an upward trend during the intervention phase. Meanwhile, after the subject is no longer using the model, a decline in self-directed learning. This study showed that applying model ILBaWEL could increase the self-directed learning the students with disabilities.

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