Exploring the learning potential of evaluation research by a review of 17 impact studies

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Organizations find it important to evaluate the yield of training and development efforts in terms of work results and impact for the organization. Although the aim of impact studies is to learn more about the carry-over effects of learning interventions, it is possible that such an investigation itself carries learning potential. The current research explores this particular side-effect of evaluation research. The method consists of an analysis of 17 impact studies in 11 organizations. All impact studies have been carried out following similar steps that stem from the success case method. Analysis of the meaningful moments during these investigations shows that learning takes place at various points in time of the research process. In particular, learning takes place during the construction of impact maps, during in-depth interviews and during the end presentation. Next to the researcher, various stakeholders are involved in these moments. Using the learning potential of this generative moments is in particular possible when the people involved work on a concrete product.

Keywords: Assessment and evaluation; Research-based learning; Training and Development; Workplace learning

Introduction

As long as learning interventions have been designed, the importance of evaluating them is addressed (see for instance Romiszowski, 1981). The generic model for educational design (Plomp, 1982) prescribes evaluation to take place after the realization of a learning intervention. Although the attention for evaluation as such is nothing new, it seems that there is a shift in the focus of organizations with respect to evaluation. For long, organizations conducted evaluation with the main aim to learn more about the experience of participants, and to determine training effects. More recently, this attention shifted to evaluation studies that are able to determine impact on organizational goals (Verdonschot, 2016). The model of Kirkpatrick and Kirkpatrick (2006) consists of four levels of evaluation and is often used as a framework to execute evaluation research in practice. It seems that the attention is moving from the first two levels of this evaluation model, reaction and learning, to the last two levels: behavior and results (Kirkpatrick & Kirkpatrick, 2006). There are three developments that gave rise to this shift.

First, more and more organizations are interested in the so-called performance-oriented HRD (Human Resource Development) (Schramade, 2011). This causes organizations to emphasize the business results they want to achieve rather than the effects they expect from for instance training. Second, the recent attention for evaluation studies on the level of performance and impact is related to the shift from offering training to facilitating learning (Marsick & Watkins, 1990). Since the effect of training programs in terms of transfer to the workplace were disappointing (Baldwin & Ford, 1988; Burke & Baldwin, 1999), organizations focus more on the learning potential of the workplace. This causes them to organize different types of learning interventions next to, or, instead of training. Similarly, the focus of evaluation moves from tracking down learning experiences to understanding what employees start to do differently in their day-to-day work, and the benefits of these new actions for the organization. Third, the increased attention and openness for learning from mistakes might also contribute to the attention for evaluation research with a focus on performance. It is known that learning from mistakes is essential for learning, and at the same time it is known that it is difficult to realize this in practice (see for instance Bauer & Harteis, 2012; Edmundson, 1996). Recently, learning from mistakes gets new attention, both in research (e.g. Den Hollander, 2017; Frese & Keith, 2015) and in society (e.g. Tavris & Aronson, 2015). This might have led to a more open mind to reflect on results of evaluation studies. Rather than perceiving the outcomes as a judgement in terms of 'good' or 'bad', the outcomes can be perceived as an opportunity for learning. This focus can evoke evaluation studies that addresses behavior of employees and their managers in day-to-day practice. In fact, a non-judgmental approach can help to further develop the work environment as a stimulating learning environment and makes it attractive for the stakeholders in the work environment to take on a role in the evaluation study.

Now that the attention of learning and development professionals in organizations shifts from studies that evaluate reaction and learning to studies that focus on behavior and results, it is likely that recommendations resulting from these studies have a new focus too. After all, the intention of acquiring knowledge on these levels is to initiate actions in order to improve learning interventions, and in order to be able to better facilitate learning in the work context. Indeed, in evaluation research, what counts is the extent to which the evaluation leads to modified policies, programs and practices (Rossi, Freeman & Lipsey, 1999; Verloop and van der Schoot, 1995). Evaluation studies that focus on learner experiences and competences, are likely to come up with recommendations about the organization of the learning interventions, and the instructional design of these interventions. In the same line, evaluation studies that focus on work behavior and organizational impact are likely to result in advice that refers to the support that employees experience in their workplace for experimenting with new behavior, and to the organizational context that should foster the emergence of new practices. Putting into practice these recommendations requires different people in the organization to collaborate. Where tips on the instructional or organizational design of learning interventions can be put into practice by employees responsible for learning, advice with respect to the work environment and the organization as a whole, needs to be taken up by people who work in line functions, management and learning and development staff. This makes evaluation not merely the domain of learning and development professionals, but rather that of various stakeholders in the organization.

