Evaluating energy efficiency campaigns targeted at children: towards a best practices methodology

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Abstract

This paper provides a brief overview of an ongoing SAVE-project aiming to craft a best practices guide for energy efficiency campaigns and projects targeting children.

The paper furthermore discusses the various methods, which help to establish a best practice as well as outlines possible success factors within the field of energy efficiency, presents evaluation approaches, frameworks, and research paradigms that can potentially be applied. The SAVE-project is due to be finalised in 2004.

Introduction

Numerous projects have been executed in Europe, aiming at influencing children to save energy. Within this framework, the projects have traditionally been quite differentiated, both in terms of and media channel arena (where is learning taking place – at home or at school? - and where are the children asked to save? At home, at school or elsewhere?). A majority of the campaigns (often referred to as "projects" and even "programmes") tends to use conventional classroom approaches, employing the school as an arena and teachers or dedicated persons as educators. Yet other campaigns use a variety of non-school channels such as the Internet, TV and magazines, or a combination of channels. A number of pedagogical approaches are employed.

Little or no research has been conducted to investigate the relative success of the campaigns; evaluation efforts have mostly been done on a case-by-case basis. An ongoing SAVE-project, called Kids4Energy for short, is currently investigating this research question, in part funded by the European Commission.

The SAVE-project is based on the assumption that children, as a target group, are particularly interesting for two main reasons; their ability to take the role as opinion leaders at home (in terms of energy efficiency) but also to grow up as environmentally conscious citizens, able and eager to manage their energy resources in a responsible manner. Thus, efforts in addressing this target group should lead to both short- and long term benefits. The project will, when concluded in 2004, provide a best practice guide, made for practitioners, to guide them through the process of planning for, executing and evaluating EE-campaigns targeted at children.

This paper, grounded by the research questions raised in the project, discusses the process of establishing a method to evaluate the projects. The aims, construction and proceedings of the SAVE-project (Kids4Energy) will also be outlined.

Kids4Energy

Kids4Energy, or "Evaluation of EE Information, Education and Training programmes, Targeted at Children and Development of Best Practice" aims at providing the means to make construct better EE-campaigns or projects targeting Children. The main output will become a Best Practices Guide (BPG), targeting practitioners and organisers, to assist them planning, executing and evaluating the campaigns. The Kids4Energy-project is funded by the EU's

SAVE-programme with ten participating partners and a supporting expert- and coordination team.

The project consists of four overlapping phases: 1. Identification phase, 2. Success indicator phase, 3. Development of best practice phase and finally, dissemination phase. This paper will mainly focus on phase three.

Methodology

This chapter outlines the process of identifying and describing a best practice to be used in a Best Practice Guide (BPG). The methodology section describes the various choices and options available when evaluating campaigns and projects in order to craft the BPG.

EVALUATION APPROACHES

No precise methodology has, to the awareness of the author, been crafted for the purpose of evaluating these types of projects with a high level of diversity. The diversity in terms of channels, teaching approaches, overall goals, funding sources, not to mention success criteria and a pool of various evaluation techniques makes the comparison even more troublesome than comparing apples and oranges.

Evaluation in this context is primarily used to investigate whether outlined project targets have been reached and why/why not. If a target was not outlined for the project to be evaluated, then the evaluation may examine what the project has achieved in relation to the resources invested.

Impact evaluation

Investigates the cause-impact relation. It investigates the consequences of the project. What output, outcome and benefits have been obtained? Impacts include negative and positive impacts, wanted and unwanted impacts.

Often it is of interest to establish output, outcome and benefits relative to the resources invested in the project. These subcategories of the impact evaluation are termed:

A cost-efficiency evaluation

A cost-efficiency evaluation compares the output to the cost. Output may be measured in a number of units such as pupils submitted to education, pupils remembering the EE message after a given time, to which degree do the pupils accept the problem perceived by the advocacy group as theirs, etc.

