

Scoping Review of the Core Elements of Technical Assistance Models and Frameworks

Carl J. Dunst^{1,*}, Kimberly Annas¹, Helen Wilkie¹ & Deborah W. Hamby¹

¹Orelena Hawks Puckett Institute, 128 South Sterling Street, Morganton 28655, North Carolina, USA

*Correspondence: Orelena Hawks Puckett Institute, 128 South Sterling Street, Morganton 28655, North Carolina, USA. E-mail: cdunst@puckett.org

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Abstract

A review of 25 technical assistance models and frameworks was conducted to identify the core elements of technical assistance practices. The focus of analysis was on generally agreed upon technical assistance practices that were considered essential for planning, implementing and evaluating the effectiveness of technical assistance. Results indicated that there are five major components of technical assistance and 25 different core elements. Analyses of the models and components found considerable variability within and between components in terms of the core elements that are considered most important or essential. Findings were used to define and describe the core elements of the technical assistance models and frameworks and how they can be used in research and evaluation studies to determine if the use of the core elements and practices are related to changes or improvements in program, organizational, or systems practices.

Keywords: technical assistance, models and frameworks, core elements, implications for research

1. Introduction

The term *technical assistance* is used widely in many different fields for describing the types of information sharing, expertise, instruction, training, and other supports for improving program, organization, or system capacity to achieve specific goals, objectives, or outcomes (Fixsen & Blase, 2009; Friesen, Fetterman, Barclay, & Burns, 2017; Gutin, Amico, & Hunguana, 2017; McInerney & Hamilton, 2007). One of the few dictionary definitions of technical assistance refers to the practice only in terms of advice and training pertaining to equipment installation and maintenance (Free Dictionary, 2018). Attempts to locate definitions or descriptions of the term in the published literature is hampered by the fact that *technical assistance* is not a controlled vocabulary term in the Educational Resource Information Center (ERIC) thesaurus, APA Thesaurus of Psychological Index Terms, or ProQuest thesaurus. The term is included in the MEDLINE Medical Subject Heading thesaurus but only in terms of health planning technical assistance.

A number of experts have noted the absence of an operational definition of technical assistance in the published and unpublished literature. Blasé (2009) stated that “There is no generic dictionary definition of technical assistance (TA) nor are there commonly adopted definitions of TA in education or special education” (pp. 1-2, emphasis added). The same is the case in other fields and disciplines (e.g., Godfrey et al., 2002; West, Clapp, Davidson Averill, & Cates, 2012). West et al. (2012), for example, concluded, based on a literature search for a definition of technical assistance, that “We were unable to find a commonly accepted definition of TA in the published literature” (p. 916).

In the absence of a description or operational definition of TA, authors have either proposed working definitions of TA (e.g., West et al., 2012) or have borrowed concepts from related fields to define TA (e.g., Olson, 2018; Ray, Wilson, Wandersman, Meyers, & Katz, 2012). The one concept most often described as a key element of TA is capacity building (e.g., Hunter et al., 2009; Yousafzai et al., 2014) or capacity development (e.g., Sugai, Simonsen, Freeman, & La Salle, 2016). West et al. (2012), for example, defined TA as “A dynamic, capacity-building process for designing or improving the quality, effectiveness, and efficiency of specific programmes, research, services, products, or systems” (pp. 916-917).

1.1. Technical Assistance Core Elements

A working or operational definition, however, is only a first step toward understanding the “make-up” of TA. A second and necessary step is describing or specifying the core elements or key practices of TA. This led us to conduct an extensive literature search for reviews or syntheses of the core elements or practices of TA models or frameworks. We were, however, unable to locate any reviews or syntheses of TA models or frameworks but did locate a number of reviews of related practices (Bertram, Suter, Bruns, & O'Rourke, 2011; Chapman & Moore, 2010; Hodge & Turner, 2016; Leeman et al., 2017; Paulsell, Del Grosso, & Supplee, 2014; Wandersman, Chien, & Katz, 2012).