In order to increase the chance of the evaluation study to have an impact on the actions and thinking of these stakeholders, the present research explores the potential the evaluation process itself carries to connect these different stakeholders and to stimulate learning. The idea behind this is that the more the different stages of an evaluation study generate energy, new ideas, and learning opportunities, the earlier an evaluation study creates 'movement' in the organization. And, finally, the idea is that the sooner a study leads to learning and action in practice, the easier it is to pursue these actions after the evaluation study has finished. By being intentional about learning throughout the evaluation process, the evaluation can gain impact (Coghlan, Preskill, Catsambas, 2003). The present study therefore aims to explore the learning potential of evaluation research conducted in practice.

Research question

The following research question is central: *What is the extent to which evaluation studies that focus on work behavior and organizational impact carry learning potential?*

Relevance of the study

Recently, organizations have more interest in finding out what participants actually apply in their work after a learning intervention, and how this work behavior is related to the organizational goals. The focus on performance-oriented HRD, on learning interventions at the workplace, and the attention for learning from mistakes contribute to this growing wish to determine carry-over effects of learning interventions in terms of behavior and results. Since evaluators aim to impact the persons who can affect organizational change (Rossi, Freeman & Lipsey, 1999), and since evaluation studies on the level of behavior and impact affect more and various stakeholders, it becomes relevant to know more about the involvement of these stakeholders in the evaluation study. In fact, it seems to be important that the evaluation study is not only carried out properly so that it provides substantive information, but that it also ensures that those involved learn from what works and what does not, and that it gives energy to get started. Furthermore, the yields of evaluation studies that are often stressed are statements on the intrinsic or extrinsic value of a learning intervention (Nieveen & van den Berg, 2001). However, less is known on the value that the evolution process itself carries. Therefore, the present study explores the learning potential that evaluation studies, that include the last two levels of Kirkpatrick and Kirkpatrick (2006), carry. In doing so, the present study connects to other studies that explored the "process-use" of evaluation (e.g. Forss, Rebien & Carlsson, 2002) and empirical research as a learning experience (Gaskell, 2000).

Theoretical framework

This section goes deeper into the two main concepts that the research question addresses. Evaluation studies that focus on work behavior and organizational impact are defined, and so is the learning potential of these studies.

Evaluation studies that focus on work behavior and organizational impact

The present research focuses on evaluation studies in which learning interventions such as a training, a workshop, a leadership trajectory or change intervention are investigated to learn more about their carry-over effect in the workplace and for the organization as a whole. An evaluation method that serves this purpose and that is both pragmatic and thorough is the success case method that is developed by Brinkerhoff (2006). The success case method is a mixed method approach (Creswell, 2009) that combines a short survey with in-depth interviews. An important step in this evaluation method is to design an impact map together with relevant stakeholders (Brinkerhoff & Gill, 1994). An impact map creates a visual depiction of the learning process. It highlights roles, interactions and results that are needed to realize worthwhile business results. One of the elements of this map are the work behaviors that the learning intervention needs to promote. The list with work behaviors is used to create a short survey that helps to trace people who tried several new actions in their work and achieved concrete and worthwhile results by doing so, and people who weren't able to achieve results in their work. Based on their answers participants are divided in sub-categories based on the extent to which they were able to achieve concrete and worthwhile results. In the next stage in-depth interviews take place with participants of all sub-categories. The purpose of this phase is finding out what stories there are to be told about the impact of learning interventions in the daily work of employees who attended the learning intervention. The power of these narratives is that they do not seek to blame, problematize, or judge, but rather open up possibilities and enable to move forward (Swart, 2016). The approach also connects to the idea that it is promising to learn from people who managed to realize behavior change in their work environment, since learning from these success cases can help to develop favorable conditions for others to attain similar results (Coghlan, Preskill, Catsambas, 2003; Cooperrider, Whitney & Stavros, 2003).

