

A Theory-Driven Evaluation Perspective on Mixed Methods Research

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The purpose of this article is to discuss the conceptual framework and strategies used in theory-driven evaluations in relation to mixed methods research and to explore the opportunities and challenges emerging from theory-driven applications. Theory-driven evaluations have frequently applied mixed methods in the past, and these experiences provide some insightful information for future development of mixed methods. In theory-driven evaluations, the application of mixed methods is justified and applied under a conceptual framework called program theory. The conceptual framework of program theory provides a plan and agenda for mixed methods to work collaboratively and de-emphasizes their differences and incompatibilities. Based upon the conceptual framework of program theory, this article provides several strategies for combining qualitative and quantitative methods in theory-driven evaluations. Procedures in applying these strategies are systematically illustrated. Finally, this article discusses challenging issues related to the future development of mixed methods, such as implications of the use of pure versus modified forms of mixed methods and the advocacy of mixed methods research as a "method" paradigm versus a "method use" paradigm.

Mixed methods research is the systematic combination of qualitative and quantitative methods in research or evaluation. There has been a growing interest in this topic (Johnson & Onwuegbuzie, 2004). Advocates have argued that mixed methods can overcome weaknesses of a single (qualitative or quantitative) method (Greene & Caracelli, 1997; Howe, 1988; Johnson & Onwuegbuzie, 2004; Sechrest & Sidana, 1995). Greene and Caracelli (1997) provided the following major justifications for mixed methods: (a) triangulation: combining qualitative and quantitative methods to study the same phenomenon in order to gain convergence and increase validity (Denzin, 1970), (b) compensatory: using strengths of each method to overcome the weaknesses of the other to enrich the study of a phenomenon, and (c) expansion: using each method to obtain a fuller picture of a phenomenon.

Quantitative and qualitative purists, however, view these two approaches as being based upon incompatible premises and techniques, and argue that mixing methods is neither meaningful nor valuable to pursue (Guba, 1990). Johnson and Onwuegbuzie (2004) have argued that there are some commonalities between quantitative and qualitative methods, and mixed methods research can narrow the divide between quantitative and qualitative researchers, enhancing the quality of a study.

So far, many discussions or debates about mixed methods have been concentrated on philosophical or

methodological issues. The discussion or development of mixed methods also can benefit from experiences based on the application of mixed methods in the field. Practical feedback can provide insightful information about strategies used in combining different methods, and the opportunities and challenges faced in such applications. This type of information could energize the future development of mixed methods. Theory-driven evaluations have frequently applied mixed methods in the past (Chen, 1990, 1997, 2005). The purpose of this article is to discuss some practical experiences of using mixed methods in theory-driven evaluations. More specifically, in this article, I will discuss the conceptual framework and strategies used in theory-driven evaluation that apply mixed methods and the opportunities and challenges emerging from such applications.

Application of Mixed Methods in Theory-Driven Evaluation

Quantitative and qualitative methods are based on contrasting assumptions and ideologies about social phenomena and knowledge. In order to avoid being accused of proposing a shotgun marriage, mixed methods research must address not only why mixed methods are needed in a study, but also address how these two approaches or methods can be meaningfully combined in a study while minimizing tensions and conflicts. In theory-driven evaluations, the application of mixed methods is justified and applied under a conceptual framework called program theory. The conceptual framework of program theory (Chen, 1990, 2005) provides a plan and agenda for mixed methods to work collaboratively and de-emphasizes their differences and incompatibilities.

