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MATH LEARNING THROUGH STUDENT ASSESSMENT PORTFOLIO PGSD USM BANDA ACEH

Burhanuddin AG,

Departemen Mathematics University of Serambi Mekkah Banda Aceh, Aceh

Musriadi,

Doctoral Students Management Education Program, State University Medan, Indonesia

Murni,

Departemen Mathematics University Abulyatama Aceh Besar, Aceh

Aklimawati,

Departemen Mathematics University of Serambi Mekkah Banda Aceh, Aceh

ABSTRACT

Required accuracy PGSD students/prospective teachers in presenting these concepts, so that pupils are taught later were able to understand it correctly through the daily life of the students, so the impression and the accepted view of student PGSD to a mathematical concepts in College was the beginning level may continue to be carried away on the next time. Mathematics is considered the most difficult courses. This happens because the math is considered to have a high degree of difficulty and the difficulty of adjustment of the students with learning that there is a new world that is the University. Therefore, the need for an assessment that could develop whilst aspects (cognitive, affective, psychomotor, and emotional) that is authentic assessment with portfolio. A special target in this research are: (1) can produce the instruments to implement Portopolio to the study of mathematics which is equipped with the syllabus and lecture contract; (2) Student Handbook;(3) Student Worksheet; (4) the Handbook of mathematical learning in primary school teachers of SD; (5) the National Journal; (6) the international journal; (7) primary teachers Workshop Banda Aceh; (8) the book to implement Authentic students. This research was conducted with a sample of university students i.e. PGSD Veranda of Mecca. The development of this research was conducted following the 5 (five) stages of development with a modified Plomp Guide material development stages (products) by Nieveen with attention to quality aspects, namely 3 aspect validity, practicality, and the aspect of effectiveness (method).

Keywords: Mathematics Learning, mathematics, PGSD Assessment, portofolio

INTRODUCTION:

Mathematics is the science base that has become a tool for studying the other sciences. Therefore the mastery of math absolutely necessary against and math concepts to be understood correctly and properly early on by the student teachers/teacher education primary School. This is because the concepts in mathematics is a series of cause effect. A concept drawn up on the basis of previous concepts, and will be the basis for the concepts further, so that the understanding of a concept, an error will result in an understanding of the concepts (Kahf, Muhammad, & Shohibul., 2005). Superficial concepts of mathematics teacher education students given at primary School does not entirely match fit the context and it is very simple and easy, but it is actually a matter of mathematics SD contains the fundamental concepts and important and should not be viewed lightly (Hudojo, 2001). Required accuracy PGSD students / prospective teachers in presenting these concepts, so that later he taught pupils were able to understand it correctly, because the impression and view student accepted PGSD to a concept in College was the beginning level may continue to be carried away on the next time (at the time of becoming a teacher in the primary) (Johnson, 2002). For example, from beginning students PGSD in a triangular image directed always pointing out that the base of a triangle is the side that is on the bottom and height is always indicated by a vertical line segment perpendicular to the sides of the pedestal and terminate at vantage points on top of that side, then for the next student PGSD as candidates in SD will continue to do similar things (Grinnell, 1988)Therefore, the need for an assessment that could develop whilst aspects (cognitive, affective, psychomotor, and emotional) student PGSD through authentic assessment with portfolio. The mechanism of assessment of learning outcomes students depicted on the following chart:

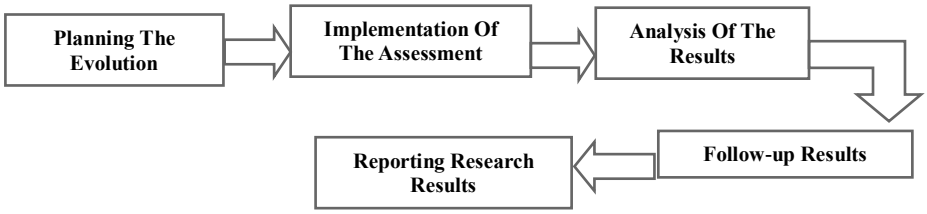
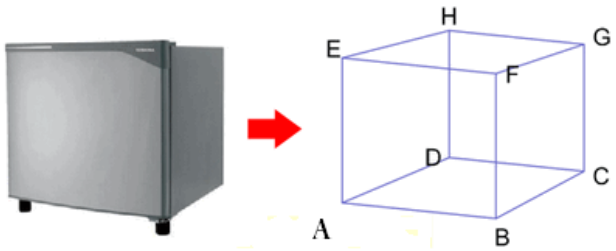