The learning potential of evaluation studies

Often, research into learning becomes in itself a learning experience for the participants as well as for the researcher (Gaskell, 2000). Specifically, in evaluation studies this phenomenon has been investigated as 'process-use' of evaluation (Forss, Rebien & Carlsson, 2002). In evaluation research, a lot of actions take place on the boundaries of functions. For instance, between people with staff functions who often initiate evaluation studies and can use the results to improve learning interventions, and people with line functions who are participants in the evaluation and ideally can use the results to improve their practice. These boundaries carry learning potential (Akkerman & Bakker, 2012).

A way to track down these process yields of research is to look for generative moments during the research process. Carlsen and Dutton (2011) describe generative moments as moments that vitalize, and create energy, and give room to new ideas to emerge. These

generative moments can be regarded as process yields of an investigation that can stimulate the development of people involved. For the present study we explore the learning potential by tracking down generative moments that occurred during the evaluation studies.

Refined research questions

Based on the theoretical framework the following sub questions are formulated in order to answer the main question:

1) What generative moments take place during evaluation studies that focus on work behavior and organizational impact?
2) What characterizes these moments in terms of the moment in time they take place and the persons who are involved?
3) What is the extent to which these moments are followed up in the organization after the evaluation study has finished?

Research design

The study uses 17 impact studies that were carried out in 11 different organizations in the period Dec 2014 - Oct 2018. These impact studies evaluated the impact of professional training, leadership trajectories and inspirational workshops. All impact studies used the success case method developed by Brinkerhoff (2006) to be able to assess the impact. The studies were carried out by a group of researchers who had biweekly meetings to discuss their progress and to design next steps. The research group's way of working resembles that of a community of practice (Lave & Wenger, 1991). In order to answer the research questions a review took place of 1) the conversations during the biweekly meetings of the research team; 2) the research reports of each study; 3) observations of the final presentations; 4) interviews with initiators of the impact studies several months after the evaluation study. Table 1 gives an overview of the 17 impact studies, and the data that was available for each of the studies.

Procedure

In order to answer the research questions an overview was made of generative moments that took place during the execution of the 17 impact studies. Initially, the researcher reconstructed 25 generative moments. This list was sent via e-mail to the 15 researchers who were involved in the impact studies to validate these moments. Most researchers responded to this request. Moments of 12 of the 17 impact studies were validated in this way. The researchers involved recognized all the moments that were listed. They provided some additions or clarifications for some of these moments, and they added descriptions of new moments. The end result is a list of 42 generative moments. Table 2 shows several examples of generative moments.

Additionally, four interviews were held with four stakeholders who were involved in one of the impact studies. The interviews were conducted by a student researcher that did her internship on the topic of evaluation research. She did the interviews via telephone and focused on questions that the respondents had, several months after the impact study was

finished. Reports of these conversations were made and sent back to the interviewees for a member check (Merriam, 1988).

Analysis

A matrix was developed to analyze the generative moments (Miles & Huberman, 1994). Each row displays one of the 42 generative moments. With help of the research reports the activities were listed that were recurrent in the different impact studies. The columns display these research activities. The columns also show who could be involved in the generative moments.

With respect to the interview reports, an inductive analysis of recurring themes took place.

Table 2: Examples of generative moments

No	Quote of the researcher involved
#3	*"I remember that during the interviews with some of the participants, generative moments emerged. This happened while looking back upon the coaching sessions with help of the questions that I prepared with help of Brinkerhoff's book. With several people this led to new ideas on how they could go on with things that they learned in the coaching."*
#22	*"I clearly remember that working on the impact map together with the trainers was an eye-opener for them. I think because they found out that they never had thought about these things. Now we had a conversation on what should the training yield, and what concrete work behavior do I want to see after the training. Especially the latter was new."*
#34	*"The presentation definitely was a generative moment! That was a very special moment with 'the whole system' in the room. Various people from the organization involved in absenteeism, with each a different perspective, were there. Working on the posters to collect new ideas was very nice. When we looked at the posters of the two groups at the end of the meeting, we saw that they developed similar ideas. That seemed to be a validation of this new direction. We also wrote a blog about this moment."*
#42	*"During the intake for the impact study I had to give a presentation for the members of the board. In total, there were six of them who attended the meeting. My presentation triggered a conversation about the added value of the impact study. I wanted to respond to this, but the general manager himself already did. He started to explain the possible added value of the proposed evaluation research. What started as questions-and-answers turned into a fruitful and nice conversation."*

