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Project management has a task of establishing sufficient controls over a project to ensure that it stays on track towards the achievement of its objectives, this is done by monitoring and evaluation. Monitoring and evaluation are integral and individually distinct parts of programme preparation and implementation. At global level, monitoring and evaluation are tools for identifying and documenting successful programmes and approaches and tracking progress toward common indicators across related projects. It forms the basis of strengthening understanding around the many multi-layered factors underlying violence against women, women’s experiences with such violence, and the effectiveness of the response at the service provider, community, national and international level. Therefore, this academic writing intends to critically discuss monitoring and evaluation as two distinct tools that are used for assessing programmes.

According to Organization for Economic Co-operation and Development (2002) monitoring is the ongoing, systematic collection of information to assess progress towards the achievement of objectives, outcomes and impacts. While evaluation is a systematic and objective assessment of an ongoing or complete project, programme or policy, its design, implementation and results. Its aim is to determine the relevance and fulfillment of objectives, development efficiency, effectiveness, impact and sustainability.

Tuchman (1975) states that monitoring and evaluation informs good programming practice and this is because; at the programme level, the purpose of monitoring and evaluation is to track implementation and outputs systematically, and measure the effectiveness of programmes. It helps determine exactly when a programme is on track and when changes may be needed and also forms the basis for modification of interventions and assessing the quality of activities being conducted.

Monitoring and evaluation can be used to demonstrate that programme efforts have had a measurable impact on expected outcomes and have been implemented effectively. It is essential in helping managers, planners, implementers, policy makers and donors acquire the information and understanding they need to make informed decisions about programme operations.

Straide (2002) adds that, it helps with identifying the most valuable and efficient use of resources. It is critical for developing objective conclusions regarding the extent to which programmes can be judged a “success”. Monitoring and evaluation together provide the necessary data to guide strategic planning, to design and implement programmes and projects, and to allocate, and re-allocate resources in better ways.

Moreover, monitoring and evaluation helps to improve current and future management of outputs, outcomes and impact. Besides that, it is mainly used to assess the performance of projects, institutions and programs set up by governments, local and international organizations. It establishes links between the past, present and future actions.

For this, monitoring is a continuous assessment part of good programming practice which aims at providing all stakeholders with early detailed information on the progress or delay of the ongoing assessed activities. It is an oversight of the activity's implementation stage. Its purpose is to determine if the outputs, deliveries and schedules planned have been reached so that action can be taken to correct the deficiencies as quickly as possible (Tuchman, 1975).

Hence good planning combined with effective monitoring and evaluation can play a major role in enhancing the effectiveness of development programs and projects. Good planning helps focus on the results that matter, while monitoring and evaluation helps people learn from past successes and challenges and inform decision making so that current and future initiatives are better planned to improve people ‘s lives and expand their choices.

Since monitoring is said to be a systematic and continuous assessment of the process of a piece of work overtime, in order to check that things are going to plan as well as evaluation being an assessment of the value or worth of a programme or intervention so as to find out the extent to which the stated objectives have been achieved. It is for this reason that monitoring and evaluation are critically important aspects of planning and management of any programme. It is therefore strategic to discuss the similarities as well as the differences between the two management tools.

According to Kepa (1997) there are many fundamental similarities and differences between monitoring and evaluation. To begin with, the similarities are that they are both management tools that are used for assessing programmes.

Apart from that, for both of them to function they require organizational structures with monitoring and evaluation functions. The adequate implementation of Monitoring and evaluation at any level requires that there is a unit whose main purpose is to coordinate all the Monitoring and evaluation functions at its level. Not only that, for both of them to function they need a framework outlining the objectives, inputs, outputs and outcomes of the intended project and the indicators that will be used to measure all these (Kepa, 1997).

According to Casley and Kumar (1987) monitoring and evaluation are similar in the sense that they both need human capacity to operate. An effective Monitoring and Evaluation implementation requires that there is only adequate staff employed in the Monitoring and Evaluation unit, but also that the staff within this unit have the necessary Monitoring and Evaluation technical knowledge and experience. As such, this component emphasizes the need to have the necessary human resource that can run the Monitoring and Evaluation function by hiring employees who have adequate knowledge and experience in implementation, while at the same time ensuring that the capacity of these employees are continuously developed through training and other capacity building initiatives to ensure that they keep up with current and emerging trends in the field.

