

## Effectiveness of Training on Project Management: reaction utilization for evaluation

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### Abstract

*Training is the significant approach for human resource development which creates new skill in employees and contributes in achieving organizational objectives. Identification of the training effectiveness is essential for assessment of the outcome of the training. The objective of the study was to evaluate the effectiveness of Project Management training courses of National Academy for Planning and Development (NAPD). Kirkpatrick's (1996) levels of training evaluation model particularly reaction was utilized for the evaluation. This study used an epistemological research design. The study followed quantitative approach comprising of quantitative technique. Data were collected from primary and secondary sources. To collect data, purposive sampling technique was used. The population of this study was associated with the four core courses of NAPD of five different years those are being a part of the training system as trainees. Data processing and analysis incorporating descriptive analysis were done using SPSS 22 and MS excel software. The measurement and structural model were analyzed to validate the hypotheses using the latest analytical methods available in Smart PLS 3.0. The study found that the trainees provided positive response about the training arrangements and management of NAPD, they have gained sufficient knowledge about the different modules of the Project Management training courses, the trainees developed the capacity to demonstrate the improved job behavior in their respective workplaces and they could apply the gained knowledge appropriately in the workplaces and most of them utilized the specific knowledge of Project Management in different phases of development projects. It can be conferred that Project Management training courses organized by NAPD are considered to be effective. The implication of this study also depicts that the study identified that reaction has no positive relationship with training effectiveness.*

**Keywords:** Effectiveness, Training, Project Management, Reaction, Evaluation

### INTRODUCTION

National Academy for Planning and Development (NAPD) has been regularly organizing Project Management training courses for the capacity development of the officers of the govt., semi-govt., autonomous, non-govt., and private organizations for successful implementation of the development projects. Soroka-Potrzebna (2021) identified that for the purpose of acquiring the necessary knowledge in addition to many years of practice, training in the chosen project management methodology and receiving the required certification are helpful. Skill gap in project management is identified as the foremost problem for projects' success which is depicted by researchers. Kader & Ullah (2022) illustrated that the project is not successfully managed and implemented due to absence of skilled persons in spite of having availability of resources and bureaucratic competence. Saifur et al. (2020) depicted that project implementation delays are common in construction projects, and the extent of these delays varies greatly from project to project and also mentioned that inability to finish projects on schedule is still a persistent

issue in Bangladesh. Hamiduzzaman (2012) revealed that planning and managing development projects have been considered as one of the foremost dilemmas in developing countries like Bangladesh. It is known that the socioeconomic development of developing nations like Bangladesh depends on the effective completion of projects. Various development projects are being implemented directly by all governmental, semi-governmental, and autonomous organizations. For a developing economy like Bangladesh, effective management and plan implementation are essential. Project management is a significant area of concern for Bangladesh because of this. In Bangladesh, it has been noted that many development projects were left unfinished or abandoned, and many of them experienced time and budget overruns. Project management skills can be attained through appropriate training which is a prerequisite for the successful completion of development projects. The success of projects will ultimately be hampered if training is not implemented since competence and expertise will not be acquired. It is necessary to evaluate whether or not the training organization's learning environment is effective and whether or not any new knowledge or abilities have been acquired. Training evaluation is required in order to investigate the discrepancy between work practices and training. Jonny (2016) depicted that training and development should be regarded as another form of investment and its effectiveness should be assessed for exploring its competency in generating an anticipated value for the company. Anh et al. (2016) identified that there were various reasons why organizations failed to conduct comprehensive training evaluations. It is argued by Rehmat et al. (2015) that the most ignored part of the training process is usually the evaluation phase. The instant reactions of participants post training are sometimes misunderstood as a measurement of total training success, and training evaluation finds out to be overestimated (Rehmat et al., 2015). Borate et al. (2014) identified that training effectiveness assessment is conducted to observe how well the goals have been achieved and whether it is the best method to accomplish the goals. Therefore, based on prior researches, this study aims to assess the training courses on Project Management conducted by NAPD by utilizing Kirkpatrick's model among the other recognized model of training evaluation in order to determine their effectiveness. It is known that the socioeconomic development of developing nations like Bangladesh depends on the effective completion of projects. Various development projects are being implemented directly by all governmental, semi-governmental, and autonomous organizations. For a developing economy like Bangladesh, effective management and plan implementation are essential. Project management is a significant area of concern for Bangladesh because of this. In Bangladesh, it has been noted that many development projects were left unfinished or abandoned, and many of them experienced time and budget overruns. Project management skills can be attained through appropriate training which is a prerequisite for the successful completion of development projects.

