



OBE analysis: Learning outcomes of PG PAUD study program graduates

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Abstract

The OBE-based curriculum is a tertiary curriculum that emphasizes learning outcomes as an important point in curriculum development, so far the PG PAUD FKIP (Early Childhood Education, Faculty of Teacher Training) Universitas Ahmad Dahlan, Yogyakarta, study program has not implemented OBE as a basis for curriculum development. Therefore, the identification and determination of learning outcomes is very important to do as the beginning of implementing OBE. This study aims to identify the extent to which the PG PAUD FKIP UAD Study Program has implemented OBE, especially in the stages of formulating and determining Graduate Learning Outcomes (GLO). The results of the PG PAUD FKIP UAD curriculum research still require a continuous improvement process to be declared as the OBE Curriculum of the PG PAUD FKIP UAD Study Program, especially at the stage of analyzing student learning achievements still require learning outcomes evaluation instruments, adjusting the alignment of abilities needed, especially in soft skills needed in the 21st century, namely computational thinking, study programs also require benchmarking activities with a wider scope. It is expected to implement the results of the initial identification related to the OBE curriculum development process for study programs.

Keywords: outcome-based-education, learning outcome, product

INTRODUCTION

National Higher Education Standards (SN Dikti or SNPT) set by the government through the Regulation of the Ministry of Research, Technology and Higher Education No. 44 of 2015 and updated with the Regulation of the Ministry of Education and Culture Number 3 of 2020 (Indonesian Ministry of Education and Culture, 2020), is one of the references that guides all universities in providing quality educational services. The regulation regulates three standards, including: (1) national standards of education; (2) national research standards; and (3) national standards of community service. These three standards are a reflection of the implementation of the tri dharma of higher education which is the main role of universities in the midst of service to the community. All of these standards are expected to be well implemented to produce quality services (Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 3 of 2020 concerning National Higher Education Standards, 2020).

These standards are basically used as a reference in compiling, organizing, and evaluating the curriculum. The curriculum in higher education has its own characteristics in each study program. Similarly, PG PAUD study programs in all universities, including PG PAUD at

Universitas Ahmad Dahlan. The implementation of the PAUD PG curriculum needs to be monitored and evaluated as an internal quality assurance measure in the smallest unit. One part of the curriculum that needs to be monitored in its implementation is the standard learning process. Learning process standards are important to monitor, because the learning process will affect the results, namely the acquisition of graduate learning outcomes (GLO) in accordance with the GLO set by the PG PAUD study program (Junaidi, 2020).

The success of obtaining graduate learning outcomes has not been measured with valid tools to meet the elements of readability, depth, and usefulness. It has not been measured whether there is an integration of research results and lecturer service that supports the learning process. In addition, not all learning methods used by lecturers can be identified both in RPS and evidence of realization. Meanwhile, the student-centered active learning model is important to use today. Another fact found is that there is no monitoring and evaluation system that can be used practically by every lecturer to self-evaluate the learning process carried out.

The higher education curriculum is a set of plans and arrangements related to graduate learning outcomes, study materials, processes, and assessments used as guidelines for the implementation of study programs (Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 3 of 2020 concerning National Higher Education Standards, 2020). OBE is one of the curriculum frameworks based on the outcomes of graduate achievements. With OBE, study programs can plan in advance the final skills that must be mastered, describe in learning and assessment methods that are in accordance with the predetermined outputs. Implementing OBE does not mean changing the entire previous curriculum setting, the emphasis on adjustment is more emphasis on students' final abilities that are more in line with the needs of the world of work.

Implementing OBE also requires careful planning, this concept has been used in developed countries before but in Indonesia itself it has only started since 2019. Similarly, at Ahmad Dahlan University, one of them is in the PG PAUD study program, Faculty of Teacher Training and Education, which is still very early in an effort to implement OBE. Therefore, this study was conducted to identify the extent to which the PAUD PG Study Program has implemented OBE, especially in the stages of formulating and determining Graduate Learning Outcomes (GLO). The results of this research will be input and follow-up plans that can be done as an effort to implement OBE.