Two reviews in particular proved particularly informative in terms of the present scoping review (Katz & Wandersman, 2016; Meyers, Durlak, & Wandersman, 2012). Meyers et al. (2012) reviewed the literature with a focus on identifying the critical steps or actions for fostering high quality implementation of a “specific set of [TA] activities to put into practice an activity or program of known dimensions” (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005, p. 5). Katz and Wandersman (2016) reviewed more than 100 research studies where investigators purported to have used TA to promote adoption and use of evidence-based prevention practices. The focus of their review was the particular TA practices that were used in studies of the effectiveness of interventions to affect changes in outcomes of interest. These investigators however concluded that “there is little consensus about the essential features of TA and how to provide TA with quality....[Our] results indicated that an explicit model or organizing framework is rarely used to plan, implement, and/or evaluate TA” (Katz & Wandersman, 2016, p. 417).

1.2 Purpose of the Review

The purpose of the scoping review described in this paper was to identify the core elements of TA models and frameworks in order to identify the practices considered essential for planning, implementing, and evaluating TA. We searched the published and unpublished literature for TA models and frameworks with a focus on sufficiently detailed descriptions of the core elements of TA in education, human services, health care, and related fields. A scoping review is a broad-brushed mapping of the literature on a particular topic (e.g., TA) that aims to identify common themes or approaches to defining or describing the topic of interest (Pham et al., 2014; Tricco et al., 2016). Our review focused on identifying those core elements of TA that are generally considered the practices that make-up TA models and frameworks. The review was considered a first step in identifying which core elements are considered most important in terms of the intended outcomes of TA found in studies and evaluations of the use of TA to affect program, organization, or system change.

Our review was informed by lessons learned in Katz and Wandersman (2016) and Meyers et al. (2012) in terms of the make-up of TA for informing program and organizational quality improvement. The scoping review differed however from these two reviews in several important ways. First, we were primarily interested in identifying the core features of TA models and frameworks that proponents claim are the key practices of TA. Second, we focused on models and frameworks that emphasized practices involving program, organizational, and system change in education, human services, and related fields (health care, pregnancy prevention, etc.). Our primary interest was the core elements of TA that could be used to inform improvements in and the effectiveness of program, organization, or system change to the extent that the core elements were subsequently found to be associated with intended outcomes or benefits. The findings from the review were expected to inform the analysis of studies and evaluations of TA to improve program, organizational, and system-level change practices in order to identify evidence-based core elements.

2. Method

2.1 Search Strategy

TA models and frameworks were located through searches of ERIC, PsycInfo, ProQuest Central, MEDLINE, Google Scholar, Google, and other electronic sources and databases. These were supplemented by searches of the reference sections or bibliographies in all located papers and reports. No limitations were placed on the year of the located papers or type of report (published, unpublished, briefs, conference presentations, etc.).

The searches were conducted using the search terms “technical assistance” AND “model OR framework.” Separate searches were conducted in all of the above referenced electronic databases using either quotation marks or parentheses around the search terms depending on the database. Results were sorted by relevance and copies of all papers, reports, documents, etc. retrieved until no new sources were found which included sufficiently detailed descriptions of TA models or frameworks.

2.2 Inclusion Criteria

Papers and other documents were retained for analysis if there was a description of the make-up of TA or there was a graphical depiction of a TA model or framework. The goal was not an exhaustive list of TA models or frameworks but rather a representative sampling of models or frameworks in education, human services, and related fields.

Papers and documents were excluded if they did not include any description, a reference to, or graphical representation of the make-up of TA; even if the authors stated that their papers or documents included a description of a TA model or framework. The largest number of retrieved papers and other documents that included TA model or framework in the titles, abstracts, or bodies of the reports did not, in fact, include descriptions of the core elements of TA and were excluded from further analysis.

2.3 Method of Analysis

The Katz and Wandersman (2016) and Meyers et al. (2012) papers were used to initially identify different TA tasks, activities, and practices, and to develop a structured coding form for three of the authors to independently review all located papers and reports. The preliminary list of tasks and activities was adapted and changed through an iterative process in order to identify the TA tasks and practices (core elements) of each of the located TA models and frameworks. This entailed a detailed analysis of each paper and report to identify the make-up of the TA models and frameworks (tasks, activities, and practices) and the core elements for each TA model or framework component.

