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Development of an Outcome-based Learning Guide and Portfolio in the Hospital Dietetics Practicum

Veronica F. Balintona*
Milagros L. Borabo
Celeste C. Tanchoco
Graduate School, Centro Escolar University, Mendiola, Manila
Corresponding Author: vdfbalintona@gmail.com

ABSTRACT

The shift to an Outcome-Based Education (OBE) approach in the Philippines is mandated by legal bases to ensure quality education and prepare Nutrition and Dietetics graduates for international recognition and labor mobility. In an OBE approach, all decisions are based on the learning outcomes that require assessments to ensure that the required learning outcomes are achieved. The study aimed to develop an Outcome-Based Learning Guide and Portfolio for the Hospital Dietetics Practicum course. Data collection followed a three-stage sequential research design. Stage 1 involved exploratory sequential mixed methods to determine the learning outcomes for the course. Stage 2 used focus group discussion to establish the learning activities and modes of assessment. Stage 3 surveyed the extent of the participants' agreement on the content and constructive alignment (CA) of the learning activities and assessment to the learning outcomes. Qualitative data analysis was done using manifest content analysis and quantitative data analysis through statistical analysis. The study found that the learning outcomes determined through the exploratory-sequential stage were highly valid. The participants' reported a high degree of agreement to the content of the Learning Guide and the CA of the learning activities and assessment to the learning outcomes. Their high degree of agreement on the content and CA of the learning activities and assessments to the learning outcomes indicated their confidence in the Learning Guide that may serve as a valuable curriculum material to help students achieve relevant learning outcomes in the Hospital Dietetics Practicum course.

KEYWORDS

constructive alignment; learning guide; exploratory sequential mixed methods; hospital dietetics practicum; outcome-based education

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INTRODUCTION

The State recognizes the vital role of registered Nutritionist-Dietitians (RNDs) in nation building and in human development (Republic Act No. 10862 Nutrition and Dietetics Law of 2016). Relative to this, the Nutrition and Dietetics students, as future Registered Nutritionist and Dieticians (RNDs), must be well equipped with the essential knowledge and skills needed to meet the present and future demands and challenges in providing high quality and affordable nutrition care.

It is the government's role to promote quality education with the purpose of ensuring that its citizens are equipped with relevant knowledge and skills needed in the workplace for them to be locally and globally competitive. In an attempt to sustain international alignment of education and training and emphasize competitiveness, the Philippine government issued Executive Order (EO) No. 83, series of 2012, or the Institutionalization of the Philippine Qualifications Framework (PQF). The PQF aims to achieve the following:

1. Adopt national standards and levels for outcomes of education;
2. Support the development and maintenance of pathways and equivalencies which provide access to qualifications and assist people to move easily and readily between the different education and training sectors and between these sectors and the labor market; and
3. Align the PQF with international qualifications framework to support the national and international mobility of workers through increased recognition of the value and comparability of Philippine qualifications.

Pertinent to EO No. 83, s. 2012, the Commission on Higher Education (CHED) issued CHED Memorandum Order (CMO) No. 46, s. 2012 Policy Standard to Enhance Quality Assurance (QA) in Philippine Higher Education Through an Outcome-Based and Typology-Based QA. This memorandum specifies that 'CHED is committed to develop competency-based standards that adhere to current international standards when applicable and implement an outcome-based approach to QA monitoring and evaluation to ensure quality of education' (CHED, 2014). It prescribes a switch from a teaching- or instruction-centered to learner- or student-centered paradigm, with a lifelong learning framework. The learner- or student-centered paradigm underpins Outcome-Based Education (OBE), which ensures that, among other outcome-focused practices, the course content is informed by the learning outcomes. In OBE, the learning outcomes define what the student must know, understand, and be able to do at the end of a unit of study. Pursuant to CMO No. 46, series of 2012, CHED passed CMO No. 14, series of 2017, or the Policies, Standards and Guidelines (PSG) for the Bachelor of Science in Nutrition and Dietetics (BSND) Program. This memorandum implies that the PSG adopts the learning competency-based standards/outcome-based education. Program outcomes are specified but it pointed out that higher education institutions are given the freedom to innovate the curriculum, specifically on "assessment of how best to achieve learning outcomes in their particular contexts and their respective missions" (CMO No. 14, series 2017 PSG for the BSND Program).

Sana et al. (2015) regarded OBE as a model for educational reform that can respond to the country's persistent problem on the mismatch between competencies required by the industry and what the academe produces. Based on a review of seven OBE articles, Asim et al. (2021) established the encouraging effects of the OBE approach towards improving competencies. Moreover, Scicluna et al. (2012) found that graduates of outcome-based curriculum have a high regard for competence than those of a content-based curriculum, which may be attributed primarily to their exposure to relevant teaching-learning activities and assessment.

The Nutrition and Dietetics program in the United States of America, Qatar, Canada, Australia, UK, and New Zealand are implementing competency-based education (CBE). Competency-based education is an approach that is organized around competencies. The competencies are expressed as learning outcomes that require evidence of

achievement (Kolm et al., 2018). The program outcomes are aligned with the competency standards developed by the credentialing agencies. Competency standards in nutrition and dietetics describe the skills and practice of Nutrition and Dietetics graduates (Ash et al., 2011 as cited in Palermo, 2015). It also specifies the more advanced skills of practitioners in specialist fields (Dietitians Association of Australia, 2015; Brody et al., 2012 as cited in Palermo, 2015). CBE emphasizes observable outcomes that are relevant to the workplace, enable delineation of curriculum, describes readiness for practice, and furnish a framework for assessment (Ash & Phillips, 2000, as cited in Palermo, 2015).