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An analogy to the use of mixed methods in theory-driven evaluation is that of two experts, while equally skilled in their crafts, having very different skills and incompatible views and preferences. Because they have incompatible priorities and standards, it is difficult for them to appreciate the other person's skills and potential contributions, making it challenging to work together to accomplish a task. Working together would be possible, however, if there were a master plan that carefully specified their roles and responsibilities for accomplishing the task. The division of labor provided by the plan would allow two experts to contribute their skills effectively and without changing their own world-views or preferences. The conceptual framework of program theory offers such a plan for theory-driven evaluations to use mixed methods. The conceptual framework of program theory serves as a superordinate goal for quantitative and qualitative methods to pursue jointly (Chen, 1997a). The superordinate goal provides opportunities for qualitative and quantitative methods to use their strengths to make contributions to achieving the common goal and de-emphasizes their differences and incompatibilities. By focusing on the superordinate goal, potential conflicts and tensions of qualitative and quantitative methods are minimized.

The Conceptual Framework of Program Theory

When key stakeholders design or implement an intervention program, they usually have some ideas about how the program should be constructed and why the program is supposed to work. Program theory is defined as a set of explicit and/or implicit assumptions held by stakeholders about what actions are required to solve a social problem and why the problem will respond to these actions (Chen, 2005). A program theory is the stakeholders' theory. However, stakeholders usually do not clearly and systematically document their program theories. In conducting theory-driven evaluations, evaluators need to facilitate stakeholders' clarification of their program theories. Chen (2005) provides a conceptual framework for program theory that is useful in guiding evaluators in facilitating stakeholders' clarification of their program theories. This conceptual framework is illustrated in Figure 1.

Figure 1 indicates that a program theory consists of two models: an action model and a change model. The change model at the bottom of Figure 1 depicts the causal process generated by the program. The change model consists of the following three components: (a) intervention, which refers to a set of program activities that focus on changing the determinants and outcomes; (b) determinants, which refers to leverages or mechanisms that mediate between the intervention and outcomes; and (c) outcomes, which refers to the

anticipated effects of the program. The change model assumes that the implementation of the intervention will affect the determinants, which in turn, will change the outcomes. Solid arrows in the change model represent casual relationships among the components.

The action model on the top of Figure 1 represents a systematic plan for arranging staff, resources, setting, and support organizations in order to reach target populations and provide intervention services. The action model consists of six components: (a) implementing organizations, (b) program implementers, (c) associate organizations and community partners, (d) ecological context, (e) intervention and service delivery protocols, and (f) target population.

Implementing organization. The implementing organization is responsible for organizing staff, allocating resources, and coordinating activities to implement a program. The capability of the organization affects the quality of implementation. Evaluators can assess the capacity of the implementing organization and/or provide information to assist stakeholders in enhancing and ensuring the capacity of the implementing organization.

Program implementers. Program implementers are the people who are responsible for delivering services to clients such as case managers, outreach workers, school teachers, health counselors, and social workers. Evaluators can provide useful information to stakeholders in assessing the recruitment and training process and determining implementers' competencies and commitment.

Associate organizations/community partners. Programs often benefit from or require cooperation or collaboration between their implementing organizations and associate organizations and community partners. Evaluators can provide useful information to stakeholders by assessing whether or not the program has established the needed collaborations.

Ecological context. The ecological context is the portion of the environment that directly interacts with the program. Programs may need support from environments such as social supports and social norms to facilitate program success. Evaluators can provide useful information by assessing whether the program has the needed support from the environment.

Intervention and service delivery protocols. An intervention protocol is a curriculum or prospectus that states the exact nature, content, and activities of the intervention. The service delivery protocol refers to the particular steps to be taken to deliver the intervention in the field.

