

The CIPP Model to Practice: Linking West to East

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Abstract

During the implementation process there were several mechanisms used for evaluation of the process and also assess the satisfaction of students, however it requires a comprehensive evaluation in order to maintain a sustain quality improvement. In addition, it is a matter of Merit and Worth: an intrinsic value and its value in reference to context and specific application. Therefore, an internal periodic evaluation is essential for assessing the merit and worth of the any educational program curriculum. This paper presented as a case study for the utilization of CIPP model to evaluate implementation of an undergraduate medical program designed by partner institution of Western Europe in Eastern Saudi Arabia. In this paper highlighted that he CIPP model provides general ideas which needs to be contextualized to local environment. A specific set of questions/instruments to initiate evaluation of an adopted program.

Key words: CIPP; Curriculum evaluation; Program evaluation

Type of contribution: Best practice paper

1. Introduction

During the implementation process there was several mechanisms used for evaluation of the process and assess the satisfaction of students, however it requires a comprehensive evaluation in order to maintain a sustain quality improvement. The evaluation of any program is an essence of its further development and it requires a lot of effort (1). The curriculum development or modification usually emerges from a concern about an issue of problem related to one or other audience, as they are not achieving the outcomes as required by the curriculum (5,6) or would like to improve the conditions further.

The term evaluation in education is often used interchangeably with assessment. While assessment is primarily concerned with the measurement of student performance, evaluation is generally understood to refer to the process of obtaining information about a course or program of teaching for subsequent judgment and decision-making (1,2).

A conceptual analysis of the term “Evaluation” has four central features of evaluation given under (3):

1. Evaluation is appraisal in which we make judgment.
2. Such judgments are made in the light of criteria.
3. Criteria issue from, and are appropriate in respect of particular contents.
4. Such Criteria embody human resources, and evaluation model, therefore, inform decisions

This paper presented as a case study for the utilization of CIPP model to evaluate implementation of an undergraduate medical program designed by partner institution of Western Europe in Eastern Saudi Arabia.

In this paper highlighted that he CIPP model provides general ideas, which needs to be contextualized to local environment. A specific set of questions/instruments to initiate evaluation of an adopted program.

Therefore, this case study based on initially, formulating appropriate questions that is fit for

the purpose of evaluation. Then, identifying the sources from which information about indicators and evidences will best be obtained. Next, designing instruments to gather data. Finally, collecting, analyzing and interpreting data to find answers for initially posed questions. The whole concept is based on practical application of the CIPP model in our context; however, the real data after evaluation is not being discussed here because of the ethical consideration including confidentiality and copyright concerns.

1.1 Purpose of the Evaluation

Guba and Stufflebeam (4) identified four types of decision that are involved in curriculum evaluation. In addition, it includes certain features for an organizing framework of an examining of curriculum evaluation. These types include the decision about:

1. Planning intention, e.g., which objectives to select.
2. Planning procedures, e.g., which personnel, methods and material employ.
3. Implementing procedure, e.g., whether to continue, modify or abandon a procedural plan.
4. Outcomes, e.g., which intentions are realized, to extent and by whom.

The two concepts delineated by Guba and Lincoln, 1981 (4) seems especially useful to understand the purpose of the report on evaluation: *merit* and *worth*. **Merit**, as they use the term, refers to the intrinsic value of an entity—value that is implicit, inherent, and independent of any applications. Merit is established without reference to a context. **Worth**, on the other hand, is the value of an entity in reference to a particular context or a specific application. It is the “payoff” value for a given institution or group of people.

1.2 A Typical Structure of the Medical Program

The program usually consists of 5 years plus or minus preparatory year followed by one-year internship (Figure no. 1). It is now often competencies based. Each year consists of four blocks/Modules and each block/Module has its theme and domain. Nowadays it is usually an integrated curriculum, applies the approach of spiral learning as started from

basic concepts, and becomes wider during last years of curriculum. Moreover, for achieving all competencies and problem based approached is the main instructional design with the combination of lectures and small group teaching. The curriculum sometime also has some separate line activities from first year to final year like professional development, mentor, communication skills etc.