Kusek and Rist (2004) highlight that for Monitoring and evaluation to operate they require a work plan and costs. While the framework outlines objectives, inputs, outputs and outcomes of the intended project, the work plan outlines how the resources that have been allocated for the Monitoring and evaluation functions will be used to achieve the goals. The work plan shows how personnel, time, materials and money will be used to achieve the set functions.

The other similarities are that in both there should be the presence of policies and strategies within the organization to promote Monitoring and evaluation functions. Without continuous communication and advocacy initiatives within the organization it is difficult to entrench the Monitoring and evaluation culture within the organization. Such communication and strategies need to be supported by the organizations hierarchy. The existence of an organizational Monitoring and Evaluation policy, together with the continuous use of the Monitoring and Evaluation system outputs on communication channels are some of the ways of improving communication, advocacy and culture (Kepa, 1997).

Above all, in both monitoring and evaluation the information that is gathered during the project implementation phase is used to inform future activities, either to reinforce the implemented strategy or to change it. Additionally, results of monitoring and evaluation are shared out to relevant stakeholders for accountability purposes.

According to United Nations Development Programme (2002) there are several differences between monitoring and evaluation and these include the following; Monitoring is the ongoing, systematic collection of information to assess progress towards the achievement of objectives, outcomes and impacts. Its value is that it can signal potential weaknesses in programme design, allowing adjustments to be made. Not only that, it is vital for checking any changes (positive or negative) to the target groups that may be resulting from programme activities.

On the other hand, evaluation attempts to determine as systematically and objectively as possible the worth or significance of an intervention, strategy or policy. The appraisal of worth or significance is guided by a key criterion. Evaluation findings should be credible, and be able to influence decision-making by programme partners on the basis of lessons learned. For the evaluation process to be ‘objective', it needs to achieve a balanced analysis, recognize bias and reconcile perspectives of different stakeholders including intended beneficiaries through the use of different sources and methods (United National Development Program, 2002).

According to Waithera and Wanyoike (2015) Monitoring is an operational level activity, performed by the supervisors. While, evaluation is a business level activity performed by the managers. Monitoring is a short-term process, that is concerned with the collection of information regarding the success of the project. Conversely, evaluation is a long-term process, which not only records the information but also assesses the outcomes and impacts of the project.

Monitoring is an organized process of overseeing and checking the activities undertaken in a project to ascertain whether it is capable of achieving the planned results or not. Conversely, evaluation is scientific process in meeting the objectives. Monitoring also focuses on improving the overall efficiency of the project, by removing bottlenecks, while the project is under process. Unlike evaluation which stresses on improving the effectiveness of the project by making comparisons with the established standards.

Yumi and Susan (2007) state that evaluation can serve different purposes and its importance is to find out the extent to which particular project objectives have been achieved, this helps fulfil the accountability requirements. While monitoring closely looks at monitoring the implementation processes for deviations from the plan. If there is no deviation, then everything is running smoothly and as planned.

Evaluation helps in providing an opportunity to take a step back, to reflect on the conduct of particular project activities and on the reasons for their state of implementation. It helps a project to progress by providing a clear and specific direction for the necessary changes indicated by the evaluation, to improve the delivery of the project (Yumi and Susan, 2007).

Evaluation also helps in making the information collected throughout the evaluation process during and at the end of the project, available to all stakeholders, team members and those affected, plus anyone for whom such a project might have relevance. It helps in determining with the key stakeholders, particularly the funding bodies and governments, whether the project has generated adequate returns for the investment.

Evaluation provides feedback for the project team about the success of the strategies used, the unforeseen factors which have affected the project, the effectiveness of remedial actions adopted during the project’s implementation. Evaluation also offers recommendations on how to plan for future activities and to help other groups working in the same area, or those wanting to improve their project designs, through dissemination and public availability of evaluation results (Waithera and Wanyoike, 2015).

Monitoring on the other hand is a deliberate systematic means of collection and analysis of information as a project progresses which intended at adequate efficiency and effectiveness of a project embarked on with thorough use of resources. It facilitates organization to determine whether the resources available are enough and are being utilized satisfactorily. Project monitoring is establishing measure that projects are on targets and indicators to measure advancement and achievement (Yumi and Susan, 2007).

