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THE SOURCES OF OUTCOMES IN OUTCOMES BASED EDUCATION CURRICULUM DEVELOPMENT: A CLOSER LOOK

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Abstract

Outcomes Based Education, widely known as OBE, has become a curriculum byword across the disciplinary spectrum in higher education. However, despite the growing scholarly effort to account for the processes undertaken in developing a curriculum that is hinged on the outcomes, a functional synthesis of the sources of outcomes has not been made. This paper attempted to synthesize the sources of outcomes drawn from the field. Following the systematic review method, relevant studies were searched, collected, and analyzed. It emerged in the result that multiple sources were considered in making decisions about the outcomes. These sources of outcomes include regulatory bodies, institutional philosophy, industry demands, subject matter experts, curriculum benchmarks, and learning frameworks. It further found out that, in considering particular sources of outcomes in curriculum development, the unique contexts play an essential role. Thus, it is recommended that an examination of the experiences, resources, and demands should be carefully made, so that appropriate sources of outcomes may be considered. The implications to theory, practice, and research are discussed in the paper.

Keywords

Sources, Outcomes Based Education, Curriculum Development, Higher Education

1. Introduction

Despite the bitter controversies, Outcomes Based Education or OBE continues to banner in recent curriculum reforms in higher education focusing on the outcomes. Harden (2015) extolled that OBE "represents the most important development in education in the past two decades" (p. 27). It can be defined as an approach in education that views curriculum development as a community collaboration (Wright, 1985), considers all learners as capable of learning (Towers, 1996), and emphasizes the evidence of performance roles (Spady (1994). Given this, it can be implied that teachers who assume roles as curriculum developers continually face new expectations in response to OBE as a global trend extending in the post-COVID-19 education (Qadir & Al-Fuqaha, 2020).

Several OBE models collectively contribute to the current practices in OBE curriculum development. Champlin (1993) promoted the concept of mastery learning which places increased emphasis on student role in demonstrating the outcomes while Marzano (1994) devised a performance assessment system that provides a valid approach to assesses the outcomes. On the other hand, Spady (1994) encouraged a transformational philosophy to curriculum development that focused on the formulation of clear outcomes or what students learn (Rao, 2020). However, while these OBE advocators laid out the fundamental perspectives of OBE, they did not directly recommend how it can be translated in practice (Evans & King, 1992) which includes the concern on what sources should be considered in developing the outcomes.

Looking into the seminal works in curriculum theory, Tyler (1949) and Taba (1962) extended their discussions on broad sources, defined as bases that should be considered for a comprehensive decision about the curriculum objectives or outcomes. A comparison of their ideas would reveal a common ground. They described the sources of objectives as studies of learners, studies of contemporary life, society, and culture, suggestions from subject specialists, philosophy of education, analysis of nature of knowledge, and psychology of learning and learning processes. While these ideas are suggestive of the sources that may be considered in formulating outcomes, however, there is a need to concretely represent them particularly in the practice of OBE curriculum development.

A review of scholarly works supporting outcomes and OBE curriculum development as a transformational school reform process has been widely published over the last five years (Yen, Sekar & Ansari, 2016; Alkatheri et al., 2017; Bateman et al., 2017; D'cruz, 2017; De Guzman,

Edaño, Umayan, 2017; Kasturi, 2017; Vivek, 2017; Nakkeeran et al., 2018; Liebelt et al., 2018; Ayyappan et al., 2019; Ghafoor & Khan, 2019; Gunarathne et al., 2019; Jeppesen et al., 2019; Khanna & Mehrotra, 2019; Iqbal, 2020; Li, 2020; Prihantoro, 2020; Rao, 2020). The variations in the processes in the selected studies are suggestive of different sources considered in formulating the outcomes. However, despite further these works, there appears an inadequate effort for a functional synthesis of the sources of outcomes considering the diverse disciplines, experiences, resources, pressures, and needs in the field.

It is important in this paper to describe the different possible sources of outcomes used in varied contexts. It will positively offer significance to the theory, practice, and research of curriculum studies. It will generate knowledge to curriculum theorists as to how curriculum sources are represented in the development of the OBE curriculum and offer curriculum developers an array of starting point options in terms of sources that suit their particular contexts. It will further add to the existing body of researches in the given area.