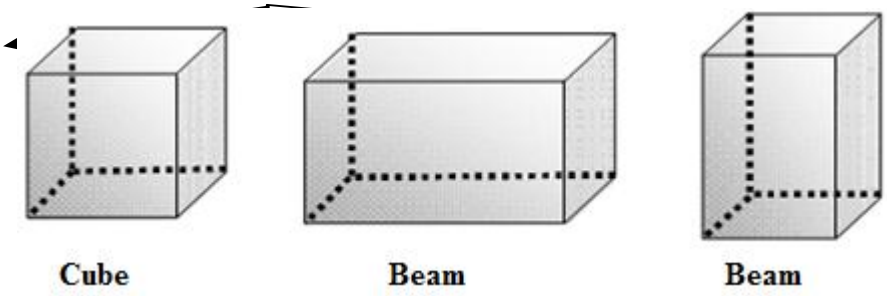
Chart 1. The Assessment Mechanism

The Primacy of Research:

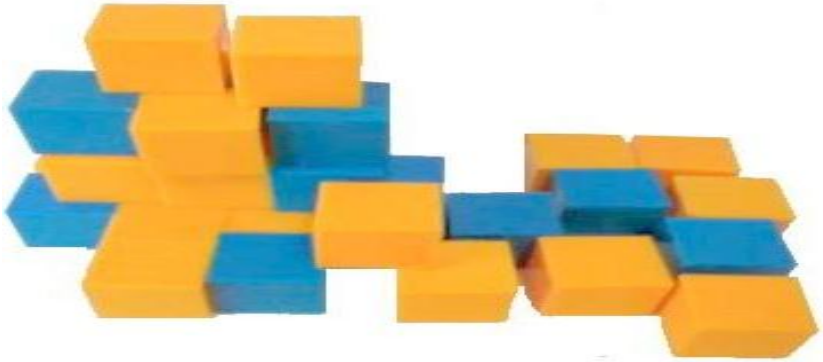
School education is education obtained by a person on a regular basis. The elementary school is the most basic level of formal education is six years all activities arranged that poured into the curriculum. As for the factors that the learning can be through external factors, internal factors and learning approaches (Muhibbin, 2010). Therefore a teacher should be able to apply the model of learning refer to circumstances/conditions, environment about combined with the strategies and methods used and adapted to kateristik the material to be conveyed. As on flat-building concept of planting then the existence of objects existing kongrit in everyday life to instill the concept of building space is important beyond the assessment that could develop whilst aspects (cognitive, affective, psychomotor, and emotional) student PGSD through authentic assessment with portfolio (Reigeluth, C.M. 1996). By using the objects/models of cubes, beams, limas, Prism, cone, tube, or the teacher can provide a concrete description of the abstract concepts (Warkitri et al., 2001). In the planting of this concept of teachers also need to be pointed to concrete objects that exist around the students, such as marbles, ball bead seats, or volleyball to visualize concepts ball; Chalk box, boxes of toothpaste, a thick book or book cupboards to give an overview of the concept of beams or rectangular Prism; milk cans or trash cans to the concept of the tube; Hat pak tani, nasi tumpeng, or Hat Birth day to Cone concept; and so on (Zainul & Mulyana, 2003). After understanding the concrete examples, then turn the students to mention other examples of objects around the school have geometric shapes as has already been mentioned above. An investigation into the properties of the building space with regard to the large number of ribs, side, angle, point angle, diagonal spaces, as well as the field of diagonal can be done by observing the students building space Frame Viewer. This is the following example cube framework.



Furthermore, as in the cultivation of the concept building flat, utilization of game demonstrator will also provide attraction for students, in addition to also increase the motivation and creativity in understanding and applying the concepts of building space. For example for example to improve the understanding of the students on the concepts of cubes, then the viewer can be used game cube soma. Soma cube game is a great tool to train creative thinkin in students in constructing a large cubes using the cube group pieces (Angari, 2005).