Table 1: Overview of the evaluation studies and the data that was available per study

Impact study	Type of learning intervention that was central in this evaluation study	Organization in which this evaluation study took place	Data that was available for this study			
			Conversations during the biweekly meetings of the community of impact researchers	Research report of the impact study	Observations of the final presentations	Interview with the initiator of the impact study several months after the study
1	Leadership trajectory	School for vocational education	✓	✓	✓	
2	Leadership trajectory	Organization that provides care for people with disabilities	✓	✓		
3	Leadership trajectory	Organization that provides care for people with disabilities		✓		
4	Leadership trajectory	Technical research center	✓	✓	✓	
5	Inspirational workshop	Organization for youth care	✓	✓	✓	
6	Leadership trajectory	International retail organization	✓	✓	✓	
7	Inspirational workshop on curiosity	Project organization	✓	✓	✓	✓
8	Leadership trajectory	Organization on industrial safety	✓	✓	✓	✓
9	Reflective training on mindfulness	Municipality	✓	✓	✓	✓
10	Training for secretaries	Municipality	✓	✓	✓	
11	Training for professionals to learn to recognize sexual abuse	Organization for youth care	✓	✓	✓	✓
12	Training for professionals to learn to deal with emotion and aggression	Organization for youth care	✓	✓	✓	
13	Serious Game that aims to improve collaboration between different departments	Municipality	✓	✓	✓	
14	Training for professionals to learn to deal with emotion and aggression	Municipality	✓	✓	✓	
15	Training for managers to learn to deal with absenteeism	Municipality	✓	✓	✓	
16	Short leadership trajectory	Governmental learning and development institution	✓	✓	✓	
17	Leadership trajectory	Municipality	✓	✓	✓	

Findings

Table 3 shows the results of the analysis of the generative moments. The findings that emerge from this matrix, and the findings that are taken from the interviews, are listed below:

- In total, 42 generative moments were tracked down. These moments took place during 16 of the 17 impact studies.
- One generative moment arose from a predicament. The other 41 generative moments had their origin in moments of harmony with not more than minor perturbations.
- Most of the generative moments refer to situations in which the people involved were searching for something. There was an unsolved puzzle, an unanswered question, or a new direction that could be explored. This process of puzzling, searching and generating ideas, created energy.
- Generative moments take place during all phases of the research process: during the intake, during the development of instruments, during data-gathering, analysis and while presenting findings. There are, however, research activities that are more often referred to than others, in the generative moments.
- Most generative moments (14 out of 42) take place during the presentation of the research findings. During these moments, almost always, various stakeholders are present such as the initiator of the impact study, trainers or facilitators of the learning intervention and other stakeholders. An example is generative moment #12: *"The presentation was followed by a design session. In that meeting we also spoke together with the principal about the way we could use the insights from the evaluation study for next year's group. In my evaluation study I found that the participants found it hard to take time for reflection. In our conversation about this, immediately we developed new ideas of how this could get shape."*
- The design of the impact map is an activity in the research process that many generative moments refer to too. In total, 8 of the 42 generative moments refer to the activity of constructing an impact map. Almost all of these moments take place either with the initiator of the impact study on the client side, or with the trainers or facilitators of the learning intervention that was subject of the study. An example is generative moment #38: *"The impact map appeared very useful for our principal in order to find out where the learning program was not completely congruent. This became more and more obvious. There was one piece that they wanted to have in the impact map but that had no place in the learning program yet."*
- Next to this, the in-depth interviews are often referred to in the generative moments. In total, 6 generative moments took place during these one-on-one moments in which the researcher asked questions to a participant of the learning intervention that was subject of the study. An example is generative moment #15: *"The interviews definitely generated energy. It was more than just data gathering. The interviewees showed that they took something out of the conversation themselves. One participant said 'I tried this but did not see results yet' about one work behaviour item. During the interview that person realized that he hadn't tried this again. During the interview he decided to take this up once more."*

- Although these conversations appear to have generative qualities, writing the interview report apparently does not easily possess this quality. In fact, none of the generative moments refer to this activity.

