

# Learning Experiences In The Emerging Outcomes-Based Education (OBE) Curriculum Of Higher Education Institutions (HEI'S) On The Scope Of Hammond's Evaluation Cube

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## ABSTRACT

In the Philippines, the Commission on Higher Education (CHED) required the implementation of Outcomes-Based Education (OBE) in universities and colleges in 2012 through Memorandum Order No. 46 to ensure continuous quality improvement. Due to this demand, Samar State University, as a transformative university committed to leadership, innovation and service excellence, decided to promote the adaptation of OBE in response to the increasing interest in student learning outcomes and a call for educational responsibility (Lixum, 2000) nowadays. Achieving continuous quality improvement (CQI) would be through an evaluation. Thus, this study aimed to evaluate the learning experiences of the outcome-based education on the scope of the Hammond evaluation cube. The results show that along instruction, the alignment of the course content to the Vision, Mission, Goals, and Objectives (VMGOs), Program Graduate Outcome (PGO), Course-Learning Outcome (CLO), Intended-Learning Outcome (ILO), Outcomes-Based Teaching-Learning (OBTL) and Assessment of Learning are not yet in effect in aiming for successful learning experiences. Along institutions, the interaction of the students, teachers, and administrators' variables such as the students' personal and family characteristics, teachers' professional and teaching methodology, and administrators' characteristics whether it conforms to the minimum requirement set by CHED, could possibly affect in the successful implementation of the OBE curriculum. Moreover, the behavioral dimension of the OBE curriculum, once successfully implemented, would lead to the positive learning experiences of the students.

## Keywords

Outcomes-Based Education, Evaluation, Continuous Quality Improvement

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## Introduction

Outcomes-based education means clearly focusing and organizing everything in an educational system around what is essential for all students to be able to do successfully at the end of their learning experiences (Spady, 1994; Davis, 2003; Oriah Akir, Tang Howe Eng, Senian Malie, 2012). This means it starts with a clear picture of what is important for the student to be able to do, then organizing curriculum, instruction, and assessment to make sure this learning ultimately happens. Learning experiences in an OBE curriculum are outcomes that are clear learning results that students demonstrated at the end. They are the learning results that are desired from students which occur during or after the significant learning experiences.

OBE has been one of the trends in the international arena to promote education reform and policy. It has been implemented in many countries such as USA, Canada, Australia, New Zealand, South Africa, Hong Kong, Malaysia, and

Philippines alike (Akir et al, 2012). Nonetheless, reactions towards OBE vary among others.

In the Philippines, the Commission on Higher Education (CHED) required the implementation of Outcomes-Based Education (OBE) in Philippine universities and colleges in 2012 through CHED Memorandum Order No. 46. The question is how OBE in the Philippines differs from other countries. CMO 46 acknowledges that there are two different OBE frameworks, to wit: strong and weak. CHED subscribes to a weak or lower case due to the realities of the Philippine Higher Education. And CHED acknowledged that there are better OBE frameworks than what they have implemented, which do not limit HEIs to the implementation of the weak versus the strong OBE. This is otherwise called as transformational OBE of Spady.

In ensuring quality education and internationalization, Samar State University as a transformative university committed to leadership, innovation and service excellence, decided to promote the adaptation of OBE in response to the

increasing interest in student learning outcomes and calls for educational responsibility (Lixum, 2000) nowadays. SSU is still at an infant age in terms of OBE. It was only in 2013 that this educational reform was introduced to the SSU community through an in-house seminar-workshop. In short, SSU is still in the transition period of such educational reform. Moreover, it is still on the process of promoting the practice of constructive alignment between outcomes, learning activities, and assessment tools, and an environment where all stakeholders engage in the process of transformative reflection and constant action. It was only in 2016 that the university handed the strict implementation of OBE. How was it implemented? There were series of information dissemination, constructive re-alignment, capacity building, assessment of outcomes and evaluation, and continuous quality improvement.

A continuous quality improvement is a key element in the quest towards excellence. It is also a central component of OBE framework as well as quality assurance programs as stated in CMO No. 46 series of 2012. One way to the path of continuous quality improvement of the curriculum could be achieved through an evaluation. Thus, this study aimed to evaluate the learning experiences of the outcomes-based education on the scope of the Hammond Evaluation Cube. Hammond Evaluation Model is a model that stresses out in investigating the factors that influence the success or failure of any educational activity, developed with a three-dimensional cube, called "structure for evaluation". It deals with program evaluation with three dimensions such as: 1) instruction: organization, content, method, facilities, and cost; 2) Institution: student, teacher, administrator, educational specialist, family, and community; and, 3) behavior: cognitive domain, affective domain, and psychomotor (Hammond, 1968).

