Development of an evaluation system of research performance by applying the outcome mapping approach: a case study of faculty of liberal arts and science, Nakhon Phanom University, Thailand

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Abstract

The purpose of this research was to develop an evaluation system of research performance by applying outcome mapping approach. It was thus the research and development involving the case study of Faculty of Liberal Arts and Science, Nakhon Phanom University. In this regard, the sample group consisted of executives, researchers, faculty members and staffs with a total number of 26. Further, 7 qualified persons were also invited to verify the evaluation system. Tools and methodologies applied in this research included workshop, focus group, test, questionnaire, formal and informal interviews, observation, and document examination. In addition, content analysis, average, standard deviation, signed test, Wilcoxon signed ranks test, median, and inter-quartile range were used in data analysis. Initial research results revealed that the evaluation system had 3 main elements, namely, 1) intentional design, 2) outcome and performance monitoring, and 3) evaluation planning as well as 13 work procedures. Three boundary partners have achieved outcome challenges as follows: 1) Dean or Deputy Dean for Planning and Development Affairs has achieved 3 outcome challenges of 12 indicators, 2) research staffs have achieved 5 outcome challenges of 9 indicators, and 3) head of research projects have achieved 7 outcome challenges of 11 indicators. Better research behaviors and evaluation capacity in the sample groups were found comparable to those before the research with the statistical significance of .05. One could then say that the evaluation system boasts with utility, feasibility, propriety, and accuracy.

Keywords: Outcome Mapping, Research Performance, Evaluation System

Introduction

The International Development Research Centre's Evaluation Unit (IDRC) has developed tools or methodologies used in monitoring the formulation and evaluation of plan's work or project focusing on the evaluation of behaviors, relationships, and actions of individuals, groups or organizations so-called outcome mapping (Earl, Carden, & Smutylo, 2001). This is on the basis of the idea that people involved in developing plan such as supervisor and assessor of change should engage in the development. Meanwhile, the outsider should only facilitates the process of change by contributing the access to the knowledge, new opportunities and resources in one given period (Earl, Carden, & Smutylo, 2004). The concept of four outcome mappings principles are: 1) flexible, 2) complementary, 3) participatory, and 4) evaluation thinking (Earl, n.d.), which consists of three steps - intentional design, outcome, and performance monitoring, as well as evaluation planning (Earl, Carden, & Smutylo, 2004).

One guideline for evaluating the results of outcome mapping concepts is participatory evaluation using a flexible approach based on both quantitative and qualitative data from multiple sources. Ways of assessment thus should be practical and able to evaluate personnel. Also, the evaluation of participants should not create the fear later, and the focus should be paid to the evaluation of changes in behavior and relationships of individuals, groups or organizations. It is believed that the change of individuals' behaviors will render to the development of plan or project. The evaluation based on the outcome mapping approach can be a way to make the evaluation, while the plan or project being in progress or so-called "formative evaluation" (Earl, Carden, & Smutylo, 2001). Patton (2001 cite in Earl, Carden, & Smutylo, 2001) also mentions that not only outcome mapping is designed to help understand the result of the organization, but also solve obstacles between assessment of learning. Therefore, the concept of outcome mapping not only helps in the planning and the benchmark of partners' evaluation but allowing all to participate in the evaluation. This will help organizations to define their roles more clearly, and to be the guidance for increasing their power in the future.

It is also accepted that the success of plan or project may not solely be attributable to outcome mapping. Rather, other extraneous variables may also involve. As a result, outcome mapping is the concept of results of planning and evaluation in accordance with the real-life work. Further, the evaluation based on the outcome mapping approach, which boasts with the flexibility of and stakeholders' participation, can render to responsive evaluation and real-world evaluation. By this way, learning can be created through the assessment, which will then result in the creation of evaluation ability and culture in the faculty.

The Faculty of Liberal Arts and Science, Nakhon Phanom University, Thailand, is a newly-established unit. It thus needs the development of almost every aspect, including the development of a research system of the faculty. The outcome mapping is a methodology used in planning, following-up and evaluating the project's proceeding that is in the character of dynamic complexity, and it is most suitable to be used within the project's initial period. This is to apply outcome mapping and to develop it into an evaluation system of research performance. This will then be beneficial to the Faculty of Liberal Arts and Science, and the University in every aspect.