Years	Blocks for Teaching					Professional Development	Research Skills Development	Communication Skills Development
	Basic Sciences		Clinical Sciences					
1	Clinical Sciences	Block 1.1	Block 1.2	Block 1.3	Block 1.4			
2		Block 2.1	Block 2.2	Block 2.3	Block 2.4			
3		Block 3.1	Block 3.2	Block 3.3	Block 3.4			
4		Block 4.1	Block 4.2	Block 4.3	Block 4.4			
5		Block 5.1	Block 5.2	Block 5.3	Block 5.4			
Lines	Professional Development							
	Research Skills Development							
	Communication Skills Development							

Figure No. 1 A hypothetical Curriculum Map

1.3 Overall Evaluation Goals

Prof. R.M. Harden emphasized that the curriculum could be seen from the following 10 windows (5):

- (1) The expected learning outcomes
- (2) Curriculum content or areas of expertise covered
- (3) Student assessment
- (4) Learning opportunities
- (5) Learning location
- (6) Learning resources
- (7) Timetable
- (8) Staff

(9) Curriculum management

(10) Students

Based on recommendations by Prof. Harden (5), the following goals have set for evaluation:

- Is the curriculum executed as it was and adopted – A gap analysis?
- Is the curriculum in clearly written and not have any editorial or other mistake?
- Is it really integrated (Vertically & Horizontality) curriculum?
- Is the curriculum achieved the outcome?
- Is it a contextualized and relevant (applicable to local culture and) curriculum?
- Is it appropriate for the level of Students intended?
- Is there a major concern about the adoption, if adopted from outside?
- Is there any need to re-design it?
- Is it a cost-effective and benefit?
- Is satisfaction of students maintained through out the execution?
- Is satisfaction of staff maintained through out the execution?

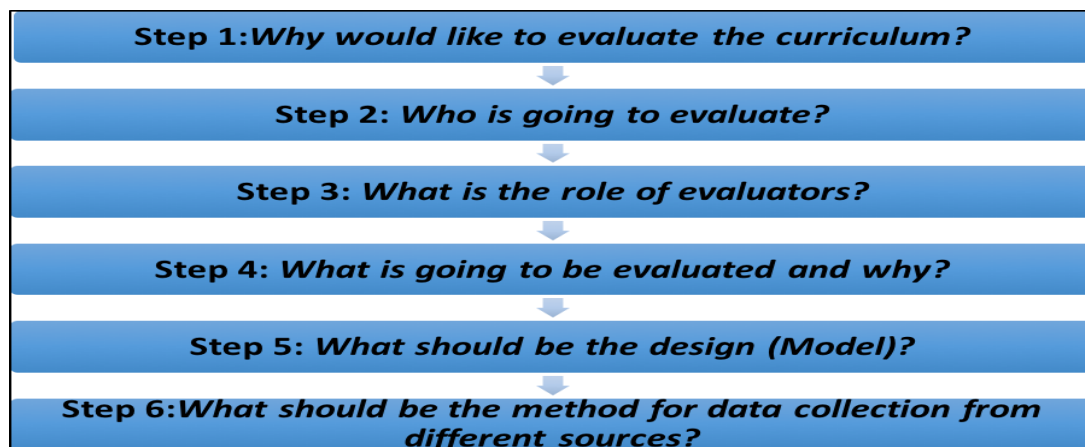


Figure No.2: Steps for an evaluation

1.4 Background of CIPP Model

The CIPP model was originally developed as a means to systematically provide timely evaluative information for use in decision-making (Ref: Stufflebeam, 1966). The model's first installment—actually before all 4 CIPP parts were introduced—was published more than 35 years ago (Stufflebeam, 1966) and stressed the need for process as well as product evaluations. The second installment— published a year later (Stufflebeam, 1967)— included context, input, process, and product evaluations and emphasized that goal-setting should be guided by context evaluation, including a needs assessment, and that program planning should be guided by input evaluation, including assessments of alternative program strategies. The third installment (Stufflebeam et al., 1971) set the 4 types of evaluation within a systems/improvement-oriented framework. The model's fourth installment (Stufflebeam, 1972) showed how the model could and should be used for summative as well as formative evaluation. The model's fifth installment—illustrated by this checklist—breaks out product evaluation into the above-noted four subparts in order to help assure and assess a program's long-term viability.

The CIPP Evaluation Model is a comprehensive framework for guiding evaluations of programs, projects, personnel, products, institutions, and systems. Corresponding to the letters in the acronym CIPP, this model's core parts are context, input, process, and product evaluation. In general, these four parts of an evaluation respectively ask, what needs to be done? How should it be done? Is it being done? Did it succeed? (Ref: Daniel L. Stufflebeam, 2007).