Generally, the supervised practice program, otherwise known as practicum or internship, is an integral part of the Nutrition and Dietetics curriculum. In the supervised practice program, the students apply the principles and skills learned in school to the workplace. More importantly, the students develop those skills and learn other essential skills and competencies for entry-level Nutritionist-Dietitian practice. In countries implementing competency-based education, the supervised practice program trains the students of the skills necessary for the profession and assess their achievement of the 'required competencies for registration as dietitians' (Markaki et al., 2015). However, the offering of supervised practice program in the Nutrition and Dietetics program in some countries may be slightly different.

In Europe, the DIETS Report 2 (DIETS, 2009, as cited in European Federation of the Association of Dietitians [EFAD], 2015) demonstrated the diversity in the length of placement, their frequency, and the various work situations in which dietetic students are placed across Europe. To ensure that the students have quality learning experience wherever the placement may be and for them to be able to demonstrate competence in the practice of dietetics, the work-based placement must be guided by the European Practice Placement Standards for Dietetics. This standard prescribes that there must be an available practice placement handbook of which it specifies the learning outcomes and competencies to be achieved, schedule and duration of the practice placement, assessment procedure using performance indicators, code of conduct, and communication and lines of responsibility (EFAD, 2015).

The Academic Council for Education in Nutrition and Dietetics (ACEND) under the Academy of Nutrition and Dietetics (AND), the accrediting body of Nutrition and Dietetics program in the USA, requires evidence that students have achieved the competencies necessary for the National Registered Dietitian Examination (Andersen et al., 2018). The collection and documentation of evidence may be displayed in portfolio (Gaba, 2015). Portfolios maybe unstructured or structured with forms and templates including a collection of evidence of learning output like records of assessment and self-reflections (Bevitt et al., 2016, as cited in Bramley et al., 2020).

In the Philippines, the Hospital Dietetics Practicum is a 600-hour integral component of the four-year Bachelor of Science in Nutrition and Dietetics curriculum. It is offered during the final year after the student has completed all professional courses of the program. The training establishments for the hospital dietetics practicum are normally guided by the same course behavioral objectives/learning outcomes prescribed by CHED. However, students' experiences vary in some activities and assessment of performance. As stated in Administrative Order No. 2019-0033 or the Guidelines for the Implementation of Nutrition Care Process in Hospitals, the current nutrition services are implemented in different approaches depending on the level of competency and nutrition and dietetic practices of Registered Nutritionist-Dietitians, hospital facilities, and resources. The hospital dietetics practicum in the Philippines customarily have no preceptors who can closely supervise students in their daily activities. Students are typically supervised by an assigned Registered Nutritionist-Dietitian (RND) as practicum supervisor or training dietitian) with a full-time job in the Dietary Department/Service in the hospital. Thus, the practicum supervisor may be challenged with time and heavy workload and cannot fully devote themselves in supervising the practicum students the whole day or during the entire practicum duration. Hence, to maximize training in developing the skills required of an RND in Hospital Dietetics, it is appropriate that the students and practicum supervisors will be provided with a clear learning guide or manual in the implementation of the practicum, preferably an outcome-based learning guide and portfolio that apply the principles of OBE by Spady (1994) and constructive alignment by Biggs and Tang (2007).

Spady (1994) defines OBE as "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" (p. 1). OBE consists of specific distinguishing characteristics. First, everything is built on a clearly defined framework of exit outcomes. To facilitate these key outcomes, the curriculum, instructional strategies, assessments, and performance standards are developed and implemented. These components of the system should be viewed as flexible and alterable means for accomplishing clearly defined learning ends. Second, time is a flexible resource. This characteristic is based on the needs of teachers and students because some students learn some parts of the curriculum within a short time, while others need more time to learn. Third, standards are clearly defined, established, and 'criterion – based' for all students. Each student is privileged to earn a full credit for achieving any performance standards in the system. Fourth, its emphasis is on increasing students' learning and achieving the highest possible levels of performance before leaving the learning institution. Students' mistakes are treated as unavoidable steps along the way in developing, internalizing, and demonstrating high level of performance. Students' achievement is exhibited in what they can do at the end of the learning experience (Spady, 1994).

Constructive alignment (CA) is a model of outcome-based teaching and learning (OBTL), in which outcomes are defined for the purpose of enhancing teaching and assessment. In CA, the constructive learning theory guides learners' construction of knowledge through their exposure to teaching and learning activities, whereas 'alignment' pertains to designing the students' learning activities and the assessment tasks to the intended outcomes. The learning activities are designed in a way that will help the students attain the learning outcomes to a higher standard; and the assessment, a criterion-referenced assessment is done to determine how well the students meet the appropriate criteria or standards of learning (Biggs & Tang, 2011).

At present there is no comprehensive outcome-based learning guide and portfolio in Hospital Dietetics Practicum in the Philippines. Therefore, this study aimed to develop an Outcome-Based Learning Guide and Portfolio in the Hospital Dietetics Practicum.