Besides that, the other differences between monitoring and evaluation is that with monitoring, activities are linked with resources to aligned with objectives while the activities in evaluation only assesses specific contribution of a project in relation to the results. Monitoring translates objectives into performance indicators and set targets while evaluation examines implementation process for better significant accomplishment vis-à-vis offer recommendations for improvement on slated project.

Rossi, Lipsey and Freeman (2004) add that, timing also differentiates the two, monitoring is continuous throughout the project, the persons involved will keep checking on the projects till it is seen to the completion and on the other hand evaluation involves periodic review at significant points in the project progress. Monitoring deals with day to day activities, output, indicators of progress and development while evaluation looks at access overall delivery of outputs and progress towards objectives and goals. Monitoring also has regular meetings, interviews, monthly and quarterly reviews while evaluation only has extraordinary meetings and additional data collection exercise.

Written output is another difference between monitoring and evaluation and this is because, monitoring involves regular reports and updates to project users, management and sponsors while evaluation involves written reports with recommendations for changes to projects presented in workshops to different stakeholders. Information users also differentiates the two, with monitoring the users of information is the government agencies, researchers and companies while evaluation users are the stakeholders, top management team, external facilitator’s and members of staff (Rossi, Lipsey and Freeman, 2004).

In the development projects, monitoring and evaluation play diverse roles, in the sense that monitoring is an ongoing process, whereas evaluation is performed periodically. Further, the focus of the assessment also differentiates the two, that is, monitoring is all about what is happening, while evaluation is concerned with how well it happened.

Since evaluation is a process that critically examines a program, it involves collecting and analyzing information about a programmes activities, characteristics and outcomes. Its purpose is to make judgements about a programme, to improve its effectiveness and to inform programming decisions. Evaluation therefore falls into one of two broad categories which are formative and summative evaluations.

According to Bloom (1971) there are two different types of evaluation and these are formative and summative evaluation. [Formative evaluation](https://www.sciencedirect.com/topics/social-sciences/formative-evaluation) is designed to measure the impact of something while it is taking place and allows for incremental improvements to occur in a ‘just in time’ fashion. From an input/output standpoint this means measuring the quality of the inputs (components and the whole system) before measuring the outputs (the impact of the whole system) with the logic being that quality ‘inputs’ will lead to quality ‘outputs’.

 Formative evaluation in terms of technology could be customer satisfaction surveys of both employees and users in terms of computing services; an analysis of whether all computers are under warranty or which ones need to replaced; and interviews with management, employees and [technology support](https://www.sciencedirect.com/topics/computer-science/technology-support) staff about the efficacy of the [technology system](https://www.sciencedirect.com/topics/computer-science/technology-system) in general (Bloom, 1971).

Scriven (1967) highlights that [Formative evaluation](https://www.sciencedirect.com/topics/social-sciences/formative-evaluation) is usually undertaken early in the development of the program to inform the providers and stakeholders about the trends in results, whether the goals of the program are likely to be fulfilled, and to identify the barriers and facilitators of implementation. Results of the formative evaluation are then incorporated into the program with the necessary adjustments made to improve program implementation. These evaluations are usually less formal, and more likely to be internal, than the [summative evaluations](https://www.sciencedirect.com/topics/social-sciences/summative-evaluation), and while they are often mentioned in descriptions of new programs, the evidence is rarely published.

However, Summative focuses on the outputs and short-term and long-term impact or outcomes. The focus is on the ends themselves; have they been attained? Are they even being measured? If the ends have not been attained, what are the reasons? The longer-term impact or outcomes focuses on the meaning of the technology for users and employees – are they being more productive? Are the career databases being utilized more and are users finding jobs? Are the [youth](https://www.sciencedirect.com/topics/social-sciences/youth) computers being used more and, if so, for what and how are they being used? From a funding standpoint, in particular, summative evaluation helps pinpoint the ‘value-added’ of the [organization's technology](https://www.sciencedirect.com/topics/computer-science/technology-organization) infrastructure (Scriven, 1967).

According to Guyot (1978) Formative evaluation takes place before or during implementation with the aim of improving the design and performance of the technology being implemented. For Health Information Exchange, formative evaluations tend to be focused on a singular aspect of the exchange, and thus can be carried out by a relatively small team overseen by a project manager or program director. For example, the project director may wish to ensure that health care organization leaders are on board with the formation of a Health Information Exchange effort in the community, or the creation of a new Heath Information Exchange service. A stakeholder analysis would facilitate systematic collection of feedback from the health care leaders useful to decision-making at the local Health Information Exchange while simultaneously providing insights useful to other Health Information Exchanges that could be shared in the form of a whitepaper or professional conference presentation.