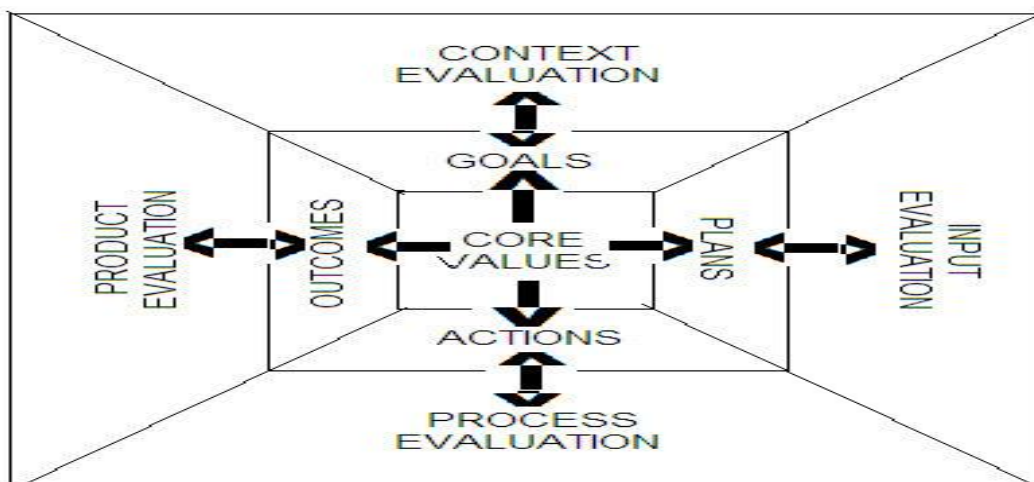


Figure No.3 CIPP Model

CIPP Evaluation Model Checklist	
Contractual Agreement	Guide evaluation
Context	Assesses needs, assets, and problems within a defined environment
Input	Assesses competing strategies and the work plans and budgets of selected approach
Process	Monitors, documents, and assess program activities
Product (Impact)	Assesses a program's reach to the target audience
• Effectiveness	Assesses the quality and significance of outcomes
• Transportability	Assesses the extent to which a program has (or could be) successfully adapted and applied elsewhere
• Sustainability	Assesses the extent to which a program's are successfully institutionalized and continued over time
• Metevaluation	An assessment of an evaluation's standards of sound evaluation
Final Report	Pulls together evaluation findings to audiences about what was attempted, what lessons were learned; and the of the program

Figure No. 4 CIPP Model Checklist

2. Method

2.1 Practical Application of the CIPP Model

2.1.1 Process of defining domains, sub-domains and development of instruments

The first step in the model application is to define the main domain utilizing for the execution of the curriculum. Therefore, we as a committee decided after literature review and reviewing the existing system for the implementation of the curriculum and identify the all stakeholders to be involved in the implementation.

Thus we identified that for any curriculum, we have five main domains: faculty; students; curriculum; resources and administration as shown in figure no. 5.

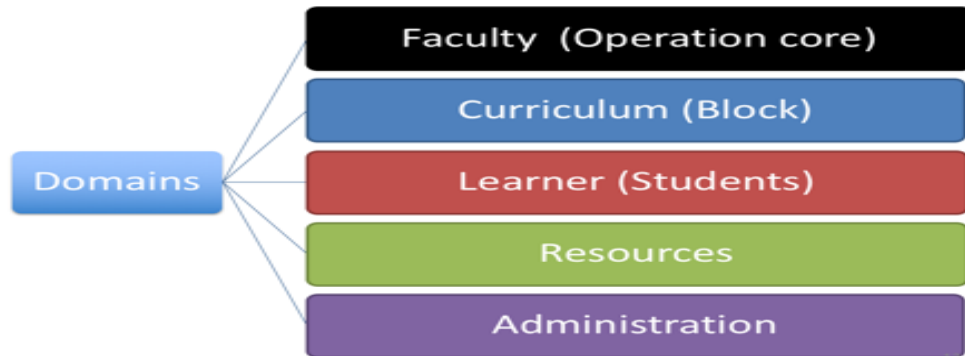


Figure No. 5: Sample of Defining Main Domains

Later for each main domain, we defined sub-domains as mentioned below in the figure 6.