This unit cubes at the same time also to instill the concept that a building space can be formed from some of the other spaces of the building. (Linn & Gronlund, 1995)



Therefore, the prospective primary school teachers should be given a steady experience in carrying out tasks to support it must have at least four basic efficiency, namely: (1) the efficiency of pedagogy; (2) The efficiency of the personality; (3) the professional Efficiency; (4) Social Efficiency (Mohd Uzi & Sam, 2009). The four Candidates are expected efficiency of primary school teachers can improve himself as well as develop appropriate sustainable development education times (Mc Callum et.al., 1996).

RESEARCH METHODS:

Instruments Authentic Assessment:

The development is carried out following the 5 (five) stages of development of a modified with a memadu Plomp stages of development of materials (products) by Nieveen with attention to quality aspects, namely the 3 aspects of validation, the aspectspracticality, and the aspect of effectiveness (Pure, 2013).

Initial Investigation Stage:

The initial investigation carried out the identification and study of mathematical material PGSD, analysis of student conditions, analysis of concepts, analysis of the task and the determination of the criteria of performance will be achieved through the study of mathematics at PGSD (Plomp, 1997). These five activities above can be described as follows: front end Analysis; 2) analysis of the student; 3) 4) analysis of material Analysis tasks, and 5) competency Specifications (Akker, Branch, Gustafson, Nieveen, & Plompt, 1999)

Stage Design (design):

Activities conducted in the design of this instrument is to choose the format that will be used. The next steps are: 1) the preparation of the syllabus and contracts and associated Geometry Basis of preparation of the learning plan is a component-component model (syntax, the social system, the principle of reaction, support systems, and the impact of instructional and impact accompanist), task analysis and the analysis of the topics elaborated based on the material to achieve competence set out; 2) Election media (MFI). This media selection activities carried out to determine the appropriate media in the presentation of the learning material, and competence of the troubleshooting results indicate the benefits of studying the Geometry for the life of students and for further development; 3) Election format portfolio assessment instruments (Suyitno, 2004). The selection of the format of the portfolio assessment instruments for this Geometry courses adopted from device model Life Science (Arikunto, 2006). This election comes to design learning strategies, selection of content, and learning resources.

Stage realization of the (construction):

This step as follow-up activities at the stage of design. At this stage the generated prototype 1 (initial) as a result of realization of the design before (Setyono, 2004). Results again examined the adequacy of the construction theories supporting model have been met and applied properly on any components of the model so that it is ready to betested validation by experts and practitioners from the theoretical and rational'sconstruction. (Surapranata & Hatta, 2006)

Phase test and evaluation, and revision:

(Richey & Nelson., 1996) Activities conducted at the time of validating the instrument portfolio assessment for subjects of geometry is as follows:

1. ask for expert consideration and practitioners about the appropriateness of portfolio assessment for subjects of geometry (on the prototype 1) that have been realized. These activities are necessary for the instrument in the form of sheets submitted to validation validator,
2. perform an analysis of the results of the validation of the validator.

RESULTS AND DISCUSSION:

Based on data obtained from the results of research in learning mathematics through to implement student portfolio PGSD USM student achievement showed Banda Aceh PGSD USM categories following both student and Teacher activities (lecturers model)

Average activity Activities college students in 6 times, are presented in the following table:

Meeting	Persentese average frequency of student activities for the category (%)						
	1	2	3	4	5	6	7
I (2X45`)	31,47	12,97	10,20	21,28	12,04	10,18	1,86
II (2X45`)	31,49	14,83	9,25	20,36	16,67	6,49	0,92
III 2X45`)	35,18	11.12	9,25	19,45	17,59	7,41	0,00
IV 2X45`)	31,48	14,82	9,26	20,37	16,67	6,48	0,93
V (2X45`)	33,34	12,03	10,19	21,29	14,82	8,32	0,00
VI(2X45`)	34,20	11,19	9,26	24,06	12,97	7,42	0,92
Average percentage	32,86	12,83	9.56	21,13	15,13	7,71	0,76

The average percentage of time spent by students in the performing category of activity in the table above, it can be represented by the following diagram.