METHODS

This study employed a three-stage mixed method research design. Stage 1 involved mixing qualitative and quantitative methods to determine the learning outcomes specified in the Outcome-Based Learning Guide and Portfolio of the Hospital Dietetics Practicum. By combining quantitative and qualitative data, mixed methods research 'expands and strengthens a study's conclusion,' and increases knowledge and validity of findings (Schoonenboom and Johnson 2017, p. 110). Specifically, the exploratory-sequential mixed method design was applied, in which the initial phase was conducted through document analysis (qualitative) followed by a second phase executed through survey (quantitative). Phase 1 explored learning outcomes or its equivalents through the analysis of local and international documents. Documents analyzed were chosen purposively. Local documents included the syllabus of the Hospital Dietetics practicum specified in CMO No. 14 s. 2017, three syllabi from three HEIs, and three practicum manuals/guides from Level 3 Hospitals in Metro Manila. These were analyzed through manifest content analysis in which inductive and deductive approaches were applied. Predetermined codes were developed from the Hospital Dietetics Practicum syllabus specified in CMO No. 14, s. 2017. The result of the manifest code analysis in local documents served as the predetermined codes for the analysis of international documents. International documents analyzed included the following:

1. ACEND Accreditation Standards for Nutrition and Dietetics Internship Program (2018) and the Revised 2017 Standards of Practice in Nutrition Care and Standards of Professional Performance for RDN (USA)
2. Integrated Competencies for Dietetic Education and Practice (Canada)
3. EFAD Academic Standards-2018 Revision and Revised Dietetic Competence and the six domains of dietetic competency in Europe, 2016 (Europe)
4. International Competency Standards for Dietitians; National Competency Standards for Dietitians in Australia
5. Professional Standards and Competencies for Dietitians (New Zealand).

Like in the local documents, analysis was done through manifest content analysis applying deductive and inductive approaches. The frequency of each code was determined and further analyzed. The codes that were considered significant for Hospital Dietetics Practicum in the Philippines were formulated into learning outcome statements and were subjected to validation by six Nutrition-Dietetics experts. The results were used in the survey questionnaire for Phase 2, the confirmatory phase. The participants were Hospital Dietetics Practicum stakeholders, which included 11 clinical dietitians, nine administrative dietitians, nine Hospital Dietetics Practicum coordinators, and 11 recent learners who were chosen purposively. The survey instrument asked the participants to indicate the degree of their agreement on the inclusion of the learning outcomes based on a five-point Likert Scale from 1 (strongly disagree) to 5 (strongly agree). Data collection was done face-to-face. Mean and SD were used as statistical results.

In Stage 2, the researcher employed focus group discussion (FGD), a qualitative method of research, in establishing the learning activities and modes of assessment. The participants consisted of four groups of stakeholders: clinical dietitians, administrative dietitians, Hospital Dietetic Practicum coordinators, and recent learners who were chosen purposively to gather inputs based on their knowledge and experiences in the Hospital Dietetics Practicum. Each group was divided into two, thus, a total of eight FGD groups. Each FGD group was composed of four to six members with a total of 40. Sampling involved maximum variation with homogenous groupings. The interview schedule and the blueprint of the learning activities and modes of assessment per learning outcome were used as instruments in collecting data. These were face validated by two subject matter experts: a Hospital Dietetics Practicum expert who is an academician and researcher and an OBE expert. Content validation was done through a pilot test participated by five experts in Hospital Dietetics Practicum training.

The proposal of the study was reviewed and approved by the Institutional Ethics Review Committee of the university where the study was set. The FGDs were held in the campus of the same university. The researcher, a former hospital dietitian and former Hospital Dietetics Practicum coordinator, served as moderator and facilitated the discussion with the aid of the research instruments, laptop computer, and projector. The participants were asked to give comments and suggestions on the proposed learning activities that were presented to them. Also, they were asked to provide comments and suggestions on the modes of assessment to ascertain that these are suitable and adequate in measuring the students' attainment of the learning outcomes. The proceedings of the FGD were recorded. Data were transcribed and analyzed through manifest content analysis.

Finally, Stage 3 evaluated the content of the Outcome-Based Learning Guide and Portfolio in Hospital Dietetics Practicum and the constructive alignment of the learning activities and assessment of learning to the learning outcomes. This was conducted through a survey. The survey evaluation was done by 15 experts, i.e., 10 hospital dietitians and five academicians, and five recent learners who were selected purposively. First, they were requested to indicate the extent of their agreement to the details of each component of the different learning outcomes to include learning essentials to remember, learning activities to accomplish, and assessment of learning activities in both Clinical Nutrition and Food Service Management and Administration. The evaluation was done using a five-point Likert Scale from 1 (strongly disagree) to 5 (strongly agree).

The questionnaire together with the draft of the Outcome-Based Learning Guide and Portfolio were validated by an OBE expert, a dean of a College of Education in a prestigious higher education institution, and two hospital dietetics practitioners.

The research instruments were sent to the respondents through courier service. They evaluated the content of each learning outcome. The evaluation of the constructive alignment of learning activities and assessment of learning activities to the learning outcomes was done through online survey by the same respondents. The data were analyzed using SPSS. Mean and Standard Deviation were used to analyze the data.