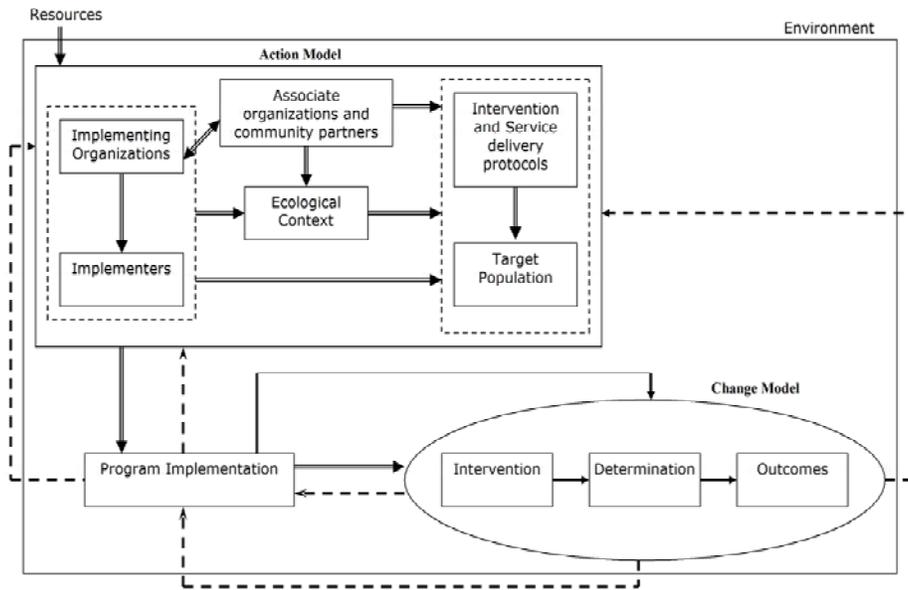


Figure 1. Conceptual Framework of Program Theory (Comprehensive Form)

Target population. The target population is the group of people that the program is intended to serve. The success of a program is affected by the following factors: the presence of well-established eligibility criteria, the feasibility of reaching eligible people and effectively serving them, and the willingness of potential clients to become committed to or cooperative with the program. Evaluators can provide useful information for assessing the adequacy of a program in identifying, screening, and serving target populations.

The double-banded arrows between two components within the action model represent the sequential order between the components. That is, the completion of some component provides the basis for completing the next component. For example, the double banded arrow from “implementing organization” to “implementers” indicates that it is usually a requirement to have a capable implementing organization in place in order to recruit and train implementers adequately.

The action model and change model are closely related to each other and are essential for the success of a program. On the one hand, a change model is needed to justify the selection of an intervention for achieving the goals and/or outcomes and it provides a basis for developing the action model. On the other hand, the action model provides a blueprint to organize program activities and to activate and energize the change model for achieving program goals.

Guided by the conceptual framework of program theory, theory-driven evaluations provide a holistic assessment of a program. Unlike a black-box evaluation that provides, mainly, information about the relationship between an intervention and outcomes, a theory-driven evaluation provides rich information about how and why a program reaches or fails to reach its program goals. The comprehensive information provided by theory-driven evaluations also is useful to stakeholders in meeting their program accountability and improvement needs.

Theory-Driven Evaluations Strategies for Applying Mixed Methods

In theory-driven evaluation, the need for program theory clarification and holistic assessment usually requires the use of mixed methods. Theory-driven evaluations require two primary tasks: (a) facilitating stakeholders in clarifying or developing their program theory, and (b) empirically assessing program theory. The comprehensive scope of theory-driven evaluation involves the sequential combination of these two tasks, and the program theory shows the needs and opportunities for using various strategies for applying mixed methods. Table 1 lists several strategies for using mixed methods in theory-driven evaluations. According to Table 1, program theory clarification can be conducted by either qualitative or quantitative

methods. Empirical assessment can be qualitative, quantitative, or mixed. Different combinations of methods for program theory clarification and for empirical assessment require different strategies. Because qualitative methods have been the popular mode for clarifying stakeholders' views of theory, this paper mainly focuses on the top half of Table 1.

Switch Strategy

In this switch strategy, one first applies qualitative methods to clarify stakeholders' program theory and then uses quantitative methods to assess the program theory. The switch strategy (qualitative then quantitative sequence) also is frequently used in theory-driven outcome evaluation to assess the change model (Chen, 1990). The procedures related to such an application are: (a) intensive interviews, and (b) working groups.

Intensive interviews. In this research mode, an evaluator carries out one-to-one interviews with key stakeholders to facilitate making explicit their assumptions about the major program components, processes, and outcomes. This assists them in explicitly formulating their program theories. This method is often used with small-scale programs.