- All four initiators of the impact studies on the client side that were interviewed, refer to the difficulties that they experience in turning the recommendations into actions for improvement in action. In particular, the ownership of follow-up is a recurring theme. The interviewees experience that they feel the need to implement concrete actions, but that it is difficult to activate people to take responsiblity. One of the interviewees expresses this as follows: *"Being the HR-manager, I took initiative for this impact study. What I find hard is that by being the one who started this, I also feel the responsibility to do something with the results. This gives me the feeling that responsibility is taken away by the employees themselves and their manager."* Another respondent declares that she experiences impatience because she clearly sees what can be done to improve the training and the work environment. She says: *"[…] and again, nothing happened. Another colleague too, did not take it further. Then I offered to do some things because I started to become impatient."*

- Two of the four initiators that were interviewed, refer to the usefulness of the impact map. Especially the process in order to design an impact map brought them a lot. One of them says: *"We used the impact map in the design phase of a completely different learning intervention, the legal training. Making an impact map helped us to know what the learning intervention should address. [..] We brought everything together in one map. I was typing on my laptop, while it was connected to the beamer. We worked this way three times for one morning."*

Table 3: Analysis of the generative moments

No	During which research activities do generative moments take place?										Next to the researcher, who is involved in this generative moment?			
	Contract conversation with the client	Document study that precedes a first version of the impact map	Discussing and refining the preliminary impact map	Developing and sending out the questionnaire and reminders	Analysis of the questionnaires and interviews	In depth-interviews to track down learning stories	Making the interview report	Discussing the research and writing the research report	Discussing and writing the management summary	Presentation of the research findings	Other researchers	Initiator for the impact study on the client side	Stakeholders (one or more) from the organization	Trainers or facilitators
1			✓								*			
2				✓							*			
3						✓							*	
4										✓	*			
5									✓		*			
6						✓							*	
7										✓	*			
8					✓						*			
9								✓			*			
10										✓	*	*	*	*
11									✓		*			
12										✓	*	*		*
13			✓									*		
14		✓									*			
15						✓							*	
16									✓		*			
17										✓		*	*	
18								✓			*			
19						✓							*	
20										✓	*	*	*	
21			✓								*	*		
22			✓											*
23										✓	*	*	*	*
24			✓											*
25			✓								*	*		
26				✓							*			
27										✓	*	*	*	*
28										✓	*	*	*	*
29										✓				*
30						✓							*	
31					✓						*			
32						✓							*	
33										✓	*	*	*	
34										✓	*	*	*	*
35			✓											*
36								✓			*			
37	✓											*		
38			✓									*		
39										✓		*	*	
40								✓				*		
41										✓	*	*	*	*
42	✓											*	*	

Conclusions

The main question of the study was: *What is the extent to which evaluation studies that focus on work behavior and organizational impact carry learning potential?* In order to be able to answer this question, we investigated generative moments. Below, first the sub questions are answered. The section ends with an answer to the main question and implications for practice.

What generative moments take place during evaluation studies that focus on work behavior and organizational impact?
During the evaluation studies that were part of the present study the researchers experienced moments that gave them energy, new ideas, and opportunities to learn. In total, during 17 impact studies in 11 different organizations, at least 42 generative moments took place.