### Statement of Objectives

This study aimed to evaluate the learning experiences of the outcomes-based education curriculum of Higher Education Institutions on the scope of Hammond evaluation cube. Specifically, the following aspects were answered:

1. Describe how the instructional preparation is done and crafted in terms of the alignment of the

syllabi contents (VMGO-DLO-LO-LOC-OBTL-Assessment of Learning).

2. Describe how conducive the institution/department is in the implementation of OBE in terms of:

- 2.1 Faculty variable

- 2.1.1 Professional-related characteristics

- 2.1.2 Methods of Teaching

- 2.2 Student Variables

- 2.2.1 Personal Profile

- 2.2.2 Family-Related profile

- 2.3 Administrators

- 2.3.1 Dean Qualification (CHED)

- 2.3.2 Student to Faculty ratio (CHED compliant)

- 2.3.3 Faculty Workload and educational qualification

- 2.3.3 Facilities

3. Describe the attainment or non-attainment of identified learning outcomes based on the approved syllabi as follows:

- 3.1 Cognitive Learning outcomes

- 3.2 Affective Learning outcomes

- 3.3 Psychomotor learning outcomes

### Significance of the Study

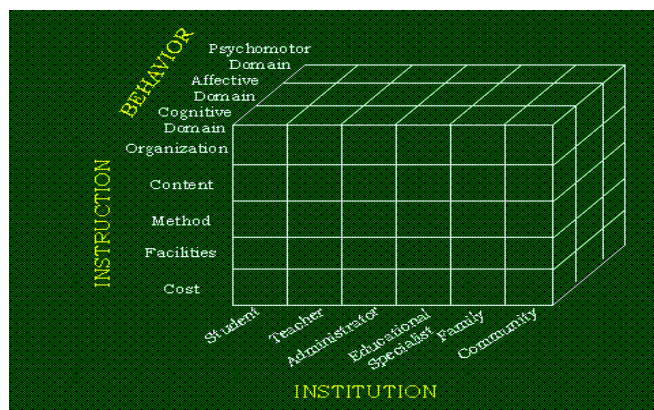
The study would help to build a learning environment that enriches the ownership of curriculum planning and deep practice among its faculty that would establish new opportunities for meaningful dialogue among peers, and facilitate the collective efforts of the institution in responding to the demand of accountability from accreditation agencies as well as the public review about the quality of teaching and learning in higher education.

### Framework of the Study

The study is anchored on one of the goal-oriented evaluation models known as the Hammond Evaluation model. Hammond stressed out in investigating the factors that influence the success or failure of any educational activity. He developed a three-dimensional cube which is called a "structure for evaluation". It deals with program evaluation with 3 dimensions such as 1)

instruction: organization, content, method, facilities, and cost; 2) Institution: student, teacher, administrator, educational specialist, family, and community; and, 3) behavior: cognitive domain, affective domain, and psychomotor (Hammond, 1968).

This evaluation process begins with a single issue of the curriculum. Second, the variables in the instructional and institutional domain were defined. Third, the objectives were specified in behavioral terms, and these behavioral objectives were assessed, and the last step was an analysis of the results.



**Figure 1. Theoretical Framework of the Study**

### Review of Related Literature and Studies

OBE is not a new educational practice but has already been adopted by some higher education systems around the world such as Europe, Australia, Canada and the US in order to ensure quality, transparency and compatibility among the credentials. Furthermore, outcomes-based learning is being recognized as the most suitable pedagogic model for the market-driven postsecondary systems of today's knowledge based economy. This innovative learning model provides institutions and governments with the best tools for quality measurement and credit transfer nationally as well as internationally.

Continuous quality improvement is a central component of OBE framework as well as quality assurance programs as stated in CMO No. 46 series of 2012. Hence, a systematic evaluation would be an important aspect in determining the weaknesses and strengths or the success and failure of any innovations.

As stated in Weiss (1998), evaluation is the "systematic assessment of the operation and/or the

outcomes of a program or policy, compared to a set of explicit or implicit standards, as a means of contributing to the improvement of the program or policy". There were two questions that you may ask about a program. This may include if the program has the intended effect (What are the outcomes?) or if the program being delivered was as it is originally constructed (What services are being delivered?). In these two questions, you may have several ways to evaluate the impact (the outcomes) and its effectiveness (process).