RESULTS

Emergent Learning Outcomes

The learning outcomes explored through document analysis in Stage 1 yielded 17 manifest codes for Clinical Nutrition and 16 for Food Service Management and Administration. The nine manifest codes for Clinical Nutrition and 13 for Food Service Management and Administration were considered essential for the training of students in Hospital Dietetics Practicum and were developed into learning outcome statements. These were validated by Nutrition and Dietetics experts, resulting in eight learning outcomes for Clinical Nutrition and 13 learning outcomes for Food Service Management and Administration. These learning outcome statements were utilized in the survey instrument and considered for confirmation through survey. The participants strongly agreed ($\bar{x}$ = 4.97; SD = 0.10) with the inclusion of all eight learning outcomes for Clinical Nutrition (Table 1) and all 13 learning outcomes ($\bar{x}$ = 4.96; SD = 0.13) for the Food Service Management and Administration (Table 2) in the Outcome-Based Learning Guide and Portfolio in Hospital Dietetics Practicum.

Outcome-Based Teaching and Learning Activities Proposed

The learning outcomes, which emerged in Stage 1, served as basis in designing and developing the blueprint or prototype of outcome-based teaching and learning activities and modes of assessment using the principles of constructive alignment. The eight FGD group generally agreed with the learning activities presented per learning outcome. Some recommendations were provided to the presented blueprint of the learning activities to achieve each of the learning outcomes. The highlights of their recommendations were used as suggestions to be considered in improving the proposed activities:

1. Observation in the administration of enteral and parenteral nutrition, (if applicable) for the learning outcome 'Implement nutrition intervention or care plan based on individual's needs' for Clinical Nutrition Phase'
2. Conduct a study on food waste/plate waste for the learning outcome 'Propose good sanitation and safety practices appropriate for the training institution to promote safety and sustainability (waste reduction and environmental protection)' for Food Service Management and Administration.

The salient points of the suggestions for modification including the following:

1. Some activities were modified from 'tutorial activities' to 'supervised activities'
2. From observation in the preparation of enteral nutrition to both observation and actual preparation of enteral nutrition for the learning outcome 'Implement nutrition intervention or care plan based on individual's needs'
3. Some activities 'may be done individually or as a group'
4. Indicate 'if applicable to the institution' in the activities 'observation in the planning and preparation of parenteral nutrition,' 'actual conduct of nutrition counseling,' and 'conduct of food safety audit'
5. Separate activities in the development from implementation of nutrition education plan for learning outcome 'Conduct nutrition education to promote wellness and lifestyle management'
6. Activities done through 'observation' to 'observation, assisting, and actual performance' for the learning outcome 'Use of appropriate measures of storeroom control'

7. 'Review of Management tools' to 'review of and actual preparation of management tools' for learning outcome 'Apply management skills in the hospital dietary services'

Proposed Modes of Assessment for the Attainment of Learning Outcomes of the Hospital Dietetics Practicum

For the modes of assessment proposed, two suggestions in assessing the attainment of learning outcomes for both Clinical Nutrition and Foodservice Management and Administration were made. The suggestions for the further improvement of the proposed modes of assessment are as follows:

1. Use rubrics instead of key to correction in assessing students' performance in order to ensure that learning outcomes are attained.
2. Use learning log rather than reflective log in presenting the process of and learning construction or development.

Outcome-Based Learning Guide and Portfolio for Hospital Dietetics Practicum

The determined learning outcomes, the established learning activities, and the ascertained modes of assessment were the bases for finalizing the contents of the Outcome-Based Learning Guide and Portfolio in the Hospital Dietetics Practicum.

The participants evaluated the contents of the Outcome-Based Learning Guide and Portfolio in the Hospital Dietetics Practicum by indicating the extent of their agreement to the details of each component of the learning outcomes. In the Clinical Nutrition phase, all the components of the learning outcomes were agreed to at a very large extent ($\bar{x}$ = 4.77; SD = 0.25), including the learning essentials ($\bar{x}$ = 4.80; SD = 0.33), the learning activities ($\bar{x}$ = 4.70; SD = 0.37), and assessment of learning activities ($\bar{x}$ = 4.81; SD = 0.35).

Relatively, the extent of agreement to the details of each component of the learning outcomes of the Food Service Management and Administration were agreed to at a very large extent ($\bar{x}$ = 4.83; SD = 0.29), including the learning essentials ($\bar{x}$ = 4.91; SD = 0.26), learning activities ($\bar{x}$ = 4.76; SD = 0.36), and assessment of learning ($\bar{x}$ = 4.81; SD = 0.35).

The SD of the respondents' evaluation on the extent of agreement to the details of each component of the learning outcomes reveals that all the ratings of the respondents are homogenous.

The constructive alignment of the learning activities and modes of assessments to the learning outcomes were validated by the participants by indicating their degree of agreement with each. The mean rating of the constructive alignment of learning activities to the learning outcomes in Clinical Nutrition indicate that they agreed to a very large extent ($\bar{x}$ = 4.81; SD = 0.34). Similarly, for the Food Service Management and Administration, the results indicate that they agree to a very large extent to the constructive alignment of the contents ($\bar{x}$ = 4.79; SD = 0.37).

The constructive alignment of assessment of learning activities to the learning outcomes was also agreed with to a very large extent for both Clinical Nutrition ($\bar{x}$ = 4.90; SD = 0.19) and Food Service Management and Administration ($\bar{x}$ = 4.79; SD = 0.38).