Hence, given these conditions, this paper attempted to synthesize the sources of outcomes in OBE curriculum development. It particularly answered the following questions: What sources were considered in the formulation of the outcomes? What different contexts account for different sources in the formulation of the outcomes?

2. Method

This section presents the method used for this study. It describes the research design, sources, materials, and procedures employed in the paper.

2.1. Design

The research design used for this study is a systematic review. Green and Higgins (2008) defined systematic review as an attempt to gather all empirical pieces of evidence that address a particular eligibility criterion to answer a research question. It uses explicit, organized methods selected to reduce biases, thus providing reliable data from which conclusions can be drawn and recommendations offered.

2.2. Sources

Using the Google Search engine facilitated by the University of the Philippines, Diliman, multiple sources were considered for this study. These sources were mainly online journals, scholarly publishers, research databases, institutional repositories, and indexing pages.

2.3. Materials

As this review intended to determine the curriculum sources used in the development of program outcomes in OBE curriculum development, the scholarly materials targeted to be included should reflect results drawn from the actual practice. Hence, materials such as completed dissertations, thesis, articles, and reports were most preferred.

2.4. Procedure

A framework of a review is presented by Moher, Liberati, Tetzlaff, and Altman (2009) called Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). This framework was adapted and employed in the data gathering procedure of the present study. It is represented in Figure 1 below and discussed as follows.

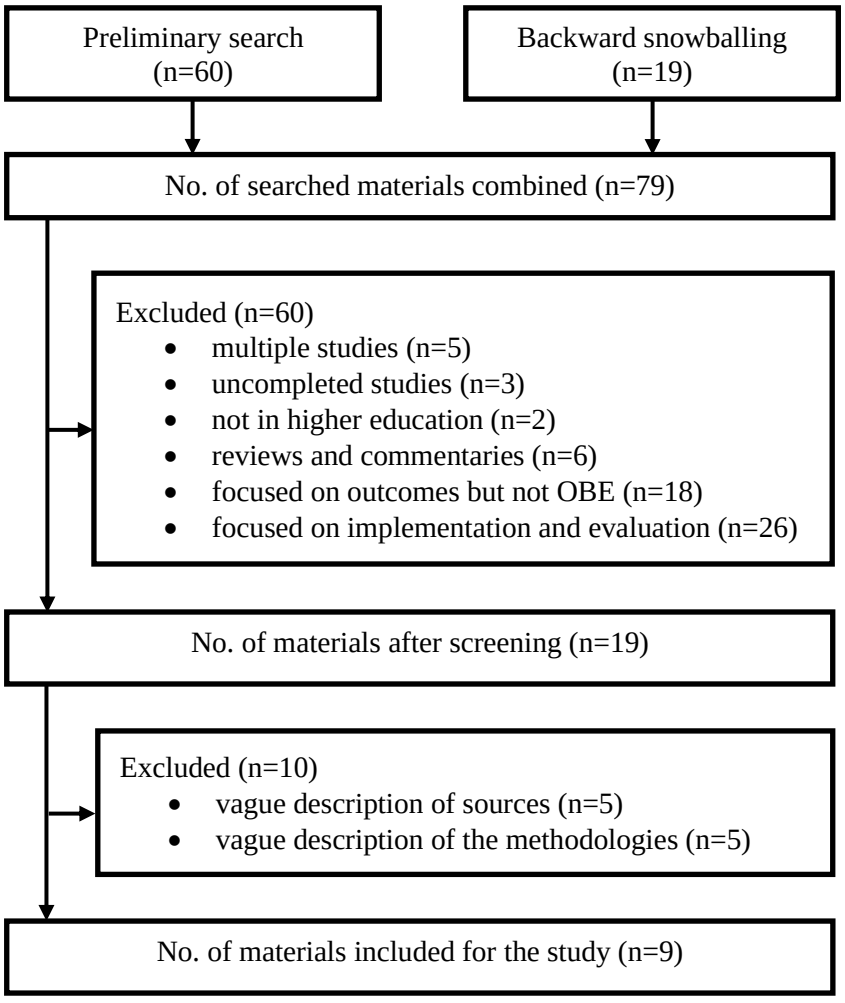

Figure 1: *The Review Framework Followed in this Study*

An online search of materials was first conducted by the researcher. It was done using a

string of keywords such as "outcomes-based education" and "curriculum development." A pool of materials was accessed from the first search (n=60). Using a backward snowballing approach in the references of the initially accessed materials, the second round of search generated another pool of materials (n=19). The total was 79 materials.