Trumbull and Lash (2013) state that formative evaluation can occur during multiple phases of Health Information Exchange development as summarized. Several existing Health Information Exchange efforts have used formative evaluation to assess readiness for Health Information Exchange adoption, the design of Health Information Exchange services or the early adoption of Health Information Exchange in an organization or geographic region. Qualitative methods, those that focus on open-ended questions and emergent discovery of knowledge, lend themselves well to this form of evaluation.

S[ummative evaluation](https://www.sciencedirect.com/topics/computer-science/summative-evaluation) is undertaken to measure the result of a project. It is a verdict on whether or not the project succeeded and it focuses on capturing data, [drawing conclusions](https://www.sciencedirect.com/topics/computer-science/drawing-conclusion) and presenting a final report. A summative evaluation is often used by externally funded projects as an audit to inspect and check that everything has been done right and in accordance with the terms of reference.

Summative evaluation occurs after implementation, and focuses on the impact of a given technology. Most often this form of evaluation is used to measure whether or not a technology such as Health Information Exchange achieved its desired aims or goals. For example, a summative evaluation might measure the impact of Health Information Exchange on specialty care referrals from primary care clinicians (Trumbull and Lash, 2013).

The focus of summative evaluation is on outcomes, however, and not on the process. So the emphasis in an e-referral project would be on [care coordination](https://www.sciencedirect.com/topics/medicine-and-dentistry/care-coordination), including timeliness of follow-ups by specialists and primary care physicians’ satisfaction with the service, instead of simply counting the number of e-referrals sent by primary care doctors. In other words, summative evaluation measures the value of Health Information Exchange with respect to [clinical decision-making](https://www.sciencedirect.com/topics/medicine-and-dentistry/clinical-decision-making), [health care delivery](https://www.sciencedirect.com/topics/medicine-and-dentistry/delivery-of-health-care), as well as patient and population outcomes. This kind of evaluation can also be used to measure Health Information Exchange usage, such as measuring how many patients’ records in the Health Information Exchange are accessed or under what conditions emergency department clinicians access the Health Information Exchange. The results of summative evaluations can be shared in the form of reports or peer-reviewed journal articles in addition to conference presentations. Summative evaluations often use quantitative methods, although qualitative methods are used in some cases.

Nicol and Macfarlane-Dick (2006) add that summative evaluations are also useful in assessing the efficiency of the management and its effectiveness in delivering outputs on time and within budget. They are also used to audit finances; end-of-project financial information can help funders make decisions as to whether they should provide further support or not. End-of-project evaluations are also able to gauge the level of project success and identify lessons learnt for future actions.

Additionally, summative evaluations concentrate on the level of sustainable project outcomes being utilized by users and end beneficiaries and can also be very useful in evaluating the sustainability and [scalability](https://www.sciencedirect.com/topics/computer-science/scalability) of projects. Particularly projects in education, [information delivery](https://www.sciencedirect.com/topics/computer-science/information-delivery) and [cultural heritage](https://www.sciencedirect.com/topics/social-sciences/cultural-heritage), the benefits and impact of a project may take some time to be realized and it is important not to undertake the evaluation too early. The evaluation should be planned to coincide with the time the project impact is expected to be felt, sometimes a year or more after the project is completed (Nicol and Macfarlane-Dick, 2006).

According to Theall and Franklin (2010) formative evaluation is used for judging the worth of a program while the program activities are forming. They can be conducted during any phase of a process, course or program. Consequently, formative evaluations are basically done on the fly. They permit the designers, learners, instructors, and managers to monitor how well the instructional goals and objectives are being met. Its main purpose is to catch deficiencies as soon as possible so that the proper learning interventions can take place that allows the learners to master the required skills and knowledge.

Formative evaluation is useful in analyzing learning materials, students’ learning, achievements and teacher effectiveness. Formative evaluation is primarily a building process which accumulates a series of components of new materials, skills, and problems into an ultimate meaningful whole. Formative evaluation was intended to foster development and improvement within an ongoing activity. Summative evaluation on the other hand is used to assess whether the results of the object that is being evaluated has met the stated goals.