The SD values for the constructive alignment of both the learning activities and assessment of learning activities to the learning outcomes in Clinical Nutrition and Food Service Management and Administration imply that the evaluation was consistent.

DISCUSSION

This study aimed to develop an Outcome-based Learning Guide and Portfolio in the Hospital Dietetics Practicum. CMO No. 104, s. of 2017 titled 'Guidelines for Student Internship Program in the Philippines (SIPP)' stipulates that all Programs with Practicum course should aim to provide tertiary students the chance to learn practical knowledge, skills, and good attitudes and values in prestigious institutions/industries; improve the students' work competencies, and discipline when dealing to people in the work place; promote students' competitiveness; allow possibilities to learn from and network with experienced professionals; effectively address new challenges and difficult tasks; and ascertain future career directions and be qualified for employability. Therefore, the students' practicum training must be well planned and the students and hospital dietetics supervisors are well guided in its implementation. To ensure that the training is in its best 'learning outcomes must be relevant to the learner's goals and future career' (Jaiswal, 2019, p. 21). The learning guide and portfolio, being outcome-based, identifies the learning outcomes as its central component. This is consistent with Spady (1994) where it was clarified that, in an OBE system, 'developing a clear set of learning outcomes around which all the systems, components, can be focused' and 'establishing the conditions and opportunities within the system that enable and encourage all students to achieve those essential outcomes' are necessary.

The learning outcomes which were determined through exploratory-sequential data collection obtained very high mean of agreement for their adoption. The result signified that the determined learning outcomes are relevant for the training of students. Having both local and international documents relative to Hospital Dietetics Practicum as the basis in determining the learning outcomes ensure that the learning outcomes specified are able to satisfy established international standards. As such, the learning outcomes can serve as powerful guide in training the students to develop the necessary skills required in Hospital Dietetics for them to be locally and internationally competitive.

The learning activities to accomplish were rated very positively, meaning they were found very essential and sufficient to achieve the learning outcomes. The learning activities in the Hospital Dietetics Practicum were carefully planned and structured making sure that the students are empowered by actively engaging themselves in these activities and allowing them to improve their confidence in developing the skills required of an entry level Nutritionist-Dietitian. The assessments were also rated very positively, denoting their appropriateness in measuring the attainment of learning outcomes. These assessments include formative and summative tasks. The formative assessment or assessment for learning aim to test students' performance during their practicum training. They provide feedback that determine what and how well the students are learning and point out information needed for the improvement of skills and/or develop correctly through the use of rubrics. The summative assessment 'summarizes learning that has taken place in order to record, mark or certify achievements' (EPPI, 2002, as cited in Chapter 4 Student assessment: Putting the learner at the Centre, 2013, p. 140).

Spady (1994) emphasized that in OBE system the students' performance is measured based on standards or criteria, i.e., criterion based. Rubrics is the assessment tool to evaluate the student's performance in each of the specified learning activity to determine the attainment of the learning outcomes. Criteria are used to describe the quality of performance. The constructed rubrics are useful, since the students can use them as guide in accomplishing their activities at the same time monitor their progress for self-assessment. Thus, the students are empowered to achieve the learning outcomes. Appendix A provides a sample of the validated learning outcomes with learning activities to accomplish and the assessment of learning using rubrics.

Learning log is part of the assessment of learning activities per learning outcome. It allows the student to record the learning process. It includes the student's activities, experiences to enhance knowledge and develop skills, problems encountered in trying to achieve the learning outcomes, and reflections in developing skills and its significance in the future profession. The learning log is an assessment task and evaluated by means of rubrics. It provides the student the opportunity to reflect immediately on their learnings and experiences in the attainment of the specific learning outcomes and at the same time construct new knowledge. The students' experiences and the challenges met in the attainment of the learning outcomes stated in the learning log, and the construction of new knowledge will make them acquire deeper learning and better ability to internalize those learnings. Moreover, it will improve retention and help them become effective Nutrition-Dietetics professionals in the future.

The significant degree of agreement of the participants on the constructive alignment of the learning activities and assessment of learning to the learning outcomes indicates that the developed Outcome-Based Learning Guide and Portfolio in Hospital Dietetics Practicum will serve as a facilitative manual in the attainment of the learning outcomes. According to Biggs and Tang (2007), constructively aligned teaching ensures a more effective approach due to the maximum consistency in the entire system. This output will also serve as a comprehensive instruction manual and a documentation of the attainment of the learning outcomes, i.e., a portfolio. The portfolio referred to is a record of evidence of the student's learning activities that were accomplished and assessed after a given period of time to determine the attainment of learning outcomes. Portfolios benefit the students for them to record their progress, recognize their strengths and weaknesses and develop personal responsibility and accountability (Volders et al., 2010). Also, portfolios serve as a discussion point for both the student and practicum supervisor and facilitate 'bridging the knowledge and skill gap between theory and practice' (Harnis et al., 2001, as cited in Volders et al., 2010).