The relevance of the gathered materials was reviewed based on their titles and abstracts using the following exclusion criteria with the number of excluded materials: multiple studies (n=5); uncompleted studies (n=3); not in the higher education (n=2); reviews and commentaries (n=6); focused on the concept of outcomes but not OBE (n=18); and focused on curriculum implementation and evaluation (n=26). There were 19 included at this point.

The remaining 19 studies were then evaluated based on two eligibility criteria based on the main interest of this study. The studies with a vague description of sources (n=5) and methodologies (n=5) were eliminated. On the other hand, the included studies must clearly describe the curriculum sources and methodologies. 9 studies were included at the end of the procedure.

The final 9 studies included in this review are summarized according to the author and year of publication, discipline and country, and their relevant descriptions. They were further analyzed and evaluated. The results are presented.

3. Results

A handful of studies clearly describing the curriculum sources and the process of deriving the program outcomes from these curriculum sources were selected for this review. This may indicate the limited global research that particularly articulates the sources of outcomes. Furthermore, most of the included studies employed a qualitative research design specifically a case study. The prevalent data gathering techniques used were focus group discussions, document reviews, and interviews.

It should be noted that the study led by Davis (2017) is a multiple case study. The researcher selected a single case which meets the need of the present review. The selected case draws a completed method that will be useful to this study. Other cases were not selected as they either did not focus on detailing the method or they were curriculum development proposals not completed.

The studies included for this review are summarized according to the author and year of publication, discipline and country, and their relevant descriptions. They are shown in Table 1.

Table 1: *Summary of Included Studies*

Author and Year of Publication	Discipline and Country	Relevant Description of the Study
Aziz, A.A., Megat, M.J., Noor, M., Abang Ali, A.A., & Jaafar, M.S., 2005	Engineering, Malaysia	The authors claim to "start from ground zero" in developing an OBE curriculum for their engineering program. The requirements of three major stakeholders - the accreditation body, potential employers, and professional organizations - were interpreted based upon the relevant documents. Then the outcomes for the program were drawn.
Doria, M.C., 2017	Pharmacy, Philippines	The study mainly considered an analysis of the philosophy of the institution through its statements of vision and mission which lead to the formulation of program outcomes for a pharmacy degree. Furthermore, 21st-century skills were considered in the process of developing the outcomes.
Davis, M.H., Amin, Z., Grande, J.P., O'Neill, A.E., Pawlina, W., Viggiano, T.R., & Zuberi, R., 2007	Medicine, USA	The redesign process was commenced by a review of the mission statement which provided a guide for the development of outcomes expected for the graduates. These formulated outcomes were then mapped to the six exit outcomes proposed by the accreditation council.
Hegde, V. & Rao, N., 2015	Engineering, India	This study indicates the contribution of various stakeholders with society as the focus. The analysis of the institutional philosophy and views of the different stakeholders such as industry, alumni, parents, management, and students resulted in the formulation of program outcomes.
Ho, S.S.S., Kember, D., Lau C.B.S., Au Yeung, M.Y.M., Leung, D.Y.P., & Chow, M.S.S., 2009	Pharmacy, Hong Kong	A committee was assigned to examine the pharmacy curricula from some leading countries. The statement of policy formulated by an international pharmacy association was also consulted. The desired learning outcomes were then formulated.
Kim, H.S. 2012	Nursing, USA	This study regards philosophical statements of the institution as a foundation upon which the outcomes were derived. This study also critically shows how program outcomes should be aligned to the standards of the accreditation council and professional organization.
Klongvessa, N. 2011	Architecture, Thailand	The paper sourced out the outcomes by comparing the outcomes expected by the professional council and professional organization and the common outcomes of conventional education in the field of landscape architecture.
Ramsay, J.D., Cutrer, D., & Raffel, R., 2010	Homeland Security, USA	Using professionals from different fields of homeland security as subject matter experts, this study was designed to explicate a pool of outcomes on which an undergraduate degree in homeland security could be hinged on.
Vedhathiri, T.,	Engineering,	The institute of an engineering program considered the