Apart from that, a [formative evaluation](https://www.sciencedirect.com/topics/social-sciences/formative-evaluation) may be iterative and certainly starts much earlier in the life of a project. It is often allied to monitoring and provides the feedback loop to guide project change during its implementation. It collects data and offers options based on the analysis of the required data and focuses more on understanding and learning by providing various short reports at appropriate times. Midterm reviews of programmes and larger projects have many of the characteristics of a formative evaluation.

Formative evaluation can also be used when there is a clear aim to test the innovative nature of a project, or a particular intervention within a project (for instance, the efficacy of a training programme; the success or otherwise of a museum education summer school), for its ability to be mainstreamed or scaled up. Rolling evaluations concentrate on in-depth monitoring data and drawing regular conclusions. The lessons learnt from this should then inform and, if necessary, lead to the recommendation of change to certain practices (Theall and Franklin, 2010).

Furthermore, formative evaluation is undertaken to enable management to obtain an independent assessment of the progress so far when the project period is usually over two years in length. Midterm evaluations or reviews concentrate mainly on the outputs and their contribution to achieving the project purpose. They also include an assessment of the budget and actual expenditure and the project management’s capacity to keep to the planned targets. The results of midterm evaluations should be used to assist the project manager in understanding what is going on and what needs to be done in the future (Bloom, 1971).

To sum up, the principal difference between formative and summative evaluations is that, while the formative evaluation is a kind of the instructional process, summative evaluation is a sort of grading process. [Formative evaluation](https://www.sciencedirect.com/topics/social-sciences/formative-evaluation) is usually undertaken early in the development of the program, while summative evaluation occurs after implementation of a program. Therefore, a balanced evaluation is based on both formative and summative evaluation, that provides necessary information about the next steps to be undertaken.

Evaluations provide an opportunity for the initiative’s overall progress to be considered, including focused consideration of specific aspects of the initiative. A small number of key evaluation questions help provide this focus. These are not questions that are asked in an interview or questionnaire, but high level research questions that will be answered by combining data from several sources and methods. Different project stages require different evaluation questions to assess progress. Therefore, below is an outline of the key questions that both formative and summative evaluations seek to answer.

According to Heritage (2010) Formative evaluation questions seek to answer questions about how to improve and refine a developing or ongoing program. Formative evaluation usually is undertaken during the initial, or design, phase of a project. However, it also can be helpful for assessing the ongoing activities of an established program. Formative may include process and impact studies. Typically, the findings from formative evaluations are provided as feedback to the programs evaluated. While summative evaluations answer questions about program quality and impact for the purposes of accountability and decision making. They are conducted at a synthesis of process and impact or outcome evaluation components.

Hattie and Timperley (2007) state that both formative and summative evaluations outline key questions which they seek to answer and these are that; Summative evaluations address the second set of issues. They look at what a project has actually accomplished in terms of its stated goals. In doing so, there are key questions that are considered; the first question is to find out the extent to which the project will meet its overall goals and objectives. This is asked to make judgements about a program, to improve its effectiveness and to inform decisions. Since summative evaluation tends to provide a package of results that are used to assess whether a program works or not.

Moss (2013) highlights another key question which is to find out the impact the project has on the lives of its beneficiaries. Consulting beneficiaries enables the project to gain a greater understanding from communities of their views, capabilities, needs and concerns. Since these may change during the life span of the project, it is important to consult beneficiaries throughout the project life.

Besides that, the other key question is to find out if the project was equally effective for all beneficiaries. It is important to assess whether the intervention or project has made a difference for the targeted groups. It is also important to find out the components that were most effective. This is an important key question because it is the one which will help the assessor to find out the main reasons and factors leading to the success of the project at hand or the drivers to the success of the project.

Brookhart (2001) emphasizes that it is also important to consider finding out the significant unintended impacts the project had. This is important so that there is no failure in the project and also to help research not to be moved on what is not planned should the problem arise. Your risk management plan should give you a scale to help figure out the of probability. There is a guarantee on the project that even the simplest activity can turn into unexpected problem. Anything might occur and change the outcome of a project activity.