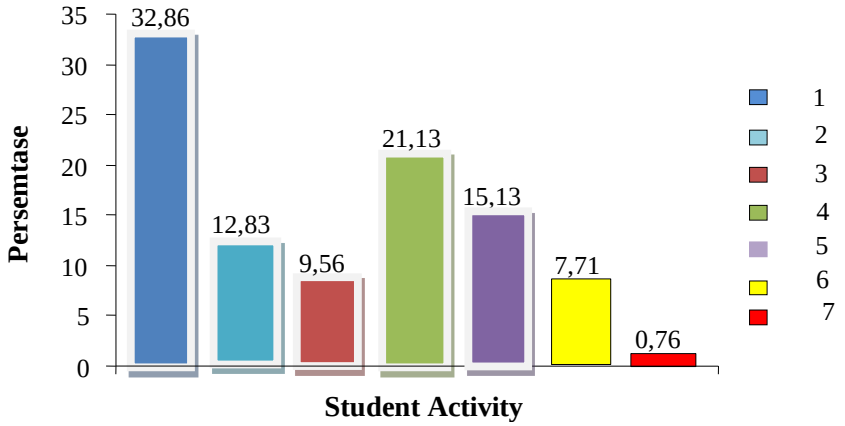


Figure 4.1 percentage of Student Activity On each category On Trial

The average percentage of time spent by students were: 32,86%; 12.83%; 9.56%; 21.13%; 15.13 7,71%;% and 0.76%. The average percentage was obtained from results for the amount of a percentage of the average frequency of activity for each category with the large number of meetings, i.e. 6 times.

The largest proportion of time used during student teaching and learning activities is doing the listening activities observing the explanation lecturer/friends namely 32.86% of time available for each meeting. Percentage of time these activities exceedsthe upper limit of the tolerance interval time defined ideal, i.e. 30%. This indicates that as long as the learning activities for each meeting, student activities more dominant to listen to explanations teacher/ friend.

The proportion of time a student reading a book (student book and other sources) is 12.83% of time available for each meeting. Percentage of the time this activity remains in ideal tolerance interval specified. This indicates that the student activities in reading books and Student Worksheets are already good, but still needs to be improved. While the percentage of time the activity write (write the things that are important from an explanation of the teaching, solve problems, work on the student Worksheet, make conclusions) of 28.84% (21,13% + 7,71%) bcrada on the interval time tolerance is ideal. This indicates that the activity write (write the things that are important from an explanation of the teaching, solve problems, work on the worksheet, Students inferences) is good, but needs to be improved.

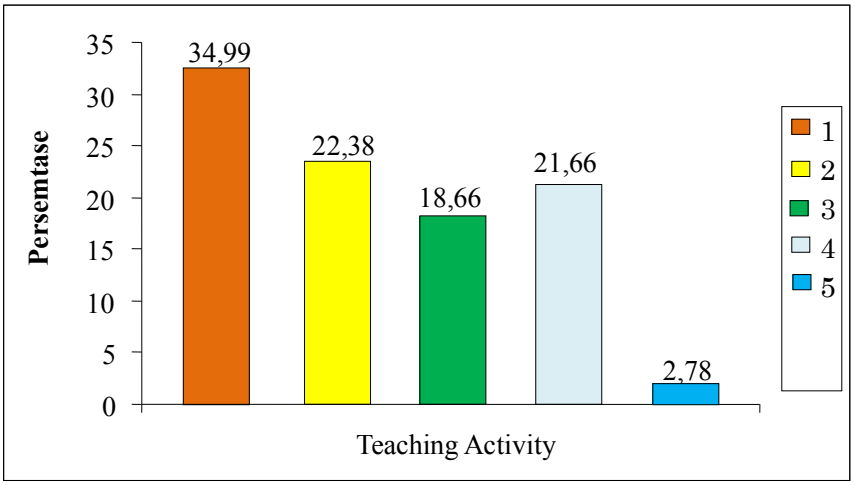
Percentage of the aktititas students discuss/ask kcpada students and students, students and lecturers/teachers of 36.26% (15,13 21.13% +%) are on under ideal time tolerance interval specified. This shows that the activity of the students asking/discussing with students and teachers do not meet the criteria set. Student activities, however, is a discussion/ask with his friend far outweigh the student activities discuss/ask teachers. Student activities are not relevant to the teaching and learning activities are in the ideal time tolerance specified i.e. 0.77% of the whole time, so it is generally interested students/earnestly follow the teaching and learning activities.