Objectives

To develop an evaluation system of research performance by applying outcome mapping approach as follows:

1) To study the factors and develop an evaluation system of research performance by applying outcome mapping approach.
2) To try out the evaluation system of research performance by applying outcome mapping approach.
3) To compare research behaviors in pre- and post- trial of evaluation system of research performance of the faculty members by applying outcome mapping approach.
4) To compare evaluation capacity in pre- and post- trial of evaluation system of research performance of the faculty members by applying outcome mapping approach.
5) To evaluate and prove the evaluation system of research performance by applying outcome mapping approach.

Conceptual Frameworks

The conceptual frameworks are shown in Figure 1

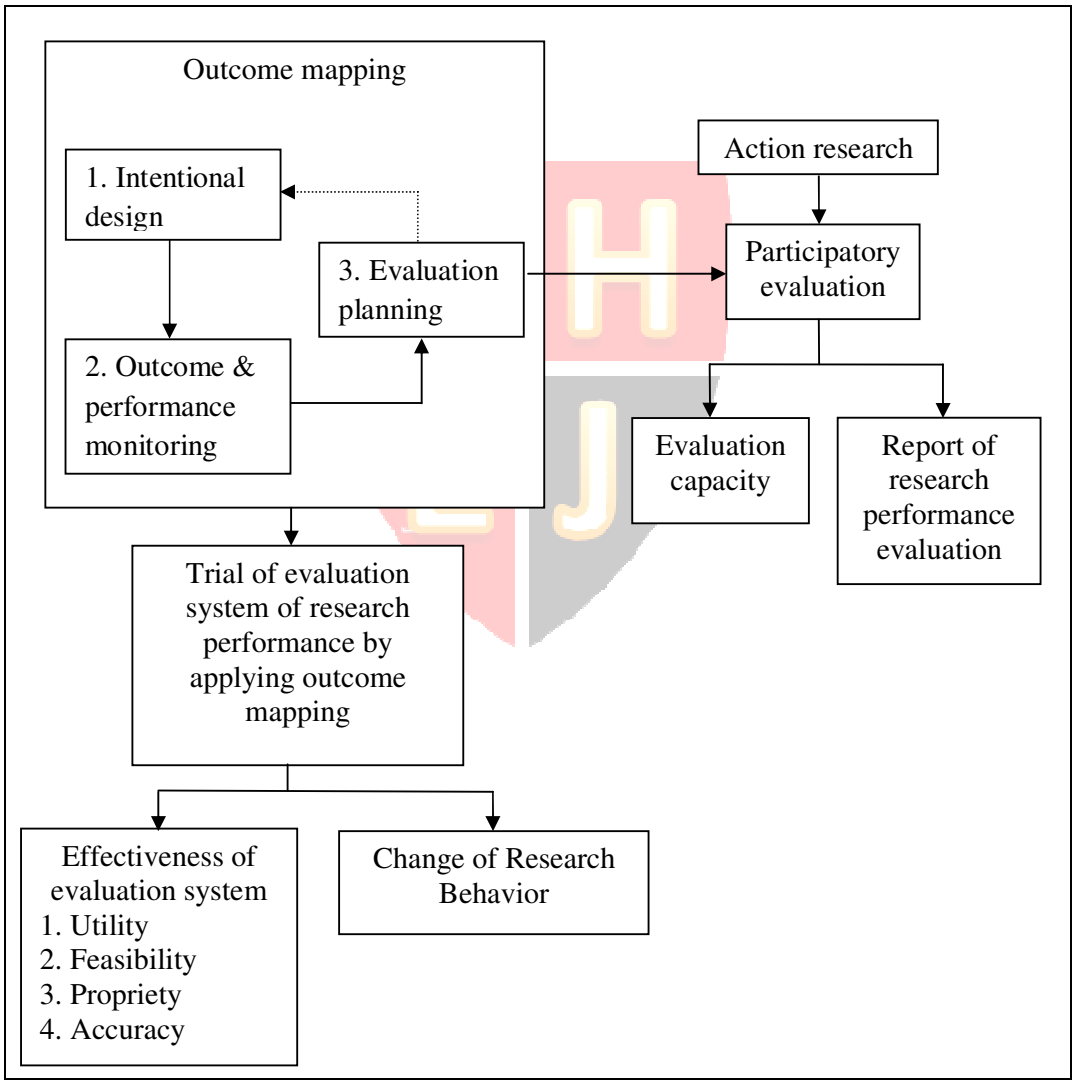

Figure 1: Conceptual Frameworks

1. Methodology

1.1 Procedure

Research and development that was used for the procedure consisted of three steps:

Phase 1 – initial study of data has been made by means of document examination and interviews of 4 executives and 6 lecturers. The attitude and research behaviors of 8 researchers have been assessed.