Based on the evaluation of Towers (1996) on OBE, he listed the following that are necessary to make OBE work: first, what the student is to learn must be clearly identified; second, the student's progress is based on demonstrated achievement; third, multiple instructional and assessment strategies need to be available to meet the needs of each student; and finally, adequate time and assistance need to be provided so that each student can reach the maximum potential. The implication is that outcomes-based education leads to educational change which is supported by Tucker (2004) who points out that OBE is a process that involves the restructuring of curriculum, assessment, and reporting practices in education to reflect the achievement of high order learning and mastery rather than the accumulation of course credits. Adam (2004, p.3) also agreed that learning outcomes and outcomes-based approaches have implications for curriculum design, teaching, learning and assessment, as well as quality assurance.

### Research Methodology

#### Design

Convergent mixed-methods was used on the basis of Hammond evaluation model. It enables any institutions to gather valid data needed to decide whether to adopt or continue in practice a given innovation. Quantitative approach was done to gather information using the survey questionnaire. Qualitative approach was utilized through interview, observations, and focus-group discussions.

#### Locale

The study was conducted to the programs of BS Statistics, BS Psychology, BS Information Technology, and BS Information System of the

College of Arts and Sciences (CAS) of Samar State University, Catbalogan City.

### *Population*

There are 54 teachers, 591 BS InfoTech students, 60, BS Statistics students, 317 BS Psychology students, and 151 BSIS students in CAS department.

### *Sampling plan*

The researcher has used a probability random sampling in selecting the respondents. Equal proportionate stratified random sampling was employed in the selection of the students, that is, there were 28 students for each program who were chosen as respondents.

### *Data Gathering Procedure*

The researcher has sought approval from the university president to undertake study on the learning experiences on the OBE curriculum of Higher Education Institutions through the different Deans/Heads, in order, for the researchers to administer their survey questionnaire and were able to access the necessary data that are useful in the study.

The survey was administered to the identified respondents consenting to participate.

Data collection was conducted using an adapted questionnaire that has undergone an expert and content validations. Cronbach's alpha was used to determine the internal consistency of the instrument. The questionnaire for students had obtained data on personal aspects, family-related characteristics, and the learning experiences in the course. The questionnaire for teacher-respondents contained: demographic characteristics, professional-related characteristics, and methods of teaching. In like manner, the interview guide and observational checklist that was used in the qualitative approach of the study has also undergone an expert validation.

The researchers sought help to the different program chairs of the four programs, CMIRC chair, and focal person for quality assurance in the evaluation of the course syllabus alignment using the rubric found in the Appendices. Focus-group discussion was conducted to faculty members and students of the college.

### *Statistical Treatment of Data*

The data were analyzed with the use of Microsoft Excel and SPSS. Analysis was facilitated by means of descriptive statistics and tests of relationships. Further, Moustakas's structured method of inductive data analysis was used.

### *Ethical Considerations*

#### *a. Potential risks/discomforts*

The potential risk of a loss of confidentiality was minimized due to the use of survey identification numbers and removal of personal identifiers at the time of data entry. The researchers also asked consent from the participants of the study in accomplishing the survey questionnaire and responding the interview. This study has also undergone the SSU Review and Evaluation Committee.

#### *b. Potential benefits*

Findings from this evaluation will provide information for assuring quality education.

## **Results and Discussions**

### **Instruction**

Tables 1 and 2, show the relationship between the program's instructional dimension and learning experiences. Along methods of teaching, it shows that there are varied teaching-learning activities employed by the faculty members in the implementation of the OBE curriculum. There are 21 teaching-learning activities that are used. The top three methodologies utilized by the teachers are brainstorming (83%), interactive learning and Projects (80%) and film showing (66%). This implies that somehow teachers use appropriate teaching methodologies for the alignment of the teaching-learning activities to the course learning outcome but in the FGD result, teachers found that students cannot easily adhere to the different methodologies because the students are still used to the traditional methods of teaching.

Methods of teaching has significant relationship to learning experiences ( $r = .257$   $p < 0.05$ ). This further means that the learning experience is dependent on the teaching-learning methodologies being used.