A cost-effectiveness evaluation

A cost-effectiveness evaluation compares the outcome to the cost. Outcome is firstly measured in realised energy savings (kWh or Joule) or realised CO_2-emissions savings. However, there may also exist other reasons for implementing projects than energy savings, namely improved living conditions, improved economic situation of the individual family, improved contact between parents and children, etc. Energy savings and CO_2-savings can be used to compare projects while the other parameters can be very site specific.

A cost-benefit evaluation

A cost-benefit evaluation compares the benefits to the cost. The benefits of a project are firstly the value of avoided CO_2-emissions. As mentioned above in relation to outcome, other benefits might also be relevant to assess.

Process evaluation

Process evaluation attempts an analysis of the entire project from idea to decision, implementation and the reaction of the target group. What contributed positively and negatively to the achieved impact?

Four examples of process evaluation questions:

- Could we have chosen another and more appropriate type of project to fulfil our purpose and targets (how did we come from goal to choice of project)?
- Does the project employ a suitable and effective design? Three main approaches/methods are commonly used, and it might be helpful to evaluate whether the method is the most suitable for the situation: *Engineering* solutions, where technology or innovation can remedy the problem, *enforcement*, which typically involves the passage of laws and rules, and *education*, which involves modifying knowledge, attitudes, beliefs, or behaviour.
- What were the critical factors within and surrounding the project in achieving the output?
- How come the high output (high quality training of many pupils lead to interest and action) didn't lead to a high outcome (energy savings)?

SUCCESS INDICATORS

Success can be seen as the ratio of achievements divided by expectations (Salmon & Murray-Johnson). In order to evaluate level of success, one or more success criteria need to be established. Possible success indicators to be determined through evaluation are:

Related to organisation:

- Satisfaction of participants.
- Satisfaction of stakeholders.

Related to output:

- Quality rating of material and education, such as reader friendliness, layout, accessibility of the materials.
- Children's impressions.
- Parents' impressions.
- Number of children taught / exposed.
- Number of teachers and organisations interested in receiving material and education.
- Number of children who remember the project message (after certain intervals of time).
- Number of children who act upon the message.
- Number of parents who act upon the message.

Related to outcome:

It is doubtful that real energy savings can be measured as attributable to the EE IET projects. On the other hand this does not mean that EE IET projects do not have any energy saving impact.

Some outcomes (and benefits) may be hard to quantify (better indoor climate and health, better family economy) but they are still critical to the projects.

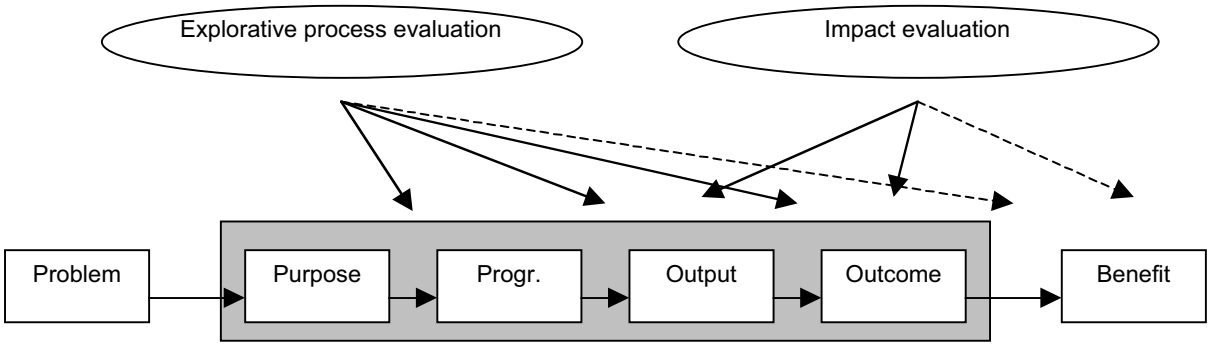

Figure 1.

The success indicators may be grouped according to main types of projects when comparing the actual findings with other projects. Such categories could for example be: Energy subject, Age group, Project type (education/information, training/action based), Local context, Marketing strategy (internet, TV/media, direct contact), and Project duration.