## **METHODS**

The study was exploratory in nature and followed quantitative approach comprising of questionnaire survey method. To carry out the study, both primary and secondary data were gathered. The primary data was gathered by a questionnaire survey. Reports, books, journals, articles, newspaper reports, course contents, related documents and websites etc. were used as secondary sources of data. The study was mainly correlational in nature as the relevant data were collected and variables were analyzed according to the conceptual framework. Simultaneously due to the fact that data were gathered at a particular point in time, the study was cross-sectional in nature. With the use of FGD, a

pilot study involving 15 participants was carried out for questionnaire preparation comprising trainees of Project Management training course of NAPD who represent govt. organization and implement development projects, academicians and training consultants conferring to Churchill (1979) who identified that the seventh step of questionnaire development process is the pretesting the questionnaire and revision if necessary. Even though the questionnaire was ultimately given out over the phone or through the mail, most authors recommend conducting the initial round of pretests by personal interview. For identifying sample size of the pretest, Zaltman & Burger (1975) recommend that sample to be small and Ferber & Verdoorn (1962) suggest that a sample of 12 is satisfactory. All of the questionnaire's items were subjected to participants' feedback during the FGD. Final questionnaire was developed based on the result of the pilot study. This study specifically examined the NAPD's Project Management training courses' efficacy using Kirkpatrick's training evaluation model. Ali & Mawa (2019) identified that considerably the most well-known model for assessing and analyzing training outcomes is the Kirkpatrick Model (1998). The study area was predetermined. Major institutions those represent the trainees constitute around 497 known population/respondents were included in the sampling frame. From them, a representative sample was surveyed. Traditionally, offices of government organizations are spread around Bangladesh. So respondent's permission from their authority, geographical distance and suitability of the researcher was considerable issue as well. It was ensured that both male and female participants were included in the sample. The researcher collected data in 2018 with the help of designated and trained data collectors. Over 497 respondents were selected to send the questionnaire used in the cross-sectional survey associated with the four Project Management training courses of NAPD who took part in the training system as trainees. The researcher used a modified version of Dillman's (2011) comprehensive design test method to increase response rates. The researcher believes that the given distinctive social and cultural setting of Bangladesh, the data collection methodology is unique (Dubey et al., 2019). An effective response rate of 40.77% was achieved after two waves of data collection, which yielded 389 complete and usable responses. The researcher compared the data gathered in two waves to look for any signs of non-response bias in accordance with Armstrong and Overton's (1977) recommendations. Two waves were compared using the t-test: early waves are intended for early respondents, and late waves are intended for those who required a reminder or more time to answer to the survey.

## RESULTS

**Table 1: Demographic profile of the respondents**

Variables	Population characteristics	Trainee	
		Frequency	Percent
Gender	Male	179	86.06
	Female	29	13.94
Education	Bachelors	95	45.67
	Masters	112	53.85
	PhD	1	0.48
	Diploma	0	0.00
Experiences	Below 5 Yrs.	5	2.40
	5-10 Yrs.	81	38.94
	11-15 Yrs.	50	24.04
	Above 15 Yrs.	72	34.62
	Nil	-	-
Total	-	208	100

It can be illustrated from table that the gender distribution of the trainees' respondents illustrates that among the trainees, representations of the males (86%) are much higher than the females (14%). So it can be depicted that more male participants are being trained in Project Management training than the females. In respect of educational qualification of the respondents the most of them hold the master's degree (53.85%), a small portion (0.48%) of them hold the doctorate degree. When NAPD seeks nomination for Project Management Courses to different organizations the minimum qualifications required for the trainees are masters or graduates with two years of working experience. So it can be conferred from the distribution that it matches the requirement. In respect of the experience level of the respondents, it can be identified from the distribution that senior and mid-level officers (35% and 39%) are coming to training to enrich their project management expertise.