Working groups. Large-scale programs tend to have many diverse and often vocal stakeholders. In such programs, program theory needs to be developed

in an open and inclusive manner in order to achieve buy-in from the various stakeholder groups. In this case, the working group method is the preferred mode for evaluators to facilitate stakeholders in developing the program theory. A working group consists of representatives from different stakeholder groups. Group members need to include those who are deeply involved in designing the program and other key constituencies whose input will be influential as to the direction the program will take. Evaluators serve the role of facilitator in the meeting.

After the change model has been established, quantitative methods such as experimental and quasi-experimental designs (Shadish, Cook, & Campbell, 2002) and statistical methods such as path analysis or structural equation models (Maruyama, 1998) are often used to assess the model. For example, a comic book containing anti-smoking messages was used as an intervention in a school-based anti-smoking program. Evaluators used intensive interviewing to assist key program stakeholders in clarifying their views of the change model (Chen, Quane, Garland, & Mracin, 1988). According to key program stakeholders, the reason that the comic book was supposed to have an impact on reducing pro-smoking attitudes and behaviors was because the youngsters would keep and read the comic book. Youngsters would be familiar with the characters, including the anti-smoking hero,

Table 1
Strategies for Applying Mixed Methods in Theory-Driven Evaluation

Program Theory Clarification	Empirical Assessment	Strategies
Qualitative	Quantitative	Switch
	Mixed methods for different elements or components	Complementarity
	Mixed methods for including contextual information	Contextual overlaying
	Mixed methods for triangulation	Triangulation
Quantitative	Qualitative	Switch
	Mixed methods for different elements or components	Complementarity
	Mixed methods for including contextual information	Contextual overlaying
	Mixed methods for triangulation	Triangulation

the heroine, and tobacco villains, and they would remember the story about warring between these two camps. The information was expected to increase youngsters' anti-smoking attitudes and reduce their smoking. The change model was assessed by using the non-equivalent comparison-group design and path analysis (Chen et al., 1988).

The switch strategy also can be applied to process evaluation. For example, the action model for a school violence prevention program could be clarified using qualitative methods, and the model might end up including components such as teaching students using a prevention curriculum, student group projects on violence prevention, and parental involvement in prevention activities. Based on the action model, evaluators could use quantitative methods. For example, a survey could be used to ask teachers about their implementation of curricula, students about their participation in group projects, and parents about their participation in various school activities.

In the switch strategy, qualitative and quantitative methods are carried out at different times and in a sequential order. In such an application of mixed methods, there is no requirement to alter or change the components and procedures of either the qualitative methods or the quantitative methods. Qualitative and quantitative methods are applied as intact approaches.

Complementarity Strategy

As shown in Figure 1, the conceptual framework of a program theory consists of multiple components. Some elements within a particular component might require quantitative information and other elements might require qualitative information. The use of quantitative and qualitative methods also varies across the different components. The complementarity strategy is the use of qualitative and quantitative methods to collect different pieces of information for assessing a program theory in order to gain clear understanding of a program. For example, the implementer component might require a quantitative assessment of implementers' competencies, whereas the ecological context component might require having face-to-face interviews with key informants in a community to assess community support for the program. In addition, some elements within a single component might require quantitative assessments, while other elements require qualitative assessments. For example, in the target population component, quantitative data are needed to assess the number of required sessions participated in by the clients, whereas, qualitative methods such as focus group meetings are used to gain an understanding of their views and satisfaction with the program. In the complementarity strategy, a division of labor is used for quantitative and qualitative methods to work and

provide a fuller picture and a better understanding of a program.

Theory-driven process evaluation and integrative process/outcome evaluation are two types of theory-driven evaluations that frequently apply the complementarity strategy.