When investigating success/failure, it is important to try and identify the circumstances leading to that success/failure, i.e. how does the context influence the outcome of the project. Such an understanding is important when aiming to improve the project or decide on whether or not to engage in a project.

EVALUATION FRAMEWORK

The evaluation framework in this study will consist of the following:

- Purpose: Evaluation of choice of project and target group.
- Project: Evaluation of the project design and implementation.
- Output: Exposure, attitude change and/or behaviour change.
- Outcome: Derived energy savings or CO_2-emissions savings (see for an overview Figure 1).

When evaluating projects for BPG-purposes, process and impact evaluation will be conducted in phases where this is possible, see Figure 1. That is, the *problem* (too high energy consumption) is given and it is not meaningful to scrutinise this early stage. It is possible to evaluate the *benefit* from an outcome (e.g. lower carbon dioxide emissions mitigate the greenhouse effect and consequently make the weather conditions more stable). However, in terms of evaluating EE campaigns targeted at children, possible end-of-the-line benefits will be only weakly related to the campaigns/projects, and thus, insignificant and irrelevant to examine. The stippled line indicates what is theoretically possible to evaluate, although not included as a causal relationship in the Kids4Energy project.

CHOOSING A FORMAT FOR THE BPG

One of the first objectives in this project was to agree upon a format, or framework, to evaluate the projects. In this process, two main paradigms were singled out: An impact evaluation benchmark and a recipe approach, each presenting a fundamentally different way of examining the EE projects.

The process of choosing the approaches was driven by a reader consideration. The best practices will be presented in a best practices guidebook, targeting EE agencies, municipals and other middle level actors. The guidebook is not targeting individual teachers for the purpose of implementing the project in a single class, but is mainly focused on a higher level. With the target group in mind, the majority of the pan-European consortium proposed an easy-to-read guidebook (see Recipe), systematically organised by practical topics that relates to the process of making the projects.

Impact evaluation benchmark format

An impact evaluation benchmark is a methodical overview. Rather than proposing concrete actions to take, this approach outlines ways to compare success criteria, methods and techniques. For example, what would be better when evaluating TV-mediated projects, ratings or testimonies. The two different methods would offer different types of knowledge, referring to different aspects of the project. A discussion of the pro's and con's would be an example of this format.

This is a somewhat theoretical approach comparing non-case-specific concepts rather than telling the readers what to do. This would be a more general resource compared to the "recipe version". Because this guide talks of concepts in general terms rather than suggesting specific actions, it would ensure a more objective and general presentation. The outcome would be harder to question. The disadvantage would be that the tools might be too general to employ and not precise enough.

Recipe format

Recipe refers to a cookbook approach well organised by steps of the process and types of projects and other critical parameters. By using this approach, the readers will be able to look up steps of the process or type of project and follow a set of recommendations based on the evaluation. The guide would include the whole process from how to attract investors to how to evaluate the project and which success-criteria are most applicable. This approach is more similar to a traditional handbook. On one hand, the disadvantage is the absolute case-specific recommendations that do not

necessarily take into consideration all the differences between projects, but to a greater extent rely on fewer most-preferred cases and practical suggestions from the consortium members. This format would be more dogmatic and less flexible and open than the benchmarking format. On the other hand, this step-by-step format would be an easier read and probably more hands-on, and above all, useful to the reader.

TOWARDS A BEST PRACTICES METHODOLOGY

The project consortium and expert team is currently in the process of evaluating projects. Conclusions as to what constitutes a best practice are not yet drawn. The consortium chose to pursue the cookbook approach as this would provide a more user-friendly (and thus efficient) guide. In addition to the structure outlined above, the consortium has intentions of integrating "hints and tips", and making use of all practical experience from all countries. The project should be completed by October 2004

Conclusion

This paper discusses the various methods in which helps to establish a best practice guide within the SAVE-project called Kids4energy. The paper discusses evaluation approaches, research paradigms and outlines possible success factors. In sum, this should help to make this process visible, and perhaps disseminate some ideas for similar projects. A conclusion of what is a "best practice" should be expected to be available by Fall 2004.

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