In this study, the learning outcomes were determined through exploratory-sequential data collection and analyses. Involving diverse stakeholders that were grouped homogenously in the focus group discussion 'sought representation of different perspectives on knowledge and experiences' (Hammarberg et al., 2016, p. 500) yielded relevant learning activities and modes of assessment that were constructively aligned with the learning outcomes. The stakeholders' high degree of agreement on the content and constructive alignment indicated their confidence in the Outcome-Based Learning Guide and Portfolio developed in this study. The output will serve as a valuable curriculum material to help students achieve relevant learning outcomes in the Hospital Dietetics Practicum. The researcher recommends that a field test must be conducted on the use of the Outcome-Based Learning Guide and Portfolio in the Hospital Dietetics Practicum in collaboration with training establishments and other higher education institutions in the different regions of the country to determine its effectiveness.

REFERENCES

Asim, H., Vaz, A., Ahmed, A., & Sadiq, S. (2021). A Review on Outcome Based Education and Factors That Impact Student Learning Outcomes in Tertiary Education System. *International Education Studies, 14*(2). https://doi.org.10.5539/ies.v14n2p1

Biggs, J. & Tang, C. (2007). *Teaching for Quality Learning at University (3rd edition)*. Open University Press, McGraw-Hill Education. Biggs, J. & Tang, C. (2011). Train-the-Trainers: Implementing Outcome-based Teaching and Learning in Malaysian Higher Education. *Malaysian Journal of Learning Instruction, 8*, 1-19.

Bramley A.L., Thomas C.J., Mc Kenna L., Itsiopoulos C. (2021). E-portfolios and Entrustable professional activities to support competency-based education in dietetics. *Nurs Health Sci., 23*, 148–56. https://doi.org/10.1111/nhs.12774.

Commission on Higher Education (CHED). (2014). *Handbook on Typology, Outcome-based Education, and Institutional Sustainability Assessment*. Commission on Higher Education.

Dietitians Association of Australia (DAA). (2015). *National Competency Standards for Dietitians in Australia*.

European Federation of the Associations of Dietitians (EFAD). (2015). *European Practice Placement Standards for Dietetics*. European Federation of the Associations of Dietitians.

European Federation of the Associations of Dietitians. (2016). *Revised Dietetic Competence and the six domains of dietetic competency in Europe*. European Federation of the Associations of Dietitians.

European Federation of the Associations of Dietitians. (2018). *EFAD Academic Standards-2018 revision*. European Federation of the Associations of Dietitians.

Gaba, A. (2015). Development and evaluation of an e-portfolio for use in a dietetic internship program. *Procedia-Social and Behavioral Sciences, 174*, 1151-1157. https://doi:10.1016/j.sbspro.2015.01.731.

Hammarberg, K. Kirkman, M. & de Lacey, S. (2016). Qualitative research methods: When to use them and how to judge them. *Human Reproduction, 31*(3), 498-501. http://www.DOI10.1093/humrep/dev334

Jaiswal, P. (2019). Using constructive alignment to foster teaching learning process. *English Language Teaching, 12(6)*, 10-23. https://doi.org/10.5539/elt.v12n6p10

Kolm, A., Vanherle, K., Hold, E., Werkman, A., Barkmeijer, A., Walters, M., Kohlenberg- Muller, K., Gast, K., Valentine, L., Hahn, S., Baete, KE., Adam, M., & LeBruyn, B. (2018). *Improving Education and Competencies in Dietetics (IMPECD) Work Package 06, Syllabus for Teachers*. IMPECD Consortium. https//impecd.fhstp.ac.at> Syllabus-06-v4-pdf

Lawson, R. J. (2011). Constructively aligned teaching methods and students' approaches to learning and motivational orientations. *Global Journal of Human Social Science, 11(8)*, 59-68. http://ro.uow.edu.au/asdpapers/509

Markaki, A., Spyridaki, A., Chatzi, V., Joossens, S. & de Looy, A. (2015). Exploring the quality of European dietetic practice placements. *Nutrition & Food Science, 45(3)*, 377-387. https://doi.org/10.1108/NFS-10-2014-0094

Palermo, C. E. (2015). Growing professional competence in nutrition and dietetics. *Nutrition and Dietetics, 72(2)*, 96-100. https://doi.org/10.1111/1747-0080.12202

Palermo, C., Beck, E.J., Chung, A., Ash S., Capra, S., Truby, H., Jolly, B. (2014). Work-based assessment: qualitative perspectives of novice nutrition and dietetics educators. *J Hum Nutr Diet., 27*(5), 513-21. https//doi:10.1111/jhn.12174.

Palermo, C., Dart, J., Begley, A., Beck, E. J., Bacon, R., Tweedie, J., Mitchell, L., Maher, J., Gallegos, D., Kennedy, M., Kellett, J., Margerison, C., Crawford, R., & Stuart-Smith, W. (2018). Dietetics students' construction of competence through assessment and placement experiences. *Nutrition & Dietetics, 75*(3), 307–315. https://doi.org/10.1111/1747-0080.12359

Palermo, C., Gibson, S. J., Dart, J., Whelan, K., & Hay, M. (2017). Programmatic Assessment of Competence in Dietetics: A New Frontier. *Journal of the Academy of Nutrition and Dietetics, 117*(2), 175–179. https://doi.org/https://doi.org/10.1016/j.jand.2016.03.022

Sana, E., Roxas, A., & Reyes, A. (2015). Introduction of outcome-based education in the Philippine Health Professions Education Setting. *Philippine Journal of Health Research and Development, 19(1)*, 60-74.