**Table 2: Reactions of the trainees to the training**

Perspectives of Kirkpatrick's Model	Modules	Strongly Agree n(%)	Agree n(%)	Indifferent n(%)	Disagree n(%)	Strongly Disagree n(%)
The trainees' reaction (RTN)	NAPD's institutional resources are adequate for the course. (RTN1)	71(34.1)	130(62.5)	5(2.4)	1(0.5)	1(0.5)
	The best techniques for stimulating learners' interest are employed by trainers. (RTN2)	38(18.3)	133(63.9)	25(12)	12(5.8)	0(0.0)
	Coworkers are advised to enroll in similar programs. (RTN3)	97(46.6)	91(43.8)	14(6.7)	3(1.4)	3(1.4)
	For the sake of the participants, NAPD keeps to its schedule. (RTN4)	67(32.2)	119(57.2)	21(10.1)	0(0.0)	1(0.5)
	NAPD's project management training programs are essential for professional development. (RTN10)	102(49.0)	82(39.4)	20(9.6)	3(1.4)	1(0.5)

In accordance with Kirkpatrick's approach, the first level of evaluation for the efficacy of project management training courses is reaction, which was determined by collecting trainees' feedback. The trainees expressed their opinions on the institutional facility (RTN1), trainer quality (RTN2), recommend to others (RTN3), training schedule (RTN4), and importance of Project Management course in career (RTN10) based on a five-point Likert scale. The survey clearly shows that the trainees had favorable opinions of the management and training arrangements like institutional facility (RTN1) (96.5%), trainer quality (RTN2) (82%), recommend to others (RTN3) (91%), training schedule (RTN4) (89%), importance of project management course for career (RTN10) (88%) of NAPD. Conversely, a small portion of the trainees were indifferent (2.4%, 12%, 7%, 10%, 10%) to these points and some of the trainees were disagreed (6%) about the trainer quality (RTN2). Based on the analysis, it can be concluded that NAPD offers sufficient resources and a comfortable setting for the training of project management courses for its trainees.

**Table 3: Trainees’ responses about most preferred to least preferred training methods**

Trainees’ Responses about most preferred to least preferred training methods							
	Training Methods (RTN8)	Rank Order					
		Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-6
1	Lecture	83	37	33	28	6	13
2	Case Study	42	43	55	35	15	3
3	Role Play	3	11	24	43	61	23
4	Simulation	2	8	19	21	45	66
5	Field Visit	23	41	41	36	19	18
6	Group Work	51	61	33	30	16	8

Table 3 illustrates the trainees’ preference on the training methods (RTN8). The trainees identified different methods suitable for training. Methods are ranked in accordance to their preference. These are arranged as most preferred method to least preferred method according to their responses from rank1 to rank6. The survey unambiguously indicates that the trainees preferred training methods according to ranking are: Lecture (83), Group Work (61), Case Study (55), Role Play (43, 61) and Simulation (66). So the trainees preferred combination of lecture and participatory methods in the NAPD's project management training programs.

**Table 4: Ranking for most to least important factor to consider in selection of Project Management training**

S/ N	Factors	Rank Order							
		Rank-1	Rank-2	Rank-3	Rank-4	Rank-5	Rank-6	Rank-7	Rank-8
1	Duration of Training (RTN5)	32	11	20	37	46	27	8	1
2	Training Material (RTN6)	30	46	47	37	18	10	4	0
3	Cost of Training (RTN7)	9	8	12	24	30	47	34	5
4	Trainer (RTN2)	28	37	44	48	18	7	3	0
5	Training Methods (RTN8)	47	64	37	20	17	5	1	0
6	Curriculum	53	31	31	22	22	30	4	1
7	Location (RTN9)	8	11	13	14	19	31	64	3
8	Other	6	3	2	1	1	3	15	20

Table 4 outlines the importance of the factors to be considered by the trainees for selecting and enrolling in the training programs for project management. The participants selected the factors according to the importance. They identified the factors according to their importance from rank-1 to rank-8. So we can conclude that factors to be considered for the selection and enrollment in the Project Management training course can be graded as: training curriculum (53), training methods (RTN8) (64), training material (RTN6) (47), trainer (RTN2) (48), duration of training (RTN5) (46), cost of training (RTN7) (47), location (RTN9) (64) and other factors (20) like nomination, food support, skill, multi sectorial reasons and personal interest. It is evident from the analysis that the training quality is an important criterion for trainees’ enrollment in any training course.