According Sadler (1989) other key question is to consider if the project replicable. This is important because it reduces the chances of the research being influenced by section bias or other dodgy elements. It also important because replicability also keeps research honest and can give readers confidence. Summative evaluation seeks to find out if the project is sustainable. It is important because the researcher will focus at integrating economic, environmental and social aspects in the content and management of projects. Not only that, it also important to consider the full life-cycle of the project.

Formative evaluation as earlier stated is process oriented and involves a systematic collection of information to assist in decision-making during the planning or implementation stages of a program. Hence the key questions to this are to find out the extent to which the activities and strategies correspond with those presented in the plan and if they are not in harmony, why are there changes and if the changes are justified. This is important for researchers because it will give them connection and will be able to follow through and if they are not in harmony the researcher will be able to find out the reason and how to strategize so that it doesn’t fail (Heritage, 2010).

Shepard (2000) adds that, it is key also because you will be able to tell what has changed and if the changes are justified. In short it will help one have a systematic collection of information to assist in decision-making during implementation. Apart from that, the other key question is to find out the extent to which the project will follow the timeline presented in the work plan. This is important in evaluation as it will help researchers know how far the project has been done as it is presented in the work plan so that if they are not done on time they find the factors that have contributed to that.

According to William (2010) the other questions that can be considered are as follows; to find out if activities are carried out by appropriate personnel. This is important because if the project is conducted by people who are not competent the chances of failing is high hence the need to consider the personnel doing the project. To consider the extent project actual costs if it is in line with initial budget allocations. This is important because in some governments some contractor present a bigger budget on a small project which doesn’t tally hence the need to look at the actual cost of the project in relation to the initial budget allocation so that there is no misappropriate of funds.

To consider the extent to which the project is moving towards the anticipated goals and objectives of the project is also another key question. This is important because it will help the people monitoring to have a clear picture and see to it that it does not fail and have information on goals of a certain project. Moreover, to consider the activities or strategies if they are more effective in moving toward achieving the goals and objectives. This will help planner because the activities and involvement of contractors will help them work on a project on time if strategies and activities are not considered they project can fail. Not only that, if the people working on a project are not effective the project cannot be done on time hence to put that into consideration (William, 2010).

Furthermore, the other key questions to consider are; to look at whether the barriers were identified, how and to what extent they were dealt with. This is important because it can help to foster development and improvement within an ongoing activity. Moreover, the main strengths and weaknesses of the project are also important to be put into consideration. In considering the strength and weaknesses one will be able to judge the worth of a program while the program activities are forming.

Waltman and Frisbie (1994) state that, the other key questions that may seek answers are; considering thinking of the extent the beneficiaries of the project are active in decision-making and implementation. This increases the voice of ownership of beneficiaries hence the need to consider the activeness in decision making and implementation and also help in improve accountability. To look at the extent to which the project beneficiaries have access to services provided by the project and the obstacles. This goes beyond having consultations with primary stakeholders on predefined indicators or asking them to provide information or feedback. This increases the voice of ownership of primary stakeholders.

It is cardinal to take into considerations that for each of the questions highlighted above, both quantitative (data expressed in numbers) and qualitative data (data expressed in narratives or words) are useful in the whole process of evaluation.

Evaluation models are the different ways to find out and prove if the interventions made or project has made a difference at all. Evaluation models differ in the extent to which they are able to identify and prove a projects outcomes or the impact and link them with project interventions by making a causal link between the two. Some models are more likely to generate reliable results that could establish a causal link than others. In evaluation terms this is called scientific rigor or validity of the model. There are basically many types of evaluation models. Therefore, this section intends to explain the main limitations of the commonly used model of evaluation which is the pretest-posttest model.

According to Allen and Nimon (2007) the pretest-posttest model of evaluation is a common technique for capturing change in a program. In this mode, a pretest is given to participants prior to starting the program to measure the variables of interest, the program (or intervention) is implemented, and then a posttest is administered to measure the same variables of interest again. With measurements being collected at the beginning and end of the program, program effects are often revealed by calculating the differences between the two measures.

According to Rockwell and Kohn (1989) the limitations to pretest-posttest model of evaluation is that it lacks scientific rigor because there are many biases that might take place between the pretest and the posttest that could affect the results, and therefore, weaken the direct link between project interventions and project outcomes or impact. Other limitations may include the difficulty, or impossibility, of locating and maintaining an adequate comparison group. As is the case with many community-based programs, some organizations simply lack the time and resources necessary to conduct pretest-posttest evaluations.