Theory-driven process evaluation. Theory-driven process evaluation is the comprehensive assessment of the implementation of the action model. As indicated in Figure 1, the action model consists of major components such as the intervention and service delivery protocols, implementing organization, implementers, target population, associated organizations, ecological context, implementation process, and the interrelationships among these components. Depending on the program, some components might need to be assessed by using qualitative methods while others might need the use of quantitative methods. Theory-driven evaluations use qualitative and quantitative methods to collect information on different elements of a program in order to obtain a full understanding of a program.

For example, in a comprehensive evaluation of a workplace smoking policy, Gottlieb, Lovata, Weinstein, Gree, and Eriksen (1992) used quantitative methods, including administration of a survey, to collect social and demographic information about the employees and their overall opinions on policy development, implementation process, compliance, and policy impacts. Qualitative methods such as focus groups, individual interviews, and document review were used to gather information about whether the policy had affected social relationships between smokers and nonsmokers and how infractions had been managed.

Mixed methods also were used in a comprehensive evaluation of the implementation of a school-based anti-drug abuse intervention program (Chen, 1997b). One of the components in the program was a requirement for middle school teachers to serve in a counseling role. In assessing that component, quantitative methods were used to rate teachers' satisfaction with a workshop on drug counseling skills sponsored by the education ministry, whereas qualitative methods were used to probe contextual issues of teachers' experiences with the training and service delivery. The qualitative data indicated that teachers felt they were already overloaded with teaching duties and were concerned about the requirement that they take on the additional counseling roles. These qualitative data helped to explain the quantitative findings which indicated that the teachers were not enthusiastic about the training.

Integrative process/outcome evaluation. An integrative process/outcome evaluation is a systematic combination of process and outcome evaluation in a

single evaluation. Due to the comprehensiveness of this type of evaluation, it usually requires application of both qualitative and quantitative approaches to evaluate the action model and the change model as shown in Figure 1. For example, the evaluation of a garbage reduction program in Taiwan (Chen et al., 1997) was an integrative process/outcome evaluation. Garbage was collected by government sanitation workers on a daily basis in Taiwan. In order to reduce the ever-increasing amount of garbage, a policy of no garbage dumping and no garbage collection on each Tuesday was established for a community to encourage residents' garbage reduction. In the process evaluation, evaluators used field observations to monitor and determine whether the residents were adequately informed about the new policy and whether the sanitation workers were diligently preventing residents from dumping garbage on Tuesdays. Quantitative methods were used to assess the number of residents who violated the policy and received verbal warnings or fines. In the outcome evaluation, a multiple-group interrupted time-series design (Cook & Campbell, 1979) and a survey were used to assess the change model and determine whether the policy encouraged residents to produce less garbage in the community.

In this study, qualitative and quantitative methods were used to collect information on different elements and components of the action model and quantitative methods were used to assess the change model. The combination of qualitative and quantitative data provided a better understanding of how the program theory worked in the field.

Contextual Overlaying Strategy

Evaluative data of a program might not be clear or consistent. The contextual overlaying strategy refers to the use of a method (qualitative or quantitative) to collect contextual information for assisting in interpreting the data or reconciling inconsistent findings provided by the other method (qualitative or quantitative). A popular use of this strategy in theory-driven evaluation is to use qualitative methods to collect contextual information for assisting in the interpretation of quantitative data or reconciling findings. Theory-driven evaluation frequently collects qualitative data on the multiple components of an action model. The qualitative data often provide excellent contextual information for assisting in interpreting the quantitative process or outcome data. For example, in an evaluation of a summer job assistance program for urban youths of poor families, the quantitative data from the attendance records (the intervention protocol component) showed that many of youths failed to show up for work or could not hold on to their jobs in spite of their liking the program. The quantitative findings needed additional contextual

information to help one understand their meaning. The qualitative data collected in the ecological component also might help in interpreting the data. For example, a face-to-face interview of the youths might find that many of the jobs were located far away from the youths' homes. Perhaps they had no reliable transportation to get to work on a regular basis.