**Table 1. Outcomes-based Education's Teaching-Learning Methodology**

Teaching Methodology	(f)	(%)	Teaching Methodology	(f)	(%)
Film showing	20	66.7	Micro teaching	10	33.3
Projects	24	80.0	Tandem teaching	12	40.0
Group dynamics	18	60.0	Peer teaching	7	23.3
Case study	9	30.0	Multi-media/courseware/teachware	18	60.0
Workshops	11	36.7	Experiments	5	16.7
Simulations	9	30.0	Problem-solving	17	56.7
Dimensional question approach	9	30.0	Type study methods	6	20.0
Brainstorming	25	83.3	Reporting	17	56.7
Buzz sessions	7	23.3	Panel discussion	11	36.7
Informal creative groups	10	33.3	Team teaching	12	40.0
Interactive learning	24	80.0			

Content was determined through syllabi, its alignment to the University's Vision, Mission, Goals and Objectives, Program Graduate Outcome, Course Learning Outcome, Intended Learning Outcome, Teaching-Learning Activities and Course Assessment. The result indicates that the alignment of the syllabi is still "emerging". There are 80% from the faculty members whose alignment of syllabi are evaluated as emerging. This means that only some of the information regarding connection of the content between VMGO, PGO, CLO, ILO, and course assessment are provided. Further, in the FGD result, one of the teachers stated that, "I have still in the difficulty of formulating the course learning outcome and intended learning outcome so as to the alignment of the content". This implies that the OBE curriculum in terms of the syllabi content is not yet well implemented. The result also signifies that content has significant relationship to the learning experiences ( $r = .234, p < 0.05$ ). The result of the study was confirmed by the study of Lixum (2008) that in the preparation and crafting of the course content there should be an alignment to produce effective learning outcomes.

Instructional Dimensions	Pearson Correlation	Sig. (2-tailed)
Methods of Teaching	.257**	.006
Content	.234*	.003

### **Institution/Department**

Table 3 presents the professional-related characteristics of the teachers that could possibly

affect the implementation of the OBE curriculum. It is reflected that the average number of years in teaching of 8.5 years could be considered that teachers are already seasoned in the field and that can adapt any educational reform like the paradigm shift from traditional to OBE. The average number of workload of 14 could still be an ideal workload and this could imply that some of the faculty are designated with administrative positions. The number of preparations is 3 which is the minimum standard set by CHED. There is an average of 10 seminars/trainings attended by the teachers and majority (26%) of them had master's units and 23% had doctorate units. This signifies that teachers are already equipped in their line of expertise and it shows that teacher's characteristics have no significant relationship to the learning experiences in the OBE curriculum. Nonetheless, there are certain issues that arise from the faculty members during the FGD about the paradigm shift of the curriculum.

In the interview result, one of the teachers commented, "I consider my professional qualification not enough to address the issues of the implementation of the OBE curriculum because I still need to be capacitated along OBE".

**Table 3. Professional-Related Characteristics by the Teacher-Respondents**

Professional Characteristics	N	Minimum	Maximum	Mean	Std. Deviation
Number of Years	30	1	38	8.5	10.54
Number of Workload	30	6	30	14	7.94
Number of Preparations	30	1	5	3	1.03
Number of Seminars/Trainings	30	1	10	3	1.92
Highest Degree Earned	30	w/ Master's unit (26%)			

Along administrator, the curriculum itself met the minimum requirement of 1:30 teacher-student ratio and the faculty workloads are aligned to the field of expertise by the faculty handling general

subjects and major subjects of the curriculum. This signifies that the curriculum conforms to the minimum standards of CHED.

**Table 4. Relationship between OBE Curriculum's Institutional Dimension and Learning Experiences**

Institutional Dimension	Learning Experience		
	Pearson Correlation	Sig. (2-tailed)	N
<b>Student's Profile</b>			
Age	.277**	.003	112
Sex	-.107	.263	112
Family Size	.217*	.021	112
Father's Occupation	.051	.606	106
Mother's Occupation	.007	.945	112
<b>Teacher's Profile</b>			
Age	-.003	.977	112
Sex	-.039	.683	112
Civil status	.004	.963	112
Ave. Family Monthly Income	-.114	.290	88
Teaching Experience	-.058	.540	112
Number of Workload	-.012	.902	111
Number of Preparation	-.128	.179	112
Educational Attainment	.035	.718	112
Number of Trainings Attended	-.022	.827	99

The student variables involved in the study limit only to the personal-related characteristics namely, age and sex, and family-related characteristics such as, the size of the family and parent's occupation.

Table 4 reflects the cross tabulation of the age and sex distribution of the student-respondents. The age distribution of the students clustered around the mean of 20.5 years old with standard deviation of 2.5 years old and dominated by male students. This means that mostly of the students are in their year 3 and 4 of schooling with the OBE curriculum.