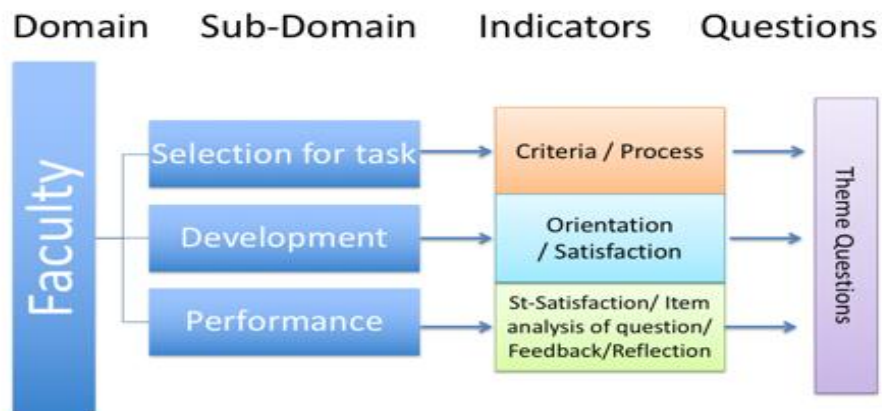


Figure No. 6: Sample of Defining Domains, Subdomains and Indicators

2.1.2 The process of questions development / Selection of data / Selection of tool

A Delphi Technique and literature review have been selected for development of questionnaire for collecting data and developed the tools for survey, document review, an interview (see the appendices). Experts suggested which questions are important and according to their suggestion, we pursued to finalize the evaluation process. We developed first domains, sub domains, and then relevant questions (See Appendix 1) that is 125, these questions have been given codes because we further expanded these into sub-questions and developed questionnaire for different resources such as Dean, vice deans, curriculum coordinator, block coordinators, faculty and students (see appendices).

2.1.3 Types of data/information that were collected

The committee has developed the following two methods for data collection. The committee has identified the following five domains:

- Faculty / Staff
- Curriculum (Block)
- Learner (Students)
- Resources
- Administration

2.2 Sources for data collection

Out of the domains selected, we further classify into 23 sub-domains as if in faculty domain, we have selection, development and performance, and similarly in curriculum we have content, context, and integration. Furthermore, after developed the indicators and based on these indicators developed 125 – main questions. These 125- main questions further used to develop questionnaires. We have collected information from different resources in order to make a triangulation.

2.2.1 Quantitative Data

A questionnaire has developed for administration, students, faculty including closed ended, open-ended questions for assessing the stakeholder knowledge, while for assessing their perception; we included a Licker scale for their agreement.

2.2.2 Qualitative Data

After analysis of data collection by the questionnaire from all stakeholders, a key informant interview and a focus group discussion have been conducted in order to get insight of the stakeholders.

2.2.2.i Students Focus Group Discussion

The three clusters randomly selection was done to select of 10 – students from each block (1.4, 2.4, & 3.4). We divided the whole male and female group into three clusters: High (>80%), Middle (70-80%) and low (60-69%) and then randomly selected three students from each cluster and add class representative for this group. Developed the following questions for an initiation of the discussion.

Questions for focus group discussion

Competencies / milestones

- Q. What are the abilities that a doctor should have to do his job well?*
- Q. Do you think GMCA curriculum will help you in acquiring those abilities?*
- Q. From where you can know what are these abilities/competencies?*
- Q. Is it possible to determine; development of those abilities over time in GMCA?*

Students learning

- Q. Where you like to do the self-study?*
- Q. What is the best time for self-study?*
- Q. How do you utilize the self-study time in timetable?*
- Q. Do you get enough self-study time to cover the content adequately?*
- Q. How much do you remember, of what you have learnt in the previous blocks?*
- Q. Which activities in the college are useful for your learning?*
- Q. Can you determine why you need to learn things or what is the use of information?*

Support services

- Q. When students need support service?*
- Q. What is expected from support services?*
- Q. Do you know who is your academic advisor?*

Progress test

- Q. What is the purpose of progress test?*

2.2.2.ii Faculty Focus Group Discussion

A group of 12 faculty member selected from the whole faculty and tried get representation from each cohort of coordinators, co-coordinators, tutors, lecturers etc.

First the following questions have selected from the questionnaire, which need confirmation by triangulation.