Phase 2 – it involves the investigation of the elements of evaluation system of research performance by applying outcome mapping approach and the trial of such system.

1) A two-day workshop has been held in order to arrange research plans based on outcome mapping approach. In this regard, the sample group consisting of executives, researchers, lecturers, and staffs with a total number of 15 has attended the seminar.
2) The study of research behaviors prior to the trial of the evaluation system has been made. This involves the sample group consisting of 8 researchers. Tools used for this purpose was the test, a research attitude scale, and a research behavior questionnaire.
3) The study of evaluation capacity prior to the trial of evaluation system has also been made. The sample group consisting of executives, researchers and lecturers with a total number of 12 has been used together with the test and self-evaluation.
4) This stage, lasting for 8 months, involves the trial and study of the performance based on the evaluation system by applying outcome mapping approach. The sample group consists of executives, researchers, lecturers and staffs with a total number of 22. The tools/methodologies used throughout that period were focus group discussions and 3 formal interviews as well as informal interviews, observations, and document examination.
5) The study on the performance and evaluation capacity development has been made with the sample group consisting of executives, researchers, lecturers, and staffs with a total number of 12, which lasts for 8 months. The tools/methodologies used throughout that period were focus group discussions and 2 formal interviews as well as informal interviews, observations, and document examination.

Phase 3 – it concerns the assessment and verification of evaluation system of research performance by applying outcome mapping approach.

1) The evaluation system has been assessed with the sample group consisting of executives, researchers, lecturers, and staffs with a total number of 15 by means of the interviews, and five-level rating scale.
2) The comparison of research behaviors of pre- and post- trial of evaluation system has been made with the sample group of 8 researchers. Tools used in this regard was the test, a research attitude scale, and a research behavior questionnaire.
3) The comparison of evaluation capacity of pre- and post- trial of evaluation system has been conducted with the sample group consisting of executives, researchers, lecturers, and staffs with a total number of 12. The interview, test, and self-assessment has been applied for this purpose.
4) Evaluation system has been examined by 7 experts. A questionnaire was the tool used for this purpose.

1.2 Statistics

Data analysis was made by means of content analysis, average, standard deviation, signed test, Wilcoxon signed ranks test, median and inter-quartile range.

1.3 Results

1. Three main elements of evaluation system of research performance by applying outcome mapping approach were:

Element 1: Intentional design – sub-elements were:

1) Vision
2) Mission
3) Boundary Partners
4) Outcome Challenges
5) Progress Markers
6) Strategy Maps
7) Organizational Practices

Element 2: Outcome and performance monitoring – sub-elements were:

8) Monitoring Priorities
9) Outcome Journal
10) Strategy Journal
11) Performance Journal

Element 3: Evaluation planning – sub-elements were:

12) Evaluation
13) Annual Report

2. After the trial of evaluation system of research performance by applying outcome mapping approach in the Faculty of Liberal Arts and Science, Nakhon Phanom University, it is revealed that there are 3 boundary partners who push forward the researches in the faculty. In this regard, throughout 8 months of performance, all three have achieved the following outcome challenges: 1) Dean or Deputy Dean for Planning and Development Affairs have achieved 3 outcome challenges of 12 indicators, 2) research staffs have achieved 5 outcome challenges of 9 indicators, and 3) head of research projects have achieved 7 outcome challenges of 11 indicators. When all three are prioritized, boundary partners with the highest influence for the researches are Dean or Deputy Dean for Planning and Development Affairs, research staffs, and head of research projects, respectively.

With respect to the outcome challenges and progress makers for 3 boundary partners after 3 improvements are as follows:

The outcome challenges for Dean or Deputy Dean for Planning and Development Affairs include: seeking the source of funds and alloting research budget for the faculty, promoting personnel's recognition in producing quality researches, having strong research networks capable to make research presentation in national and international forums as well as disseminating knowledge to communities and countries in Greater Mekong Subregion. The progress markers are as follows:

'Expect to See' Level :

1. To formulate policies, and to make research plan covering all research missions of the faculty.
2. To allot research budget for the faculty.
3. To arrange research presentation forum within the faculty.

'Like to See' Level :

4. To arrange training programs on conducting the faculty's researches.
5. To develop/improve research plans for modernity and efficiency purpose.
6. To create research discussion forum within the faculty.
7. To create research network.
8. To award the researcher producing the best research.
9. To promote the dissemination of researches at national and international level.