The family-related characteristics of the students also limit on the family size and occupation of the parents. Majority of the fathers are self-employed

(64.3%) and employed in a private and public sector (17.0%). Majority of the mothers are housewives (80%) and the family of the students had 6-8 family members. It signifies that the students belong to a big family size.

Generally, student's age and family size have significant relationship to learning experiences ( $r = .277$ ,  $p < 0.05$ ) and ( $r = .217$ ,  $p < 0.05$ ). This further means that as students becomes older, more learning experiences they get. Moreover, students who belongs to a bigger family size earn more learning experiences than those students who belongs to a small family size.

### **Behavioral Dimension**

Table 5 shows the attainment or non-attainment of the course outcome based on the approved syllabi.

The survey data of the learning outcomes based on the approved outcomes-based course syllabi are as follows: cognitive behavior (Q2-Q4), affective learning (Q4-Q5), and psychomotor learning (Q1).

The result shows that the learning outcomes indicated in the syllabus were attained by the students with the following mean results: Cognitive learning (4.12); affective (4.11), and psychomotor (3.92) which generally high.

**Table 5. Attainment of the Identified Learning Outcomes based on the Approved Syllabi**

Indicators	Responses						Mean
	SD	D	N	A	SA	Total	
1. The course aided student's demonstration of the learning goals.	4	3	20	59	26	112	3.92
2. The course helped students integrate the topics being studied with my prior knowledge and experiences	2		22	48	40	112	4.11
3. The course included analyzing or concretizing knowledge in practical applications	2	3	18	52	37	112	4.09
4. The course effectively supported students learning	2	1	19	46	44	112	4.17
5. Teaching encouraged students to reflect deeply on the subject.	3	1	21	46	41	112	4.11
6. The course had open atmosphere that encouraged students to discuss and ask questions.	2	2	17	55	36	112	4.10
Grand Total							24.49
Grand Mean							4.08

### Conclusion

Based on the findings, instructional dimension, in terms of the alignment of the course content to the institutions VMGO, PGO, CLO, ILO and Assessment of Learning are not yet effective in aiming for the successful learning experiences. In terms of the Institutional dimensions, the interaction of the students, teachers and administrators variables such as the student's personal and family characteristics, teacher's professional and teaching methodology, and administrator's characteristics whether it conforms to the minimum requirement set of the CHED possibly affect in the successful implementation of the OBE curriculum. And lastly, the behavioral dimension of the OBE curriculum once successfully implemented would have positive learning experiences to the students.

### Recommendations

Based on the evaluation made on the OBE curriculum, it is recommended that the institutions should give focus on the preparation and crafting of the syllabi especially on the constructive alignment because this could be the most

important thing in successful attainment of the outcomes-based learning experiences.

### References

- [1] Acharya, C. (2003). "Outcome-based Education (OBE): A New Paradigm for Learning." Triannual Newsletter produced by the Centre for Development of Teaching and Learning. November 2003, Vol. 7, No. 3. Retrieved 27 November 2018 from <http://www.cdte.nus.edu.sg/link/nov2003/obe.htm>.
- [2] Adam, S. (2004). Using Learning Outcomes: A consideration of the nature, role, application and implications for European education of employing 'learning outcomes' at the local, national and international levels. United Kingdom Bologna Seminar 1-2 July 2004, Heriot-Watt University (Edinburgh Conference Centre) Edinburgh, Scotland. Retrieved 2 November 2012 from <http://www.scotland.gov.uk/Resource/Doc/25725/0028779.pdf>
- [3] Biggs, J. (2004). Aligning teaching for constructing learning. The Higher Education Academy. Retrieved 3 March 2012 from <http://www.heacademy.ac.uk/assets/document>