The contextual overlaying strategy also can be applied in a sequential format. For example, additional qualitative inquiry could be carried out after completion of a quantitative assessment to assist in making interpretations about the quantitative process or outcome findings. For example, a quantitative outcome evaluation indicated that a free fertilizer-to-farmer program in a developing country failed due to low participation of farmers. A field study was carried out to study the reasons for the program failure. It was found that the problem was in the service delivery protocol. The fertilizers were distributed at local police stations. Unfortunately, farmers and other local residents were afraid of and distrusted the police. They were reluctant to go to police stations to provide their names and other personal information to get the free fertilizers.

Triangulation Assessment Strategy

The triangulation strategy is an application of multiple methods or mixed methods in cross-validating an observed phenomenon. The triangulation strategy can be viewed as a sort of switch strategy except that after the development of the program theory, mixed methods are used to assess the program theory. The triangulation strategy can enhance the validity of an assessment. There are two kinds of triangulation in theory-driven evaluation. The first kind is the multiple qualitative or quantitative method triangulation or simply "multiple methods" triangulation. The second kind is the mixed, qualitative and quantitative, methods triangulation or simply "mixed methods" triangulation. Theory-driven evaluation has used both kinds of triangulation. For example, there has been a great deal of interest in using physicians to deliver HIV prevention messages to HIV-positive patients in clinical settings for the purpose of preventing the spread of HIV. In a process evaluation of the physician-based prevention program (Chen, Grimley, Aban, Waithaka, & Bachmann, 2006), stakeholders wanted to know the fidelity quality of intervention, that is, whether physicians who participated in such a program actually delivered the services (intervention protocol component). This issue was important because HIV prevention was new to the physicians and it was of interest whether they would actually deliver prevention services, even if they agreed to participate in the project. The intervention fidelity was assessed through the use of multiple quantitative methods

triangulation. After each clinical session, the physician was required to file a form documenting whether HIV prevention was delivered according to the protocol and recording the length of time spent discussing HIV prevention with clients. In an exit survey, each patient was interviewed by a research staff member and was asked the same questions. In this way, each patient's report provided a cross-validation of the physician's report on the intervention fidelity. The data from both sources indicated that the services were delivered in the majority of the treatment sessions.

According to stakeholders' program theory, physicians' buy-in to HIV prevention also is an important issue for sustaining the program. The assessment of physicians' buy-in to HIV prevention was based on the use of the mixed methods triangulation strategy. A quantitative assessment of physicians' commitment was carried out by asking physicians to answer a standardized set of survey questions. A qualitative assessment of physicians' commitment included the use of participant observations. Two project coordinators who worked with physicians on a day-to-day basis were asked to keep work diaries documenting physicians' activities and recording their reactions toward the project. These diaries provided rich information on whether the physicians were cooperative or supportive of the intervention in their day-to-day activities. The preliminary qualitative and quantitative data consistently indicated that physicians delivered the prevention services, but their commitment to HIV prevention was not very high during the first six months of the project.

It is interesting to point out that there have been fewer applications of the mixed methods triangulation strategy in outcome evaluation than in process evaluation. One of the major reasons is the costs involved. For example, it is already highly expensive to apply a quantitative method such as a randomized experiment in an outcome evaluation for a program such as providing HIV prevention services to injection drug users. The application of the mixed methods triangulation strategy would mean sending a group of qualitative evaluators into the field for a long time to engage in a prolonged investigation of the effect of the program. The qualitative outcome evaluation could easily be as costly as the quantitative outcome evaluation. The application of the mixed methods triangulation in outcome evaluation could easily double the price of an evaluation in comparison to the use of a single method. This additional cost is a huge barrier for funding agencies and other decision-makers who are deciding if they want to support an outcome evaluation that uses the triangulation strategy. This barrier would be more easily overcome if there were more evidence available to use in convincing funding agencies that the

benefits of such applications offset the costs. One viable alternative would be for mixed methods methodologists to devise innovative mixed methods triangulation strategies for outcome evaluations that are moderately priced. These issues deserve future discussion and investigation.