Schoonenboom, J., & Johnson, R. B. (2017). How to Construct a Mixed Methods Research Design. *KZfSS Kölner Zeitschrift Für Soziologie Und Sozialpsychologie,69*(2),107–131.https:// doi.org/10.1007/s11577-017-0454-1

Scicluna, H.A., Grimm, M.C., O'Sullivan, A.J., Harris, P., Pilotto, L.S., Jones, P.D., & McNeil, P. (2012). Clinical capabilities of graduates of an outcome-based integrated medical program. *BMC Med Educ 12*(23), 1-8. https://doi.org/10.1186/1472-6920-12-23.

Spady, W. (1994). Outcome-Based Education: Critical Issues and Answers. American Association of School Administrators.

Volders, E., Tweedie, J., & Anderson. (2010). Advancements in nutrition and dietetics teaching and learning: Evaluation of the student portfolio. *Nutrition and Dietetics, 67*, 112-116. https://doi:10.1111/j.1747-0080.2010.01429.x

TABLE 1

Evaluation of the Learning Outcomes for Inclusion in the Outcome-Based Learning Guide and Portfolio in the Hospital Dietetics Practicum, Clinical Nutrition Phase

Learning Outcomes	Mean	SD	Verbal Interpretation
1.1 Conduct nutrition assessment to determine nutrition-related problems.	5.00	.000	Strongly Agree
1.2 Diagnose and prioritize nutrition problems based on assessment data.	4.98	.156	Strongly Agree
1.3. Plan and implement nutrition intervention or care plan based on individual's needs.	4.95	.218	Strongly Agree
1.4 Monitor implementation of nutrition intervention/ care plan based on established indicators.	4.98	.156	Strongly Agree
1.5 Perform effective nutrition counseling to manage disease and for lifestyle change.	4.98	.156	Strongly Agree
1.6 Conduct nutrition education to promote wellness and lifestyle management.	5.00	.000	Strongly Agree
1.7 Develop nutrition education materials appropriate for the patients.	4.98	.156	Strongly Agree
1.8 Conduct and present a case study showing an evidence-based nutrition and dietetics intervention.	4.95	.218	Strongly Agree
Overall	4.97	0.10	Strongly Agree

TABLE 2
Evaluation of the Learning Outcomes for Inclusion in the Outcome-Based Learning Guide and Portfolio in the Hospital Dietetics Practicum, Food Service Management and Administration Phase

Learning Outcomes	Mean	SD	Verbal Interpretation
2.1 Plan, evaluate and modify menus considering the principles of menu planning.	5.00	.000	Strongly Agree
2.2 Contribute to purchasing, receiving, and storage of goods to ensure quality and availability.	4.95	.223	Strongly Agree
2.3 Use appropriate measures of storeroom cost control.	4.95	.223	Strongly Agree
2.4 Standardize quantity recipes for menu development.	4.95	.223	Strongly Agree
2.5 Demonstrate skills in food presentation to improve aesthetic appeal of food to help enhance patient's/client's food acceptability.	4.95	.223	Strongly Agree
2.6 Supervise tray line and delivery of appropriate meals to ensure accuracy of meals provided to patients based on nutrition plan.	5.00	.000	Strongly Agree
2.7 Apply management functions/skills in the hospital dietary services.	4.92	.354	Strongly Agree
2.8 Plan a recommended layout for Dietary Department with the required work areas and equipment necessary for the production of quality foods.	4.95	.223	Strongly Agree
2.9 Handle equipment and utensils with care and proper maintenance.	4.95	.223	Strongly Agree
2.10 Evaluate food safety practices based on food safety principles (i.e., HACCP principles).	5.00	.000	Strongly Agree
2.11 Propose good sanitation and safety practices appropriate to the training institution to promote safety and sustainability (waste reduction and environmental protection).	5.00	.000	Strongly Agree
2.12 Determine food cost per meal and per capita of one day's menu.to ascertain expenses are within the budget appropriation.	4.95	.223	Strongly Agree
2.13 Demonstrate financial literacy for effective foodservice management.	4.95	.223	Strongly Agree
Overall	4.96	0.13	Strongly Agree

Appendix A

Sample Learning Outcome with Learning Activities and Assessment

Learning Outcome: Propose good sanitation and safety practices and procedures appropriate for the training institution to promote safety and sustainability (waste reduction and environmental protection).

Learning Activity 1. Evaluate the facility cleaning, sanitation and safety program/practices of the training establishment.

Directions: Evaluate the facility cleaning, sanitation and safety program/practices of the training establishment considering the safety of staff, patients/clients, and guests. Propose corrective actions on problems in sanitation and safety. Include ways of promoting sustainability (environmental protection with waste reduction).

Observe the cleaning, sanitation, safety program and waste reduction practices of the training establishment based on the criteria indicated below. Put a tick under YES if these are observed practices. If not, put a tick under "NO." Write under "remarks" your observations as to why these are not being practiced. Based on the results of the evaluation, prepare corrective actions specifically on sanitation, safety, and waste management facilities and procedures for the training establishment.