METHOD

This research is a qualitative approach research that aims to describe the results of identifying the extent of the application of OBE in the curriculum of the PG PAUD Study Program at the graduate level or level 6 KKNI. The qualitative approach was chosen in this study with the consideration that researchers can dig deeper related to the results of the OBE implementation analysis so that it can be used as a basis for follow-up actions for the improvement of the PAUD PG Study Program curriculum. In this research stage, researchers will explore the process of analyzing Learning Outcome (LO) design achievements; alignment of LO with the vision and mission of universities, faculties, and study programs; as well as the stages of GLO preparation.

Data will be obtained through interviews involving study program policy stakeholders, the study program curriculum development team, and the lecturer council as informants, while participants in this study are active students and graduate users. To strengthen the findings, the data is supported by the 2020 PAUD Study Program curriculum document that has been ratified. Data analysis is carried out by organizing in advance the data obtained through the google form questionnaire, categorizing according to the theme and type of data, synthesizing classified data, compiling data according to the focus of research, and drawing conclusions based on the research formulation.

RESULT AND DISCUSSION

OBE as a curriculum implementation model that emphasizes teaching activities, learning activities, assignments, and assessments in synergy with learning outcomes (LO). Developing an OBE-based curriculum does not mean that very significant changes are made to the initial curriculum that has been used or implemented. By referring to OBE, the learning process is in line with the learning system, learning methods, learning activities, and learning assessment methods. The OBE stages are divided into two parts, namely; 1) the design stage of learning outcomes, and 2) the delivery stage of learning outcomes.

The learning outcomes design stage is carried out by compiling community needs, student and graduate needs, user or stakeholder needs, government needs, study program needs, faculty needs, and university needs. The hierarchy of needs is arranged from the bottom up and is implemented at the delivery learning outcomes stage which is arranged by formulating the vision and mission of the university, the vision and mission of the faculty, the vision and mission of the study program, the competence of graduates, the learning outcomes (PLO) program,

course learning outcomes (CPMK), Lesson Learning Outcomes (Sub CPMK), criteria / indicators of LO achievement, determination of assessment, and determination of learning activities.

The PAUD PG Study Program at FKIP UAD as one of the study programs that began to develop an OBE-based curriculum, as a basis for development, an evaluation was carried out to what extent the study program had carried out directed development on OBE. As the OBE principle in curriculum development does not have to change the entire curriculum that has been prepared. Based on the results of the analysis of stage 1 of the PAUD PG Study Program Curriculum, the following data were obtained:

Table 1. Analysis of Learning Outcomes Design Achievements of PG PAUD Study Program

OBE Stages	Achievements of study program	Result	Follow Up Plan
Review and formulate what is needed by the community	The study program has never asked for input from the general public through PKM activities, work practices, community service, discussions with associations, seminars	There has been no input regarding the soft skills of ECCE students, the suitability of knowledge, the suitability of lecturer competence in PkM, the suitability of lecturers with limuan.	Instruments will be made related to input, expectations, suggestions for the soft skills of ECCE students, the suitability of knowledge, suitability of lecturer competence in PkM, suitability of lecturers with the science.
Review and formulate what is needed by Students and Alumni	The study program periodically asks active students to assess the learning process, but has never asked alumni	The results of the student satisfaction questionnaire are active on the lecturer's learning process, but the results of the questionnaire have not been fully used as a reference for curriculum improvement	Improving the satisfaction instrument of active students and alumni to be more focused on the Lecturer Teaching Index (IPD) survey, the survey results will be used as a basis in the formulation of LO.
Review and formulate what is needed by Graduate Users / employers	The study program has received input from users and reviewed and formulated the results using the instruments in document III A BAN PT	Users said they needed PG PAUD graduates who were able to accompany ABK	The profile of graduates in the 2020 curriculum has been prepared profiles of study program graduates: PAUD teachers, PAUD education staff, <i>Shadow teacher</i> ABK AUD and will be adjusted to level 6 KKNi
Translate what is needed by the	The Study Program conducts analysis related to	The 2020 curriculum is in	The 2020 curriculum document will be