Challenging Issues for Mixed Methods Evaluation and Research

Pure Versus Modified Form Mixed Methods

When qualitative and quantitative methods are combined into mixed methods research, the two methods can retain their original structures and procedures (pure form) or they might need some adaptations to fit the research and cost situations (modified form). Some implications of pure form versus modified form mixed methods in theory-driven evaluations are discussed next.

Pure form mixed methods. Mixed methods under the switch strategy are of a pure form. In this strategy, qualitative methods are used to facilitate stakeholders' clarification of their program theories. On the other hand, quantitative methods are used to assess the program theory. There is no need to modify the procedures of qualitative and quantitative methods. In other words, qualitative and quantitative methods are used in their pure forms under the switch strategy. Furthermore, the expensive part of an evaluation is the assessment side of data collection. Under this strategy, because qualitative methods do not involve collecting data for assessment, but the quantitative methods do, the methods are not both competing for assessment resources.

Strategies such as complementarity, contextual overlaying, and triangulation require the use of mixed methods for data collection. There are pros and cons for use of these strategies in pure form, mixed methods data collection. One major advantage is that the pure form type of application ensures the original integrity of the qualitative and quantitative methods. However, a major disadvantage for such an application is its expense. Qualitative and quantitative methods compete for evaluation resources. Cost is a big hurdle that might prevent widespread use of methods in their pure forms. The most expensive situation is the application of pure form mixed methods under the triangulation strategy to conduct an outcome evaluation. In a sense, the outcome data, which are highly time-consuming to collect, are independently collected twice to investigate the same phenomenon. Furthermore, it is hoped that the results from qualitative and quantitative data will show convergence. Tensions of interpretation arise when the results from the qualitative and quantitative methods are not convergent. In this situation, the evaluator will need to rely on using the contextual

overlaying strategy for collecting contextual information which should help in reconciling the differences or non-convergence.

Modified form mixed methods. When the budget and/or timeline prohibit the use of pure form, the modified form of mixed methods is a viable alternative. In the modified form, evaluators alter the structure and procedures of the qualitative and/or quantitative methods or use less expensive or less rigorous applications to save money or meet restrictive timelines. Using the complementarity strategy as an example, the modification could be with respect to the qualitative methods, the quantitative methods, or both. For example, on the qualitative methods side, the application of a case study might be carried out as a site visit for a few weeks rather than a rigorous field study lasting several months or years. On the quantitative side, a survey instrument might be used with a hundred clients rather than a thousand, which might have been needed to obtain a large representative sample. In this situation, the modified forms of qualitative or quantitative methods used in the complementarity strategy are weak if they are judged individually from the perspective of a mono-qualitative or a mono-quantitative methodology. The merits of the modified form mixed methods in the complementarity strategy emerge in their totality. In other words, a new set of criteria needs to be established for judging the quality of the modified form of mixed methods evaluation and research. This new set of criteria has not been systematically discussed or developed yet in the literature. Future studies in this area are greatly needed.

Mixed Methods as a "Method" Paradigm or "Method Use" Paradigm?

Mixed methods research indeed has merits as has been demonstrated in the applications of this approach in theory-driven evaluation. An important issue is how to position mixed methods in the arena of research methodology. Advocates of mixed methods have different views on this issue. For example, some might argue for mixed methods as an additional method paradigm to the existing qualitative or quantitative paradigm. Others might claim that mixed methods is a new method paradigm that is superior to the qualitative or quantitative paradigm and perhaps can be used to replace those "outdated" approaches.