Questions Selected for Focus Group Discussion

- Q. What is competency?*
- Q. What are the milestones of competencies?*
- Q. Are these milestones of UoG easily available?*
- Q. Can you determine how these milestones develop into competencies over six years?*
- Q. How much of the block content is implemented in KFU as received from UoG?*
- Q. What factors lead to change in the content received from UoG?*
- Q. How do we determine the local needs for students?*
- Q. How do we tailor the UoG curriculum for local needs?*
- Q. Can we determine the extent of student's knowledge at the beginning of the block?*
- Q. What is self-directed learning (SDL)?*
- Q. How students are motivated for SDL?*
- Q. What is the extent of student's understanding of SDL?*

2.3 Data Analysis

A SPSS 20 version used for data feeding and analysis. The chi-square and student t-test mainly used for assessing any significant association among different variables. While 0.05 value used a significant level and qualitative results would compile by team of medical educationist reviewers

3. Discussion

In this study, we highlighted that the CIPP model provides general ideas, which needs to be contextualized to local environment. This paper further explored that a specific set of questions/instruments to initiate evaluation of an adopted program. Learning (PjBL) curriculum, there are several methods or models used for evaluation of the process and assess the satisfaction of students, however, it requires a comprehensive evaluation in order to maintain a sustain quality improvement. The evaluation of PBL curriculum is an essence of its maintenance of quality and it requires a lot of effort. The curriculum development or modification usually emerges from a concern about an issue of problem related to one or other audience as they are not achieving the outcomes as required by the curriculum or would like to improve the conditions further. The term evaluation in education is often used interchangeably with assessment. While assessment is primarily concerned with the measurement of student performance, evaluation is generally understood to refer to the process of obtaining information about a course or program of teaching for subsequent judgment and decision-making.

This paper presented as a case study for the utilization of CIPP (**Context, Input, Process and Product**) model to evaluate implementation of an undergraduate PBL designed by the partner institution of Western Europe in Eastern Saudi Arabia. It is hypothesized that the CIPP model is the most appropriate model for an evaluation in this case. The context evaluation helps us for identification of needs and defining goals accordingly, while input evaluation assess whether meets needs of planning programs and allocate resources. The process part is mainly focused on execution phase and its outcome is assessed by the product part. Therefore, it is considered a comprehensive approach to evaluation of PBL curriculum. In addition, this paper highlighted that the CIPP model provides general ideas, which needs to be contextualized to the local environment. A specific set of questions/instruments to initiate evaluation of an adopted program, which obviously are different for different curriculum. However, as general rule CIPP model may apply easily for all disciplines for evaluation of PBL curriculum.

Conclusively, this study revealed that revamping of the curriculum structure is required. Moreover, currently the curriculum is fragmented in parts with little clarity of integration and whole and the integration across block is hazy. This is evident among faculty and students that contents are repeated quite often. The information sharing is non-existing across blocks. These all findings will be helpful for revising the curriculum and guide the institute that what needed to be done for the improvement of curriculum as well as learning environment.

4. Limitations of the application of CIPP Model

The CIPP model consists of Context, Input, Process, Product and it is ideally applied as a whole to have a holistic picture of the current situation. Though this report does not reflect the holistic picture, however provides us a starting point for further evaluation. Small sample size might not discover a real picture so required to do it periodically to cover all blocks throughout the academic calendar. The whole process of development of questionnaire and adopted methodology designed by internal committees' members therefore, there would a high chance to have biased in the development process. Therefore, an external opinion is important for the whole process from the beginning till end of the evaluation.

Appendix 1: Sample table for interpretation of the documents reviewed during the evaluation

Questions/ Name of Documents / Aspects for evaluation		Curriculum				Admin & Support Services				Assessment & Progress			Selection Criteria		
		<i>Reasons for changing curriculum mentioned</i>	<i>Goal & Competencies for the curriculum</i>	<i>Tailored to meet the local requirements</i>	<i>Competencies stated</i>	Measure unintended outcome	Role of supporting staff	Types of problems need support	Role of block coordinators in planning of blocks/ Modules	Committees work in synchronized manner	Decisions are made on examination results	Comparison of progress test results	Feedback on progress test results	Training for block planning	Specific criteria for block team
Questions Codes		(2.1.1)	(2.1.2)	(2.1.5)	(2.5.5)	(2.7.3)	(5.3.1)	(4.4.4)	(5.2.1 & 5.2.2)	(5.4.6)	(2.6.11)	(3.2.3)	(3.2.4)	(5.1.1)	(1.1.1, 1.1.2, & 1.1.3)
Document Reviewed		Feasibility Report	Blue Print	Old curriculum	Blue Print	Measurement tools for Hidden curriculum	Job description of producers	List of services offered by admin	Organogram	Guideline ***	Examination report	Progress Test Report		Certificates / Training manual	Policy document
Aspects	1	Available													
	2	Explicitly stated													
	3	Clearly Defined													
	4	Listed													
	5	Clearly Explained /Described													
	6	Clearly mentioned training content													

*NA= Not Applicable, Yes or No

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