- s/resources/resourcedatabase/id477\_alingning\_teaching\_for\_constructing\_learning.pdf
- [4] Biggs, J. & Tang, C. (2007). Outcomes-based teaching and learning (OBTL): What is it, Why is it, How do we make it work? Retrieved 3 March 2012 from [lc.hkbu.edu.hk/te/doc/preworkshop\\_reference.doc](http://lc.hkbu.edu.hk/te/doc/preworkshop_reference.doc) City University of Hong Kong (2010). OBTL in Context. Retrieved 21 November 2011 from [http://www6.cityu.edu.hk/obtl/index.asp?PAGE=OBTL\\_CONTEXTe](http://www6.cityu.edu.hk/obtl/index.asp?PAGE=OBTL_CONTEXTe).
- [5] Darling-Hammond, L. (1993). Reframing the School Reform Agenda. *Phi Delta Kappan*, 754.
- [6] Davis, Margery H.. (2003). Outcome-Based Education. *JVME*.
- [7] Evans, J. A. (1991). Can We Achieve Outcome-Based Education? *Educational Leadership*, 73.
- [8] Gomba, F. E. (2018, October 22). Procedures Manual: Quality management System ISO 9001:2015. Catbalogan City, Samar, Region VIII.
- [9] Guskey, T. (1992). The Importance of Focusing on Student Outcomes. *NCA Quarterly* 66, 507.
- [10] Hammond, R. L. (1968). Evaluation at the Local Level.
- [11] HANDBOOK ON TYPOLOGY, OUTCOMES-BASED EDUCATION, AND INSTITUTIONAL SUSTAINABILITY ASSESSMENT. (2014). Quezon City, Philippines.
- [12] Harden, R.M. (2002). Developments in outcome-based education, *Medical Teacher*, Vol. 24, No. 2, 2002, P. 117-120. HKIEd OBL Unit. (n.d.). Outcome-based Learning. Retrieved 15 April, 2012, from <http://www.ied.edu.hk/obl> HKIEd OBL Unit. (2011). Outcome-based Learning Staff Guidebook. Retrieved 21 December, 2011, from <http://www.ied.edu.hk/obl> HYPERLINK "http://www.ied.edu.hk/obl" <http://www.ied.edu.hk/obl>
- [13] Killen, R. (2000). Outcomes-Based Education: Principles and possibilities. Unpublished manuscript, University of Newcastle, Faculty of Education. Retrieved 31 March, 2012 from <http://drjj.uitm.edu.my/DRJJ/CONFERENCE/UPSI/OBEKillen.pdf> HYPERLINK "http://drjj.uitm.edu.my/DRJJ/CONFERENCE/UPSI/OBEKillen.pdf" <http://drjj.uitm.edu.my/DRJJ/CONFERENCE/UPSI/OBEKillen.pdf>
- [14] Lixum, W. (2000). Evaluation of Outcome-Based Learning in an Undergraduate English Program. *Research in Higher Educational Journal*, 2.
- [15] Marshall, W. G. (1991). Beyond Traditional Out-based Education. *Educational Leadership*, 71.
- [16] McKernan, J. (1993). Some limitations of outcome-based education. *Journal of Curriculum and Supervision*, 8 (4), 343-353. McMahon, T. and Thakore, H. (2006). Achieving constructive alignment: Putting outcomes first. *The Quality of Higher Education*, (3), 10-19. Retrieved 21 February 2012 from [HYPERLINK "http://www.ceeol.com/aspx/getdocument.aspx?logid=5&id=4cee9f36-7c71-48e6838b-6a83512baa61"](http://www.ceeol.com/aspx/getdocument.aspx?logid=5&id=4cee9f36-7c71-48e6838b-6a83512baa61) <http://www.ceeol.com/aspx/getdocument.aspx?logid=5&id=4cee9f36-7c71-48e6838b-6a83512baa61>
- [17] McNeir, G. (1993). Outcome-based education: Tool for Restructuring. Oregon School Study Council Bulletin (Eugene, Oregon School Study Council).
- [18] Oriah Akir, Tang Howe Eng, Senian Malie. (2012). Teaching and learning enhancement through outcome-based education structure and technology e-learning support. *Procedia - Social and Behavioral Sciences*.
- [19] Rabum, R. (1992). Outcome Based Education: Some Questions Addressed. *OASCD Journal*, 25.
- [20] Robert Burns and David Squires. (1987). Curriculum Organization in Outcome-based Education. *OBE Bulletin*, 9.
- [21] Schwartz, G. and Cavener, L.A. (1994). Outcome-based education and curriculum change: advocacy, practice, and critique, *Journal of Curriculum and Supervision*, (4), Summer, 326-338.
- [22] Spady, W.G. (1988). Organizing for results: the basis of authentic restructuring and reform, *Educational Leadership*, Vol. 46 No. 2, 1988, pp. 4-8.
- [23] Spady, W. G. (1994). *Outcome Based Education: Critical Issues and Concerns*. Arlington: American Association of School Administrators, North Moore Street, Arlington, VA 22209.
- [24] Towers, J. M. (1992). Some Concerns about Outcome-based Education. *Journal of Research and Development in Education*, 90.



- [25] Willian G. Spady and Kit J. Marshall. (1991).  
Beyond Traditional Outcome-based  
Education. *Educational Leadership*, 71.