Sample observation checklist

Facility Cleaning, Sanitation and Safety Practices	Yes	No	Remarks
1. Regular Cleaning and Sanitizing			
1.1 Employees who are cleaning and sanitizing the facility are trained on the correct procedures to follow.			
1.2 Employees who are cleaning and sanitizing the facility are closely monitored by supervisor or manager.			
1.3 Sanitizing When heat sanitizing is applied, the correct hot temperature of water is applied or when chemical sanitizer is used the concentration of chemical sanitizing and correct temperature of water is used.			
1.4 All table wares are sanitized.			
1.5 All contact surfaces are sanitized.			
2. Facilities Cleaning, Sanitation, and Maintenance Program			
2.1 Organization and scheduling of duties			
2.1.1 Regular daily cleaning of equipment has been a part of daily routine.			

Proposed corrective actions or recommendations in improving the sanitation and safety practices and procedures of the institution:

Learning Activity 2. Study on Food Waste/Plate Waste

Directions: Conduct a study on food waste at the consumption stage and post consumption stage (plate waste/leftovers). Propose corrective actions to promote sustainability (waste reduction). The study could be food waste on a certain meal in an assigned ward. This could be less formal action research, survey, or case study. It may be evaluative, investigative or analytical to determine the causes of consumer food waste (plate-waste/left-overs) or dietary/nutrition/health effects to patients.

The less formal research involves:

1. Identifying the study problem
2. Collecting data
3. Interpreting data
4. Proposed corrective actions to address the problem/s and promote sustainability (waste reduction)

Learning Activity 3: Utilization of Leftover Foods

Directions: Conduct an inventory of leftover foods (due to overproduction) in a day or at a certain meal, as assigned by the RND. Present suggestions for effective utilization of the leftover foods to promote sustainability using the template below. Demonstrate the preparation of at least one authentic dish using leftovers. Present the dish using either the patient's plate or any appropriate dinnerware for evaluation. Document the authentic dish using leftovers. Include the recipe and photo of plate presentation.

Assessment of Activity 1.

Evaluation of the Facility Cleaning, Sanitation and Safety Practices of the Nutrition and Dietetic Service/Dietary Department Rubric

Directions: Evaluate the student's performance on each of the evaluative criteria of the evaluation of the facility cleaning, sanitation and safety practices of the training establishment based on the levels of proficiency, scores and quality descriptors indicated below.

Levels of Proficiency	Score	Quality Descriptors
Expert	5	• Exceeds far beyond expectations for entry level practice
		• Demonstrates exceptional performance • With no error
Proficient	4	• Exceeds expectations for entry level practice • Demonstrates above average performance • With no error
Competent	3	• Meets expectations for entry level practice • Demonstrates acceptable performance • With few errors
Beginner	2	• Fairly meets expectations for entry level practice • Demonstrates fair performance • With some errors
Novice	1	• Does not meet expectations for entry level practice • Demonstrates poor performance • With many errors

Evaluative Criteria	Score	Average
1. Evaluation of the following **1.1.** Regular cleaning and sanitizing		
1.2. Facilities cleaning and sanitation and maintenance program		
1.3. Employee safety		
1.4. General safety program		
1.5. Waste reduction		
2. Proposed corrective actions/suggestions		
Total		
Average		

Assessment of Activity 2.

Study on Food Waste Rubric/Plate Waste

Directions: Evaluate the student's performance on each of the evaluative criteria of the study on food waste (plate waste and leftovers) based on the levels of proficiency, scores and quality descriptors below.

Levels of Proficiency	Score	Quality Descriptors
Expert	5	• Exceeds far beyond expectations for entry level practice • Demonstrates exceptional performance • With no error
Proficient	4	• Exceeds expectations for entry level practice • Demonstrates above average performance • With no error
Competent	3	• Meets expectations for entry level practice • Demonstrates acceptable performance • With few errors
Beginner	2	• Fairly meets expectations for entry level practice • Demonstrates fair performance • With some errors
Novice	1	• Does not meet expectations for entry level practice • Demonstrates poor performance • With many errors

Evaluative Criteria	Score
1. Identification of the study problem	
2. Collection of data	
3. Interpretation of data	
4. Proposed corrective actions	
Total	
Average	

Assessment of Activity 3.

Utilization of Leftover Foods Rubrics

Directions: Evaluate the student's performance on each of the evaluative criteria of the study on the utilization of leftover foods based on the levels of proficiency, score and quality descriptors below:

Levels of Proficiency	Score	Quality Descriptors
Expert	5	• Exceeds far beyond expectations for entry level practice • Demonstrates exceptional performance • With no error
Proficient	4	• Exceeds expectations for entry level practice • Demonstrates above average performance • With no error
Competent	3	• Meets expectations for entry level practice • Demonstrates acceptable performance • With few errors
Beginner	2	• Fairly meets expectations for entry level practice • Demonstrates fair performance • With some errors
Novice	1	• Does not meet expectations for entry level practice • Demonstrates poor performance • With many errors

Evaluative Criteria	Score
1. Efficiently made an account of the leftover foods.	
2. Suggestions on the utilization of leftovers were: 2.1. practical 2.2. acceptable and delightful	
3. The developed recipe using the leftover foods: 3.1. was considered authentic 3.2. listed ingredients in the order of use 3.3. specified accurate weights and measures of ingredients; and yield 3.4. complied with clear procedures	
4. Demonstration on the preparation of the dish using leftovers foods: 4.1. the written recipe and the procedures were followed 4.2. the dish was presented aesthetically appealing 4.3. the dish was acceptable in terms of taste, aroma, texture and flavor	
5. Documented the recipe (written ingredients with accurate measures and procedures) and plate presentation.	
Total	
Average	