## DISCUSSION

Measuring the project management training effectiveness identifies the appropriate training initiative for the improvement of officials' capacity which would cater the requirement of the development projects of the country. The first level of training evaluation is to determine trainees' reactions to the various aspects of training in order

to measure the training effectiveness using Kirkpatrick's (1996) model and that was the first research objective. Borate et al. (2014) found that Kirkpatrick's assessment model of training is very effective in measuring training effectiveness. Regarding the training arrangements and management of NAPD, the trainees gave favorable feedback. The majority of participants in the training sessions were pleased with the institutional setting, the instructors, and the course schedule designed by NAPD. Majority of them admitted that they would recommend their colleagues to participate in NAPD organized project management courses and these kinds of courses are important for their career. Trainees identified that training methods are important for a training course and their preferred methods of training according to the ranking are: lecture, group work, case study, role play and simulation. Trainees acknowledged some factors which are important for selection and enrollment in the Project Management training course. These factors can be graded according to their importance as follows: curriculum, training methods, training material, trainer, duration of training, cost, location and other factors like nomination, food support, skill and personal interest. Borate et al. (2014) identified that training courses organized in a continuous basis maintaining quality had been successful in developing positive attitude and reaction in learning in multinational company. This is evident in other studies also. Most of the respondents identified that experience sharing, realizing the opportunities and challenges, job relevancy, updated training curriculum, qualified resource persons; relevant course objectives etc. were the significant issues of success for attaining the course objectives (Begum and Biswas, 2010). The BIBM over the years had continually received a high rating at this level which reflects the quality of performance of training activities carried out by the institute (Mujeri et al., 2013). Mujeri et al. (2013) also illustrated that 75 percent of responders thought the training components were creative and efficient overall. Ferdous & Razzak (2012) found that current training activities satisfied sixty percent of the respondents by conducting a case study on National Bank Ltd. Sindhvad (2009) identified that training plays a significant role in Project Management performance. Rampun et al. (2020) and Saad & Mat (2013) illustrated that the areas of training that still require development are identified by evaluation, which may also offer some insight into potential improvements. Kabir et al. (2020) stated that if training methods are not evaluated then we are not able to identify whether training is effective or not or what measures have been taken to make it effective. So it is needed to identify appropriate training initiative on Project Management by suitable training evaluation method for eradicating the skill gap of the Project Management professionals who work in the development arena of the country. Choudhury & Sharma (2019) iterated that the most widely used method for assessing the efficacy of training programs is Kirkpatrick's (1996) model, which has withstood the test of time and gained popularity due to its capacity to decompose complicated subjects into understandable levels. Cahapay (2021) depicted that the Kirkpatrick model has made considerable contributions to the theory of evaluation and its practice. Krein & Weldon (1994) illustrated that training evaluation according to Kirkpatrick's four levels tries to answer the questions like in Level one, the level of participants' feeling about the training, the extent of participants' learning acquisition from the training in level two, the level of application of their learning in level three and the extent of benefit of the organization in level four. According to Rahman (2016) reaction measures the extent of trainees' feeling about the environment, instructor, course content and materials adhering to the program. Rahman (2016) also illustrates that learning measures what the participants' learned during the training event. Kirkpatrick (1959) outlined that the amount of knowledge that participants learn as a