2016	India	context with respect to the industries in formulating the outcomes. These data included current industrial practices, competencies needed in the job, entry-level jobs for the graduates, key performance areas for entrants, company training, and development programs.

Based on the content careful analysis of the methods and results of the included studies in Table 1, there are six main curriculum sources in formulating the program outcomes that can be identified: regulatory bodies, institutional philosophy, industry demands, subject matter experts, curriculum benchmarks, and learning frameworks. These curriculum sources are highlighted in this section and discussed as follows:

3.1. Regulatory Bodies

There is an emerging trend toward the OBE curriculum as required by regulatory bodies such as professional councils and associations in different fields. These bodies prescribe standards that may serve as starting points for the formulation of outcomes. While higher education institutions are expected to address the standards from these different bodies, harmonization of standards in the process of OBE curriculum development is the key (Kim, 2012; Klongvessa, 2011). This process opens an opportunity for curriculum developers to draw patterns of common standards and assess cases of distinct standards that should be intentionally expressed in the outcomes of the curriculum.

Moreover, standards obliged by regulatory bodies also play essential secondary roles in the development of the outcomes in other contexts (Davis et al., 2007; Ho et al., 2009; Aziz et al., 2005). The outcomes, in this case, have been formulated from other sources, and the standards required by the regulatory bodies served as screens to ensure that minimum requirements are addressed in the curriculum.

The demands of accountability and accreditation in education are the major forces that drive the rapid spread of various forms of educational reform (Brindley, 1994). Most higher education institutions throughout the world have been increasingly required by accountability bodies and accreditation organizations to demonstrate that minimum requirements are addressed in their programs including the essential standards for the curriculum (Lohmann, 1999). Regulatory bodies in this fashion serve as a source of outcomes in the development of a curriculum with the expectation that its graduates will demonstrate a defensible level of performance based on the required outcomes.

3.2. Subject Matter Experts

Some disciplines have no professional councils and associations that require or regulate certain standards to be addressed in their outcomes. Other disciplines have broad enterprise or industry such that comparing a set of outcomes across the same programs will offer no common points. A panel of subject matter experts representing diverse fields may serve as a curriculum source of outcomes in these instances (Ramsay et al., 2010).

The process of obtaining technical information from subject matter experts, who are usually external persons, in any curriculum development is known as "knowledge extraction" (Matton, 2005). These experts are believed to be excellent resource persons possessing valuable experience and technical knowledge in their particular fields of study, thus have a very high expert ability to propose and validate outcomes (Yang & Chou, 2020).

Aside from external subject matter experts, the involvement of teachers in most OBE curriculum development provides an answer to the debates that OBE downplays content over outcomes that are focused on performance (Jansen, 1998). The role of teachers as internal subject matter experts is to feed content through the provision of extensive notes (Rasool, 2005). This role has been realized in numerous OBE curriculum projects that mainly involve the teachers themselves. This provides evidence as regards countering past arguments against OBE.

3.3. Institutional Philosophy

An analysis of the statements of institutional philosophy was considered as the starting point of most processes of developing the outcomes in half of the studies in this current review (see Doria, 2017; Davis et al., 2017; Hegde & Rao, 2015; Kim, 2012). An institution has a philosophy expressed in its mission, vision, and values that are supposed to be reflected down in the curriculum. On the other hand, a curriculum should align with the mission, vision, and values of its institution (Braskamp, 1997).