Government / Ministry of Education / Accreditation Agency	PT regulations, namely: Law No. 20/2003; Law No. 20/1997; Government Regulation No 4/2014 Law No. 1/2004 Law No 12/2012 Government Regulation No 23/2005 Per. President No 8/2012 Permendikbud No 73/2013 Permenristekdikti No 44/2015 Permenristekdikti No 50/2015 Permenristekdikti No 32/2016 Permenristekdikti No 62/2016	accordance with the regulator's provisions	adapted to the OBE concept in order to answer the needs of the industrial/work world
The 2020 curriculum document will be adapted to the OBE concept in order to answer the needs of the industrial/work world	The study program has not fully compiled a SWOT analysis related to educational activities, research, service, and stakeholder input related to curriculum development and implementation	The results of the SWOT Analysis put more emphasis on the performance of study programs	The study program will conduct a re-SWOT analysis by emphasizing curriculum development and implementation
Review and formulate what is needed by the Faculty	The study program ensures that the faculty RENSTRA is in accordance with the study program RENOP in compiling curriculum development including faculty VMTS achievement strategies, governance principles, PMB systems, human resource development, academic atmosphere, financial management, and scientific development	There is no formulation of faculty needs	The study program will evaluate the RENOP and adjust it to the faculty RENSTTRA according to covering the faculty's VMTS achievement strategy, governance principles, PMB system, human resource development, academic atmosphere, financial management, and scientific development (RESNTRA FAKULTAS)
Review and formulate what the University wants	The study program has not prepared a SWOT based on the achievements or quality objectives of the university, faculty plan, and study program plan	There is no formulation of university needs	The study program will compile a SWOT analysis based on the achievements or quality objectives of the university, faculty plan, and study program plan.

The result of the first stage is that the study program has a *Learning Outcomes* (LO) formulation which will then be adjusted to the Vision, Mission, Goals and Objectives of the study program – faculties – universities. The results of the evaluation are contained in table 2 below:

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Table 2. LO ALIGNMENT PG PAUD STUDY PROGRAM

LO STUDY PROGRAM	Vision and Mission of the University	Faculty Vision and Mission	Vision and Mission of Study Program	Graduate Competencies/Educational Objectives	PLO	CPMK	SUB CPMK	LO Achievements	Assesment	Activity
Critical thinking	Not yet compliant	Not yet compliant	Not yet compliant	Appropriate	Appropriate	Appropriate	Appropriate	Appropriate	Not yet compliant	Appropriate
Collaboration	Not yet compliant	Not yet compliant	Not yet compliant	Appropriate	Appropriate	Appropriate	Appropriate	Appropriate	Not yet compliant	Appropriate
Troubleshooting	Not yet compliant	Not yet compliant	Not yet compliant	Appropriate	Appropriate	Appropriate	Appropriate	Not yet compliant	Not yet compliant	Appropriate
Computational thinking	Not yet compliant	Not yet compliant	Not yet compliant	Not yet compliant	Not yet compliant	Not yet compliant	Not yet compliant	Not yet compliant	Not yet compliant	Appropriate

LO in addition to being aligned with the vision and mission, educational goals, is first adjusted to the PLO (*Program Learning Outcomes*). The term PLO is also the same as GLO (*Graduate Learning Outcomes*) in accordance with the concept of KKNi (Indonesian National Curriculum Framework). In the formulation of GLO, it is carried out in several steps, in its implementation, the study program carries out activities as table 3 below as follows:

Table 3 Preparation of Study Program GLO

Activity	Study Program Achievements	Result
Conduct a tracer study	Done	Formulation of abilities needed by <i>stakeholders</i> that focus on the ability of specific skill aspects.
Conduct a SWOT analysis	Done	Formulation of a map of the strength of lecturer competencies, supporting facilities, curriculum evaluation, and graduate opportunities.
Looking at the description of KKNi level 6	Done	Formulate GLO according to the description of level 6.
Pay attention to international criteria	Not done yet	Does not yet have a formulation of national criteria
Formulate into 4 aspects (attitude, knowledge, general skills and specific skills)	Done	GLO is formulated in 4 aspects with the addition of associations.
Reformulation of GLO to LO with properties meets international criteria	Not done yet	Does not yet have a formula based on the reformulation of GLO to LO in accordance with international criteria

The GLO that has been formulated is further described in Course Learning Outcomes (CPMK) which is also called *Course Learning Outcomes* (CLO). To achieve CLO, activities are provided that allow students to get learning experiences in accordance with the planned achievements in each meeting. At the end of learning, student achievement must be measured to determine the achievement of student abilities. If the expected ability cannot be achieved, it can be done remedial. Student achievement must also be adjusted to Bloom's ability level so that students have abilities that are in accordance with the achievement of level 6 KKNI. In the end, by implementing OBE as a curriculum framework at the undergraduate or level 6 level, it is hoped that students can answer the challenges of the skills needed in the future both nationally and internationally, so that there is no longer a gap between the world of education in universities and the world of work and the need for innovation.

The results of the Learning Outcomes Design Outcomes Analysis that have been carried out by the PAUD PG Study Program in table 1 show that they have not fully implemented OBE in designing the curriculum, especially in the stages of preparing LO or Graduate Learning Outcomes (GLO). This can be seen at an early stage in formulating limited community needs to users, alumni, the basis of government policy, conformity with the management of study programs. When referring to (Directorate General of Learning and Student Affairs of the Ministry of Technology and Higher Education Research, 2018) (Junaidi, 2020), it is clearly stated that the formulation of GLO is carried out by assessing the needs of the world of work both needed by the government, the business world and industry, the need to develop science and technology, and associations. Studies, inputs and evaluations from various parties will be used as a reference in compiling the abilities of graduates and their roles in the world of work.

The needs of the world of work are one of the important points as a basis for formulating graduate achievements because the ability of graduates has been considered unable to meet the abilities needed by users. In addition, there is a development of changes in the 21st century with the Industrial Revolution era 4.0 towards 5.0. The main ability formulated through input from the world of work is the *ability to soft skill*. Based on (O'Brien, 2010; Rosalina & Yuliari, 2019), soft skills needed in the world of work are *communication skills, organization skills, leadership, effort, group skills, and ethics*. Meanwhile, according to (Gotama, 2018), there are 20 soft skills that must be developed in the world of education in the face of the Industrial Revolution 4.0, namely distinguishing good and bad, justice, *ugahari* attitude, constancy, being fair, doing earnestly and willingness to bear the pain of hard work / work / tasks, being loyal to the tasks entrusted, giving meaning to their own hard work and hard work, readiness and Generosity in serving others, *creativity, critical thinking/problem solving, communication,*

collaboration/team-working, leadership, digital literacy, emotional intelligence, entrepreneurship, and global citizenship.

The achievement analysis stage in table 1 also obtained data that the study program has asked for input and suggestions to students and alumni related to the learning process, but the results of the review of these inputs and suggestions have not been used as a reference in the preparation of the curriculum. Based on (Directorate General of Learning and Student Affairs of the Ministry of Research, Technology and Higher Education, 2018), input and suggestions from students and alumni are one of the elements in compiling graduate achievements. Students and alumni are subjects of learning, so both have learning experiences that can be used as a basis for making improvements through curriculum reviews.