What characterizes these moments in terms of the moment in time they take place and the persons who are involved?
The generative moments are characterized by a searching process that the people involved, in that moment, collaboratively undertook and that created an energetic atmosphere in which new insights could emerge. In most of these generative moments, the people involved were actively making something. The most generative moments took place during the construction of the impact map, during the in-depth interviews, and during the presentation of the findings of the impact study. This relates to findings of research into innovation that shows that in order to learn, creating something together is an important activity (Verdonschot, 2009). The construction of the impact map refers to a setting in which the researcher collaborated with the initiator of the learning intervention or the facilitators. In this encounter the impact map is the tangible product that is created. Researchers report that they saw that for trainers, facilitators, and internal initiators of learning interventions it was insightful to connect the organization goals, the work behavior and the competences with one another in one line of reasoning. Either because they did not think of the relationship between the learning intervention and organizational goals before, or because they discovered 'leaps' that needed attention. This is in line with findings of Brinkerhoff and Gill (1994) who state that using an impact map helps key players understand how learning interventions can affect the organization and why their roles are necessary to make it work. The in-depth interviews refer to settings in which the researcher and a participant of the learning intervention that is evaluated reflect upon the follow-up actions in the work environment. The story is what is constructed in this encounter. Researchers report that these moments were experienced as reflective conversations by the interviewees. The presentations refer to a setting in which, often, different stakeholders (e.g. learning and development professional, manager of employees who participated in the intervention, trainer or facilitator) were present. The presentation session consisted of a presentation of the findings, followed by an active way of working. For example, a brainstorm on follow-up actions took place, and a creative design session to use the findings of the evaluation study to develop interventions that different stakeholders could initiate. In this meeting often, a tangible product is made too. This product consists of a set of ideas on paper, on flipovers, or on posters.

What is the extent to which these moments are followed up in the organization after the evaluation study has finished?
From the experiences of the interviewees it becomes clear that it is not easy to follow-up the ideas and recommendations that result from an impact study. They find it difficult to involve people who work in line functions to take responsibility. However, several times the activity of impact mapping was mentioned as something that they went to do more often, after the evaluation study was finished. There is one example of someone who applied this method for the design of a new learning intervention together with several stakeholders.

The conclusions with respect to the sub questions help to answer the main question of the research at hand. Based on our investigation we conclude that evaluation studies that aim to measure effects on the level of behaviour and impact, carry learning potential. This learning potential mainly shows itself in small moments of worthwhile interaction during the evaluation process. Several parts of the evaluation process in particular carry learning potential: the moments in which the impact map is designed together with relevant stakeholders, the moments in which in-depth interviews take place, and the moments in which the final presentation took place. Using the learning potential of this generative moments is in particular possible when the people involved work on a concrete product that then serves as a boundary object (Akkerman & Bakker, 2012; Star & Griesemer, 1989) and thus connects stakeholders with different backgrounds. The findings show that generative moments have two types of yields. One yield is the direct gain, the other yield is the *potential* for new actions that the generative moments harbor. The direct gain is reflected in the tangible products that are being made such as the impact map, learning stories and plans. The potential for action is shown in the energy and insights that arise during the moment, and the ideas and plans that are developed that need follow-up action in practice. With respect to the latter we do not know much about the extent to which follow-actions take place. Yet our review shows that it is not always easy to actually follow-up the ideas after the evaluation study.

Implications for further research and for practice

Our review shows that an evaluation study on the level of work behavior and impact has the potential for the people involved to learn from. It is worthwhile to take this into account when designing an evaluation study. In order to favor generative moments to take place, one could consider organizing several moments in which different stakeholders work together on a question, a 'puzzle', and develop a tangible product together. Creating an impact map is a promising activity, just as a collaborative idea generation and design during the presentation of results. Knowing that these moments might harbor generativity, it becomes relevant to think about the people to invite. Who do you want to involve in the learning process that is started by this evaluation study? The answer to this question could motivate the choice that is made for the stakeholders to invite. Interesting would be to further explore what it would mean to shape the analysis of survey and interview results as an activity that several stakeholders could contribute to too.

The follow-up of ideas and insights after the evaluation study appears not to be self-evident. We have planned a new research to learn more about the actions that are undertaken after an evaluation study. The aim is to learn more about the way the 'learning potential' is acted upon in practice. Moreover, the idea is to give voice to the stakeholders within the organization. Especially because the present study described generative moments through the eyes of the researchers and not from the perspective of for instance learning professionals, participants, management and internal or external facilitators of the learning interventions.

Acknowledgements

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