It appears that the philosophy of the institution is the most telling source that Spady (1994) points to in developing the outcomes. Furthermore, amidst the pressures coming from external forces to comply with required outcomes, Kim (2012) cautions that the institutional philosophy of the school should be primarily considered in OBE curriculum development. This source of outcomes, according to her, makes each program unique and not just a mold of the requirements set by external factors.

3.4. Industry Demands

There appeared to be two approaches in considering industry demands as a source of outcomes in curriculum development. One approach is a direct approach in which industry stakeholders such as employers, parents, and students were invited to discuss their expectations of the graduates (Hegde & Rao, 2015). On the other hand, another approach is an indirect approach that examined relevant documents that indicate industry needs such as entry-level jobs, key performance areas, and company development programs to draw the outcomes of the curriculum (Vedhathiri, 2010).

Considering the industry demands as a source of outcomes is grounded on the assumed connection between the economy and the higher education institutions in the issue of graduate preparedness to enter the world of work (Lizzio & Wilson, 2004; Bartolata, 2016; Bellena, 2016). The relationship between the economy and the pressure for higher education to be responsive is a big matter in most higher education institutions (Griesel, 2002; Cahapay, 2020). The need for human resources in connection to the economy entails higher education to focus on the development of graduate outcomes that meet the skills of the market (Makgoba, 2004).

McKernan (1993) critiqued OBE in this aspect as education should be valued for its own sake and not because it leads to outcomes from external sources. However, he also accepted that such an argument applies to social sciences, humanities, and arts, but not to other disciplines such as medicine, pharmacy, engineering, and education, in which industry plays a major role in defining its outcomes. Whatever is the position of other disciplines, Glatthorn (1993) maintained that OBE can accommodate an array of outcomes important both in the content areas and industry practice.

3.5. Curriculum Benchmarks

Ho et al. (2009) operationalized this source of outcomes in their OBE curriculum development in the pharmacy program of a university in Hong Kong. They examined the pharmacy curriculum programs from various parts of the world such as the United States, United Kingdom, Canada, and Australia to identify the desired learning outcomes. It is assumed in their research that such selected countries with leading educational systems or curriculum programs in the particular field of pharmacy would provide benchmark outcomes for the development of the pharmacy curriculum program.

3.6. Learning Frameworks

Learning frameworks were also used as a secondary curriculum source in the development of the outcomes (e.g. see Ho et. al., 2009; Doria, 2017). These learning frameworks that usually

outline a set of attributes of effective learners were considered as a complementary source to enrich the outcomes formulated from the primary sources. For example, in recognition of the broader range of competencies that would be needed by the graduates in the field, Doria (2017) added a set of outcomes sourced out from the 21st century skills framework.

Overall, the results of this paper reveal different sources of outcomes drawn from practice. These sources include the regulatory bodies, institutional philosophy, industry demands, subject matter experts, curriculum benchmarks, and learning frameworks. While the institutional philosophy has always been considered in the past, this paper also highlights the other sources used in other curriculum development contexts.

4. Conclusion

This paper was driven by the purpose to synthesize the sources of outcomes in OBE curriculum development in the field. It is concluded that multiple sources can be considered in making decisions about the outcomes. These sources include regulatory bodies, institutional philosophy, industry demands, subject matter experts, curriculum benchmarks, and learning frameworks. Looking into the extant concepts in curriculum studies, these sources represent in part the seminal knowledge about the broader sources of objectives in theory.

Furthermore, unique contexts would account for different curriculum sources in developing a curriculum with a set of clearly focused outcomes. Hence, it is recommended that curriculum developers in the field should carefully examine their current experiences, resources, and needs at the internal level and the potent influences, pressures, and demands at the external level, so that appropriate sources of outcomes may be considered in their respectively unique curriculum development initiatives.

This study specifically synthesizing the different sources accounted in different contexts also contributes in general to the limited global scholarly works in higher education curriculum reforms that focus on the development of outcomes. The focus of this paper is delimited on the issue of unreported synthesis of different sources of outcomes in OBE curriculum development in the field. As the OBE curriculum is developed in different contexts, it is cogently recommended for other researchers in the future to review the evolving processes in planning, implementing, and evaluating such a curriculum.

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