A four-step data coding and analysis process was used to identify and define/describe the core elements of TA models and frameworks. First, 3 of the 4 authors used the structured coding form to independently review each candidate paper and report to identify the make-up of TA of each model and framework. After all the models and frameworks were coded by each author, the information for the core elements was combined and any disagreements resolved through discussions and by each author pointing out where core elements were described in the papers or reports. Second, we searched the PDF or Word versions of all retrieved TA papers and reports using the structured coding form terms as well as related terms to be assured no core elements were missed. Third, we used the information identified in steps one and two to define or describe each core element of the different TA models and frameworks. Fourth, we determined how many TA models and frameworks included each of the core elements by computing the number and percent of the TA models or frameworks that included each core element. The procedure was similar to that used by Katz and Wandersman (2016) for coding and analyzing the presence of different TA elements and features (frames in the investigators' paper) in research studies using TA practices to evaluate the effectiveness of prevention interventions.

2.4 Inter-Rater Agreement

Twelve (48%) of the TA models and frameworks were randomly selected for calculating inter-rater agreement. Agreement was computed as the number of core elements that were rated the same divided by the number of agreements plus nonagreements. The median inter-rater agreement was 94% (Mean = 94%, Range = 88% to 100%).

3. Results

Twenty-five TA models and frameworks were analyzed for the scoping review. These are listed in the appendix. The models and frameworks were described in terms of program, organizational, or systems change in early childhood intervention, education, special education, health care, child welfare, pregnancy prevention, developmental disabilities, and youth development. Care was taken to be sure that the same model or framework was not described by different authors in different papers. In those cases where multiple papers included descriptions of the same model or framework, we included the one paper or report that had the most complete description of the TA model or framework.

3.1 Core Elements

The descriptions of the different tasks, activities, and practices in the TA models and frameworks together with those in Katz and Wandersman (2016) and Meyers et al. (2012) were used to define the core elements of TA as characterized by the model or framework developers. Table 1 shows the definitions and descriptions of the core

Table 1. Core Elements of Technical Assistance (TA) Models and Frameworks

Core Elements	Definitions of Terms
Preparation for Technical Assistance	
1. Needs Assessment	Process for determining the gap between current conditions, practices, or outcomes and desired conditions, practices, or outcomes
2. Decision-Making	Process for involving program staff in identifying, among alternatives, the options or priorities that best fit with the organization's mission or goals
3. Visioning	Process for determining what an organization would do or "look like" if it was to make desired changes
4. Readiness for Change (Buy-in)	Staff commitment to change program, organizational, or systems practices to improve effectiveness in order to achieve desired changes or outcomes
5. Organizational Capacity	Ability of an organization to commit the human, program, and other resources needed for program, organization, or systems changes to produce desired practices
Technical Assistance Plan	
1. Goals and Objectives	The immediate (objectives) and long-term (goals) program changes and outcomes that are the desired benefits of TA
2. Intervention Practices	The particular evidence-based intervention practice or best practices identified (targeted) to produce desired program, organizational, or systems change
3. Fit Assessment	Determining how well the targeted intervention practice matches (fits) the program or organization's mission, priorities, desired changes, staff beliefs, etc. and how well the proposed TA practices also fit the program ecology
4. Logic Model or Theory of Change	A description or graphic representation of the relationship between desired program, organizational, or systems inputs and resources; the intervention practices, actions, or activities to affect desired change; and the intended outputs and outcomes of use of the practices, actions, or activities
5. TA Resources	TA resources made available to and/or provided to program staff to improve the use of targeted evidence-based or best practices
6. Staff Roles and Responsibilities	Specification of the roles and responsibilities of individual staff, and how enactment of those roles and responsibilities are expected to contribute to desired change
Technical Assistance Implementation	
1. TA Provider Credibility	Practices used by a TA provider to establish staff trust, respect, rapport, and beliefs that the provider is acting in the best interests of the program and staff receiving TA
2. Professional Development	The evidence-based professional development practices used by a TA provider to build and strengthen staff, program, organization, and systems capacity to use targeted intervention practices
3. Coaching and Mentoring	TA provider use of either or both coaching and mentoring as part of the provision of TA in interactions with staff to build and strengthen their capacity to use targeted intervention practices