'Love to See' Level :

10. To have an Exchange Program for research personnel with other universities or foreign countries.
11. To seek external research grant for the personnel.
12. To steer the faculty towards the model of research of the university.

The outcome challenges, for the head of research projects, include the ability to successfully manage research work, and to promote the building of researchers and young-generation research network with quality. The progress markers are as follows :

'Expect to See' Level :

1. To closely monitor data and information on researches.
2. To report the progress of research project within specified timeframe.
3. To coordinate with the research personnel within the faculty.

'Like to See' Level :

4. To efficiently supervise the adminstration of a research plan/project.
5. To be able to write the research plan/project within a short period of time.
6. To be able to write the articles for research dissemination.
7. To persuade or induce those who have never done any research to do so.
8. To be able to build young-generation researchers.

'Love to See' Level :

9. To submit articles/research to nationally or internationally recognized journals for publication purpose.
10. To have research works published in national or international recognized journals.
11. To create a strong research team within the faculty.

The outcome challenges for research staffs include their ability to efficiently coordinate the research plans with all concerned parties under budget constraints. The progress markers are as follows:

'Expect to See' Level :

1. To arrange a research system within the faculty.
2. To provide the personnel with advice on the access to the source of research grant.
3. To publicize the information on the source of research grant.
4. To monitor the progress of those who receive research grant in the faculty.

'Like to See' Level :

5. To efficiently coordinate the research procedure with the personnel in the faculty
6. To arrange meetings to publicize the progress in conducting researches of the faculty.
7. To efficiently coordinate the researches with the personel from other faculties or universities.

'Love to See' Level :

8. To create research database for efficient search and retrieval
9. To have a network for concrete administration of research work

The frequency of data collection is :

1.) Data concerning the outcome challenges of research staffs has been collected once a month.

2.) Data concerning the outcome challenges of research project has been collected once per three months.

3.) Data concerning the outcome challenges of Dean or Deputy Dean for Planning and Development Affairs has been collected once per semester.

4.) Data concerning the strategy map of 3 boundary partners and organization practices has been collected once per every semester.

In addition, the emphasis on operation strategies of Dean or Deputy Dean for Planning and Development Affairs can render to the promotion of higher efficiency of research of the faculty. Data collection method has been changed from the interview to the informal focus group on the belief that the latter can achieve detailed data and enhance the expression of ideas among those involved. Meanwhile, "annual report" process has been added since the authors reckon that this particular process can motivate boundary partners to recognize the development of research works according to their individual roles. Also, evaluation system can motivate conducting researches in the faculty. Said methods conform to normal operations, encourage free exchange of opinions, and translate critical thinking into the development of more systematic evaluation. For building of evaluation capacity, the evaluation team needs to develop the following knowledge most: dimensions of evaluation concept, data analysis, and report writing. During the course of research performance evaluation, the evaluation team considers that it is an opportunity to review the knowledge on the evaluation and research. Meanwhile, it is viewed that the factors, which promote greater efficiency of the evaluation are: the time, continuation of practice, supports from the executives, and the practice under the guidance of experts in the field of evaluation.

3. According to the results based on the assessment and examination of the evaluation system of research performance by applying outcome mapping approach, better research behaviors and capacity evaluation in the sample groups are found comparable to those before the research with the statistical significance of .05. One can thus claim that the evaluation system has the effectiveness in light of utility, feasibility, propriety, and accuracy.

The evaluation system has the advantages of being flexible in operating and allowing those concerning parties to participate in the formulation of operation procedures. Its indicators and scoring criteria are also clear and straightforward. It is adaptable to the operation procedures and practical too. However, the drawbacks of the evaluation system are that it may be tardy to yield the obvious results, while close attention of responsible persons is also required.

Conclusion

Developed evaluation system of research performance consists of 3 elements with 13 processes. Also, annual report process has been added. Three boundary parties involving in research perfomance are Dean or Deputy Dean for Planning and Development Affairs, research staffs, and head of research projects. It is found that Dean or Deputy Dean for Planning and Development Affairs is the most influential boundary party to research performance.

The research results reveal that the evaluation system of research performance by applying outcome mapping approach has promoted the change of research and evaluation behaviors. It corresponds to actual performance; while, the utility, feasibility, propriety, and accuracy are its effectiveness. Consequently, it can be adaptable to those dynamic and complicated plans or projects from which long-term outcomes are expected.

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