result of the training is referred to as learning. Rahman (2016) outlines that behavior entails evaluating how well lessons are applied in the workplace after training and result identify the most important outcomes that support the organization's efficiency. In addition, Kirkpatrick (1960) identified that behavior assesses how participants implement new knowledge in their work and also illustrated business outcomes are the most effective approach to assess a training program. The success of projects will ultimately be hampered if training is not implemented since competence and expertise will not be acquired. It is necessary to evaluate whether or not the training organization's learning environment is effective and whether or not any new knowledge or abilities have been acquired. Training evaluation is required in order to investigate the discrepancy between work practices and training. Borate et al. (2014) identified that training effectiveness assessment is conducted to observe how well the goals have been achieved and whether it is the best method to accomplish the goals. Therefore, based on prior researches, this study aims to assess the training courses on Project Management conducted by NAPD by utilizing Kirkpatrick's model among the other recognized model of training evaluation in order to determine their effectiveness. The success of projects will ultimately be hampered if training is not implemented since competence and expertise will not be acquired. It is necessary to evaluate whether or not the training organization's learning environment is effective and whether or not any new knowledge or abilities have been acquired. Training evaluation is required in order to investigate the discrepancy between work practices and training. Borate et al. (2014) identified that training effectiveness assessment is conducted to observe how well the goals have been achieved and whether it is the best method to accomplish the goals. Therefore, based on prior researches, this study aims to assess the training courses on Project Management conducted by NAPD by utilizing Kirkpatrick's model among the other recognized model of training evaluation in order to determine their effectiveness. Motivation and interest of the participants are necessary; trainers facilitation should be in a way to set participants mind properly and the trainees can gain the capability for applying the knowledge; joyful learning can be incorporated; there should be space for energizers, games and exercises in the session; allocation of more time for the session is required so that group work on preparing a CPM diagram and its Analysis for project implementation can be conducted; more theoretical and interactive sessions, group work, thematic discussions, mind mapping etc. as well as practical sessions on the management of big projects are required; dummy project presentation may be useful; sufficient time should be given for the topic to be covered; background or work experience of the trainees should be mentioned clearly while providing nomination by the nominating authorities; course related topics especially from module 2 to module 6 may be increased by decreasing module 1 and module 2; examination may be included that will ensure more concentration from participants during the course; trainees should be carefully selected in consistent with the course topic; sessions should be more interactive by introducing lecture followed by group exercise; there should be sufficient time for doing group work / simulation etc.; it is needed to blend both theory and ground realities; the mode of lecture method should be consisting of every innovation, invention and discovery; U shape sitting arrangement is required and the number of participants must not be more than 25 in a session. Incorporating these recommendations would make the Project Management training courses of NAPD more effective for the participating officers. Training need assessment and appropriate selection of the trainees should be incorporated to address the issues of influence of reaction and learning on training effectiveness. NAPD is the pioneer training organization in the public sector for the capacity development as well as

human resource development of the officials working in different sectors. The government of Bangladesh has allocated a significant portion of its resources to large-scale development projects in which govt. officials are a key stakeholder. Project management training programs have been arranged by NAPD to help government officials become more capable of working effectively on development projects. To assess the effectiveness of the training courses offered by NAPD, this study included these participants. Building capacity and providing training are crucial elements of Bangladesh's Eighth Five-Year Plan (8FYP) and its efforts to achieve the Sustainable Development Goals (SDGs). GED (2020) outlines that 8FYP places a strong emphasis on the advancement of human capital as a catalyst for economic development. United Nations (2015) depicts that to achieve inclusive, equitable, quality education (Goal 4); promoting decent work and economic growth (Goal 8), for promoting justice and peace (Goal 16) the SDGs emphasize the value of training and capacity building. The importance of training evaluation is emphasized as Arthur et al. (2003) depicted that the key decision for a good training should be selecting the evaluation criteria for evaluating training effectiveness. Spitzer (1999) identified that another reason for not conducting training evaluation was a lack of faith in the ability of training programs to benefit the organization. Brown & Seidner (1998) added that training effectiveness remains unknown in many cases due to non-measurement of training which is upsetting for the employees because it is the cause of hindrance of individual growth and organizational strategic value. In order to train researchers and practitioners, it is becoming necessary to evaluate training programs (Alliger, et al., 1997). Vinesh (2014) outlined that in the industrial arena a major gap exists between the knowledge acquisition in the institutions and application and utilization of imparted knowledge and skill. To mitigate this gap industrial concerns are thinking of making a coordinated effort with the institutions for making the employee development programs more fruitful. Training and development contributes towards the growth and success of an organization when the staff members are equipped with the necessary capabilities, knowledge, and skills to complete the jobs that have been assigned to them (Vinesh, 2014). Ikramina & Gastomo (2014) suggested using a set of employees who do not take part in the training but attend the evaluation of performance, called a control group, as an added means of evaluation. They further stated that the method of assessment is a comparison of the results of workplace conducted in comparison to the trained group and the control group. Literature suggests that prior to the formulation of any training program; individual skill should be recognized because of his/her importance in the organization (Agarwal, 2014). He states that training outcomes are diversely impacted by motivation and contextual factors. He also outlines that before attending the training, adequacy and lack of every skill type should be addressed by the human resource practitioners and trainees for learning effectiveness.

## **CONCLUSION**

Evaluation of training is essential for determining the training's value and whether it helps to increase productivity. Trainees were surveyed as part of the study's evaluation to get their opinions on a variety of training effectiveness-related issues. The project management training programs offered by NAPD are regarded as being effective based on the perceptions of the majority of respondents and the four phases of training evaluation framework of Kirkpatrick's (1996). The study found that in the reaction level evaluation adequate facility of NAPD and selection of experienced trainers were considered.

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