4.2 the average percentage of time spent by the teacher (Lecturer model) to perform each of the categories of activities are presented in the following table.

Meeting	Persentese average Frequency of teaching Activities For category (%)				
	1	2	3	4	5
I (2X45`)	36,32	20,34	17,66	22,34	3,34
II (2X45`)	37,67	20,00	15,67	23,33	3,33
III (2X45`)	35,00	25,00	16,66	20,02	3,32
IV (2X45`)	31,00	22,33	21,01	22,32	3,33
V (2X45`)	32,33	24,33	17,67	22,33	3,33
VI (2X45`)	37,67	22,33	23,33	16,67	0,00
Average percentage	34,99	22,38	18,66	21,66	2,78

Table 4.2 calculation of the average percentage of Time Teaching Activities For teaching and learning activities

The average percentage of time spent by teachers in conducting activities category in the table above, it can be represented by the following diagram.



The average percentage of time spent by the teacher to do each of the categories of activities are: 34.99%; 22.38%; 18.66%; 21.66%; 2.78%. The average percentage was obtained from the quotient number percentage activities for each category with the large number of meetings, i.e. 6 times.

The largest proportion of the time used the teacher during the lesson activity is conducting activities to explain/give imformasi, namely 34.99% of time provided. Percentage of activities this past the upper limit of the interval time tolerance activities explain/ give information,i.e. 30%. This indicates that too many teachers still giveexplanation or provide information on students.

The average percentage of teaching time doing activities to observe the work of students of 22.38% of time available for each meeting. Whereas activities motivate students of 18.66%. and giving instructions/guide activities 21,66%. The activity of the third percentage of 62.7%. This, if referred to the criteria of the determination of the ideal time percentage of ketercapaian of teaching activities, it can be concluded that the percentage of teaching activities do not meet the attainment percentage of the ideal time or interval time tolerance specified teaching activity category.

During the learning activity, found the teacher doing activities that are not relevant to learning. But the percentage is very small and is still within the limits of tolerance.This suggests that faculty genuinely enthusiastic about implementing the learning well.

CONCLUSIONS AND SUGGESTIONS:

CONCLUSIONS:

Based on the findings and the results of data analysis, things can be summed up as follows:

1. Based on the perceptions and experiences of experts it can be concluded that the model portfolio to implement development in the learning of mathematics competency PGSD (building Space) being developed can be applied practically and effectively in the implementation of learning students Prospective primary teachers (PGSD) in class by using the provided learning devices.
2. The resulting device supporting learning models in the implementation of learning math competency (building Space) through a portfolio to implement validation criteria, practicality, and effectiveness. The device consists of a unit of learning Events Lectures (SAP) book I to Book 5, and Student Worksheets (MFI), the teacher's Handbook, Student Handbook.
3. The implementation of the learning Portfolio to implement Mathematical competence (building Space) can increase student traffic PGSD in applied learning in everyday life Giometri in the primary.
4. The implementation of the learning Portfolio to implement mathematical competence (building Space) can improve Student Achievement

SUGGESTIONS

Based on the conclusions of the above study, researchers give advice and recommendations to practitioners who are interested in implementing the model in the implementation of giometri learning in elementary school through the development of learning portfolios to implement.

1. The resulting learning model is new to the development stage in one university that is University PGSD PGSD Serambi Mekkah Banda Aceh, advised on the teachers and researchers to implement this model at a broader scope in some existing University PGSD in Aceh. Thus, the results obtained will be more extensive, accurate and in-depth associated with this model, so it can be used as a reference for developing mathematical models of learning in elementary school.
2. For teachers who want to apply this model on the other competencies can design/ develop their own learning device is necessary to pay attention to the learning model components and characteristics of the subject matter that will be developed.
3. Teachers working to improve mastery of the concepts of mathematics competence of "building space" students who are associated directly with the problems that exist in their neighbourhood, this model can be used as an alternative answer to the problem. So that learning will take place are contextually related to the real problems, whether simple or more complex.
4. For lecturers and researchers wishing to apply this learning model, it is advisable to study further about how the description of the characteristics and way of thinkingin solving problem PGSD students (the problem) is given to do with everyday life.

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