Analysis of graduate achievements is also obtained from users, in table 1 the Study Program has asked for input on the abilities needed by graduate users or stakeholders. The results of these inputs formulated three graduate profiles and the characteristics of study programs. The compiled graduate profiles are then described and evaluated related to the suitability of the Indonesian National Qualifications Framework (KKNI) level. For the undergraduate level, the profile of graduates who have been determined is evaluated related to the roles and responsibilities of level 6, namely the position of technician or analysis (Indonesia, 2012a). Likewise, the stage of analysis of graduate achievements is carried out based on government policy as a regulator so that the entire educational process is in accordance with the mandate of the law. The use of policies does not mean that learning outcomes must be equated with one another, but rather to facilitate the equalization of capabilities throughout the R1 region.

The equally important stage in the analysis of learning outcomes is conformity with the needs of study programs, faculties and universities. So far, the PG PAUD Study Program is only in the stage of adjusting to the Vision and Mission and objectives of the study program. The preparation of the analysis should use the SWOT technique (*Strength, Weakness, Opportunity, and Threat*). The advantage of using this technique is that organizations can determine the right strategy to achieve effective and efficient graduate abilities. As a result of research (Syahid, Nahdia Asy & Suwarni, 2018), by using the SWAOT technique an organization will easily develop a product development strategy appropriately and be able to compete competitively.

The achievements of graduates of the PG PAUD FKIP UAD Study Program written in table 1 based on input and suggestions from users or stakeholders are formulated, namely ECCE teachers, ECCE education staff, Shadow teachers ABK AUD. When referring to the KKNI

Curriculum (Indonesian National Qualifications Framework), the ECCE Teacher Profile is a profile that is not in accordance with level 6 KKNi. That's because level 6 is grouped into the position of technician or analyst. while graduates who are experts or often referred to as professions are at level 7 KKNi. The difference in graduate profiles refers to level 6 work abilities, namely being able to apply, study, make designs, utilize science and technology in solving procedural problems. At level 6 this emphasizes that graduates are mastering concepts, applying areas of expertise and benefits of science, decision making, own work responsibilities independently (Indonesia, 2012b).

In addition to analyzing the learning outcomes of graduates, the suitability of LO alignment with the Vision and Mission of the University, Faculties, and Study Programs is carried out. Based on table 2, it can be seen in the column of educational objectives as largely aligned with the LO study program, namely critical thinking, collaboration, problem solving, but computational thinking is not yet appropriate. These four soft skills are the main soft skills needed by graduates in the industrial era 4.0, while the other LOs have not been analyzed in alignment with the Vision and Mission of the University, Faculties, and Study Programs.

Critical thinking is the ability needed to understand concepts, apply, synthesize and evaluate information obtained or generated. Someone who has critical thinking is characterized by fluency, flexibility, originality, and elaboration skills. These skills can be developed in the learning process through various learning methods such as research-based learning, active-learning. Someone who has the ability to think critically will be better at building the quality of thinking so that it affects good learning outcomes and also in daily activities. It can be said that to face the challenges of the 21st century, the ability to think critically is an ability that must be possessed by every individual (Gotama, 2018; Nelson & Crow, 2014; Syafitri et al., 2021; Utami et al., 2018; Zubaidah, 2017).

Another skill is collaboration, this ability is needed by graduates when facing the current 21st century. The ability to collaborate becomes part of social skills that train a person to make decisions together. The ability to provide opportunities for each group member to actively and consistently formulate a solution to a problem. In the learning process, collaborative abilities are also able to develop attitudes to work in groups, compromise with differences of opinion, participate in discussions by giving opinions, listening to others, and supporting the opinions of others (Harida et al., 2021; Indriwati et al., 2019).

LO alignment is also seen in problem-solving soft skills. According to (Maulidya, 2018; Sulasamono, 2012), problem solving or problem solvers are skills or abilities resulting from the learning process as part of intellectual skills. In the realm of Bloom's Taxonomy, problem solving

is at level four, namely create. Even in the 2013 Curriculum this ability is one of the main goals in the learning process. Problem solving is divided into two types, namely well defined and ill defined. Problem solving that a person has is influenced by wrong motivations, beliefs and attitudes, habits, and emotions.