Based upon my experiences in applying mixed methods in theory-driven evaluations, I propose another view on this issue. I advocate mixed methods as a "method use" paradigm rather than a "method" paradigm at its current stage of development. To qualify to be a method paradigm, a method tradition must have a body of their own unique research methods for researchers to apply. Qualitative or quantitative methods are qualified to be a "method"

paradigm because they have an existing body of their own unique methods. However, currently this is not true for the mixed methods tradition. To date, the mixed methods tradition does not have its own unique set of methods. Instead, mixed methods research relies on combining qualitative and quantitative methods for carrying out research. It would be questionable for mixed methods to claim that it is a "method" paradigm. Instead, perhaps it would be more justifiable and less controversial at this time to call mixed methods a "method use" paradigm to reflect this current situation. The advantages for such advocacy includes: First, it would reduce unnecessary conflicts between mixed methods advocates and qualitative or quantitative methods advocates. Second, it points out a great need for systematically developing mixed method "use" strategies as well as establishing its own standards and criteria for assessing the method use. Third, it highlights the ultimate goal of mixed methods research as being to develop its own unique methods. When mixed methods research has its own body of unique methods, we could then move mixed methods from a "method use" paradigm to a "method" paradigm.

Summary

This article describes the conceptual framework of program theory used in theory-driven evaluations employing mixed methods. Under this framework, the following strategies have been used to combine systematically qualitative and quantitative methods in an evaluation: (a) switch, (b) complementarity, (c) contextual overlaying, and (d) triangulation. Benefits and challenges in applying these strategies were systematically illustrated. Two types of mixed methods were also distinguished: pure and adapted. Because the mixed methods tradition still lacks its own body of unique methods that distinguish it from qualitative and quantitative methods, the article advocates for mixed methods as a "method use" paradigm rather than a "method" paradigm at the current time.

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References

- Chen, H. T. (1990). *Theory-driven evaluations*. Newbury Park, CA: Sage.
- Chen, H. T. (1997a). Applying mixed methods under the framework of theory-driven evaluations. In J. Greene & V. Caracelli (Eds.), *Advances in mixed methods evaluation: The challenge and benefits of integrating diverse paradigms* (pp. 61-72). San Francisco: Jossey-Bass.

- Chen, H. T. (1997b). Normative evaluation of an anti-drug abuse program. *Evaluation and Program Planning* 12, 195-204.
- Chen, H. T. (2005). *Practical program evaluation: Assessing and improving planning, implementation, and effectiveness*. Thousand Oaks, CA: Sage.
- Chen, H. T., Grimley, D., Aban, C., Waithaka, Y., & Bachmann, L. (2006, in progress). *An evaluation of the implementation of a computer-based, provider-delivered HIV prevention intervention in the primary care setting*. Manuscript in preparation.
- Chen, H.T., Quane, J., Garland, N., & Mracin, P. (1988). Evaluating an anti-smoking program: Diagnostics of underlying causal mechanism. *Evaluation and the Health Professions*, 11, 441-464.
- Cook, T. D., & Campbell, D. T. (1979). *Quasi-experimentation: Design and analysis issues for field settings*. Boston: Houghton Mifflin.
- Denzin, N. K. (1970). *The research act in sociology*. London: Butterworth.
- Gottlieb, N. H., Lovata, C. Y., Weinstein, R., Gree, L. W., & Eriksen, M. P. (1992). The implementation of a restrictive worksite smoking policy in a large decentralized organization. *Health Education Quarterly*, 19(1), 77-100.
- Greene, J., & Caracelli, V. (1997). *Advances in mixed methods evaluation: The challenge and benefits of integrating diverse paradigms*. San Francisco: Jossey-Bass.
- Guba, E. G. (1990). The alternative paradigm dialog. In E. G. Guba (Ed.), *The paradigm dialog* (pp. 17-27). Newbury Park, CA: Sage.
- Howe, K. R. (1988). Against the quantitative qualitative incompatibility thesis or dogmas die hard. *Educational Researcher*, 17(8), 10-16.
- Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, 33(7), 14-26.
- Maruyama, G. M. (1998). *Basics of structural equation modeling*. Thousand Oaks, CA: Sage.
- Sechrest, L., & Sidani, S. (1995). Quantitative and qualitative methods: Is there an alternative? *Evaluation and Program Planning*, 18, 77-87.
- Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Boston: Houghton- Mifflin.