Pratt et al. (2000) add that, for pretest-posttest comparisons to be meaningful, participants must be present when the program begins and ends, yet attrition and sporadic attendance are common among community education programs. Another important limitation is that even when complete pretest-posttest information is obtained, actual changes in attitudes, behaviors, or skills may not be evidenced if participants overestimate their attitudes, behaviors, or skills on the pretest.

Howard (1980) states that, overestimation on a pretest is likely if participants do not have a clear understanding of the attitudes, behaviors, or skills a program is targeting. Often, it is the participant’s lack of knowledge or performance in certain areas that warrant a program intervention in the first place. Participating in the program may show participants they actually knew much less than they originally thought when they completed the pretest. When this is the case, pretest-posttest comparisons are misleading because participants have a different frame of reference after participating in the program than they did before.

Moreover, the following is an example of the misleading effects of response shift bias. A program is developed to teach youth to improve their listening skills. On the pretest they are asked if they actively listen to others when others are speaking. The measurement scale ranges from 1 (never) to 5 (always). One youth perceives herself as someone who usually listens to others and she scores herself at a 4 (“not always but usually”). For the next four months she learns about listening skills and how to actively listen.

At the end of the program she realizes that although she has begun using many of the skills she has learned and is a much better listener than before, she is still not a master listener. She now takes the posttest and scores herself at a 4 (“not always but usually”). Her pretest score was 4 and her posttest score is also 4. In a pretest-posttest design it would appear that her listening skills did not change and that the program was ineffective, when in reality the program probably was effective. What changed was her point of reference. If this youth could re-take the pretest, perhaps she would rate herself differently; however, in a traditional pretest-posttest design this is not an option (Howard, 1980).

According to Howard (1979) the other limitation is time constraints; more time is required to create solid items that assess factual knowledge than is needed to capture perceptions in a pretest-post-test mode of evaluation. Apart from that, program delivery is another limitation; it takes time to administer both a pretest and posttest questionnaire. Therefore, in short educational activities, it may not be worth the time necessary to conduct both.

Furthermore, there are attendance concerns in the sense that meaningful pretest-posttest comparisons require that participants be present at the start and end of the program; however, consistent attendance can be difficult to obtain, especially among high-risk groups. Without pairs of responses (a pretest and a posttest), comparisons cannot be made and the available data are reduced (Pratt et al., 2000).

Above all, measurement error through response-shift bias which in tells that; meaningful pretest-posttest comparisons require a participant to use the same frame of reference to measure himself against; when this is missing, it makes the pretest-posttest comparison invalid. There is also the potential for the limited information a participant has prior to the program to affect his ability to properly judge baseline functioning (Allen and Nimon, 2007).

The other problem is that it improves [internal validity](https://explorable.com/internal-validity) but sacrifices [external validity](https://explorable.com/external-validity) to do so. There is no way of judging whether the process of pre-testing actually influenced the results because there is no baseline measurement against groups that remained completely untreated. For example, children given an educational pretest may be inspired to try a little harder in their lessons, and both groups would outperform children not given a pretest, so it becomes difficult to [generalize](https://explorable.com/what-is-generalization) the results to encompass all children (Rockwell and Kohn, 1989).

Lastly, the other major problem which afflicts many sociological and educational research programs for instance is that it is impossible and unethical to isolate all of the participants completely. With pretest-posttest model of evaluation if two groups of children attend the same school, it is reasonable to assume that they mix outside of lessons and share ideas, potentially contaminating the results. On the other hand, if the children are drawn from different schools to prevent this, the chance of [selection bias](https://explorable.com/sampling-error) arises, because randomization is not possible (Howard, 1979).

In conclusion, all good evaluation requires selecting the appropriate tools for the particular circumstance. The effort, time, and intensity of any programme should be the main factors when determining the quality and rigor of its evaluation. Regardless of which evaluation strategy one chooses, it is important to consider the pros and cons for each circumstance, as well as what information would be most likely to be captured. Then, using thoughtful and intentional craftsmanship, construct an instrument that allows one to capture the change created by their programming effort. It is for this reason that using a pretest-posttest format is advised when one has the time and wants to measure true knowledge change. However, it is advisable to use a retrospective pretest when one is measuring perceptions of knowledge and when time or other factors limit the ability to use a true pretest-posttest.

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