An ability that has not been developed in graduates in the PG PAUD Study Program is computational thinking. This ability is a hallmark of the 21st century that is aligned with problem-solving abilities. Computational thinking according to (Syaeful, 2017; Wing, 2006), think computing is a way of solving problems but does not have to use computers as a medium. Strengthened by (Yadav A., Gretter S., Good J., 2017), computational thinking skills are the ability to develop problem solvers and think critically to create, create, and develop technology, equipment, or systems that can later be utilized in everyday life. Even today computational thinking is not always defined as programming, having the ability to think like commuting. This ability emphasizes understanding the digital tools used to solve problems from the fields of science to the social sciences humanities.

The ability to think computationally is an ability that is not in line with the Vision and Mission of universities, faculties, and study programs because this ability is better known in the field of science that emphasizes problem-solving skills by utilizing computerization. Basically, computerized thinking skills consist of 4 components, namely algorithms, pattern recognition, and abstraction and generalization. The concept of computational thinking is commonly used in the field of science and has only begun to be developed in the field of social humanities recently ahead of the development of OBE-based curricula. This is written in (Directorate General of Learning and Student Affairs of the Ministry of Technology Research and Higher Education, 2018), facing the Industrial Revolution Era 4.0 the formulation of GLO is expected to have the ability: data literacy, literacy, technology, human literacy, understanding the signs of the Industrial Revolution 4.0, and understanding science.

Based on table 3 related to the preparation of GLO study programs, it is shown that the activities that have been carried out include conducting tracer studies, SWOT analysis, looking at the description of KKN level 6, and formulating into 4 aspects of achievement. Activities that have not been carried out in compiling GLO study programs are benchmarking or paying attention to graduate achievement criteria at the international level and reformulating GLO to LO with properties that meet international criteria. Benchmarking and reformulating GLO to LO is one of the characteristics of OBE implementation.

The activities of preparing GLO study programs in table 3 with tracer studies, SWOT analysis, examining the description of KKN level 6, and formulating 4 aspects of abilities have something in common, namely the preparation of graduate abilities including aspects of attitudes, knowledge, general skills, and special skills. The elaboration of these 4 aspects is in addition to being stated in (Directorate General of Learning and Student Affairs of the Ministry of Technology Research and Higher Education, 2018; Indonesia, 2012b), in line with the OBE concept implemented in Malaysia as the results of research (Mohayidin et al., 2008; Solikhah, 2015), LO achieved by graduates consists of cognitive aspects at level four, psychomotor aspects at level four, and affection at level three. The emphasis of the three domain is in line with the OBE-based KKN concept.

Benchmarking is one of the efforts that aims to improve the excellence, performance, quality of a service or product. In the world of education, benchmarking activities provide benefits, namely improving the quality of education by making improvements based on good practices carried out by other educational institutions. With this activity, an educational institution can conduct continuous self-evaluation by comparing between its own institution and other institutions better. Educational institutions can identify, adopt and apply good practices from the institution to be applied in their own institutions so that they become better. The PG PAUD Study Program as one of the institutions in the field of early childhood has only bench-marked with national coverage, while the needs and demands for change expect an expansion of coverage. Study programs need to try to benchmark with a wider scope, namely on an international scale, in addition to providing more global insights, with the AEC providing opportunities for each individual to enter the wider world of work. By setting a standard with a wider scope, it is an effort for study programs to be recognized more widely not only in the national environment but also internationally (Paulus & Devie, 2013; Suluri, 2019).

CONCLUSION

The development of the OBE curriculum in the PG PAUD FKIP UAD study program has begun to be carried out, although not all stages have been implemented, for example in the analysis of LO design achievements, the study program still requires instruments as a tool to obtain input from the community regarding the soft skills that students need; adjustment of graduate profiles in accordance with the KKN level, compiling SWOT related to curriculum development and implementation; adjust soft skills according to the needs of the times; and

benchmarking with international coverage so that it can be the basis for improving the quality of education.

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