Table 1. continued

Core Elements	Definition of Terms
4. Consultation	Tailored responses to individual staff, groups of staff members, and other program staff in response to questions, concerns, etc. about staff adoption and use of targeted intervention practices
5. TA Provider Support/Feedback	TA provider nonjudgmental acknowledgment, encouragement, and feedback on staff efforts toward and accomplishment of changing program practices consistent with the objectives and goals of the plan
Technical Assistance Evaluation	
1. Process Evaluation	Methods for determining if the practices, activities, or interventions specified (in a theory of change or logic model) were implemented as planned and resulted in identifiable outputs
2. Outcome Evaluation	Methods of determining if the practices, activities, or actions have resulted in desired changes and affect progress or benefits in the target group(s) of a program, organization, or system
3. Fidelity of Use of Intervention Practices	Extent to which the key characteristics of targeted practices that are the focus of TA were implemented in a manner in which they were designed to be used or delivered
4. Fidelity of Use of TA Practices	Extent to which the core elements of TA were used as intended and in a consistent manner with program staff responsible for use of the intervention practice constituting the focus of TA
5. Lessons Learned	Knowledge gained from the use of TA to promote staff use of the targeted intervention practice(s) constituting the focus of TA and the use of that information to make changes or improvements in the overall implementation of program activities
Sustainability of TA-Facilitated Change	
1. Capacity-Sustaining Activities	The program, organization, or systems resources, activities, and professional supports that are used to sustain or maintain the changes that have been put into place as a result of TA-related practices
2. Continuous Quality Improvement	Processes used to ensure ongoing improvements in a program, organization, or system that were the focus of TA
3. Ongoing TA Provider Support	Procedures used to provide either or both informal and formal TA supports to program staff after the completion of TA-related activities
4. Follow-Up TA Activities	Planned activities used to provide program staff opportunities to share concerns and accomplishments and to obtain input, feedback, suggestions, etc. from a TA provider

TA elements that emerged from our review, analysis, and integration of the different TA models and frameworks. Our analysis identified five TA components and 25 TA core elements or practices.

3.1.1 Preparation for Technical Assistance

Five different core elements and practices were included in the TA models and frameworks to describe what TA providers do to engage key staff in preparing for the delivery of TA. This included a needs assessment or gap analysis of desired changes or improvements; staff decision-making to establish priorities for TA; staff visioning in terms of what a program, organization, or system would look like if desired changes were achieved; an assessment of staff readiness for and commitment to making desired changes; and determining if the program, organization, or

system has the resources needed to make desired changes. Most TA model and framework developers described the same or similar combinations of these core elements as being important for planning the provision of TA.

3.1.2 Technical Assistance Plan

Six core elements were described as important for developing a TA plan. These included setting objectives and goals for program changes; specification of the evidence-based or innovative practices that would be the focus of TA; an assessment of whether the proposed intervention practice and TA approach “makes sense” and fits with the existing program mission and goals; the development of a logic model, theory of change, or other type of plan (e.g., Leeman et al., 2017) for describing the relationships between inputs, practices, and outcomes; the TA resources that will be made available by a TA provider to facilitate change; and the roles and responsibilities of staff in learning to use the targeted intervention practices to achieve desired program, organization, or system change. A TA plan was viewed by most model and framework developers as a necessary blueprint for ensuring staff had a clear understanding of what was to be done to achieve desired outcomes.

3.1.3 Provision of Technical Assistance

Five core elements were included in some but not all TA models and frameworks. These included explicit efforts to establish the credibility of the TA provider and the proposed approach to TA; the use of some type of professional development or training to promote staff abilities to use targeted practices; the use of coaching or mentoring by the TA provider as part of professional development; TA provider consultation in response to staff requests for assistance and guidance; and TA provider supports and performance feedback in response to progress toward using targeted intervention practices. Although nearly all TA model and framework developers noted the importance of TA provider professional development, there was very little consensus in terms of the types of professional development that should be used, and not a single model or framework included a description of or reference to evidence-based adult learning or professional development (Dunst, Bruder, & Hamby, 2015; Dunst, Trivette, & Hamby, 2010) as important for capacity-building purposes.

3.1.4 Technical Assistance Evaluation

Four core evaluation practices were described by most TA model and framework developers. The least mentioned core element was fidelity of use of TA practices. This core element is included because there is now evidence that the fidelity of the use of TA professional development practices is related to the fidelity of staff use of targeted intervention practices (Dunst, Trivette, & Raab, 2013; Fixsen et al., 2005). Most models and frameworks included the description of process or formative evaluation; outcome or summative evaluation; fidelity of use of the targeted intervention practice; and, to a lesser degree, the use of lessons learned from the provision and evaluation of TA to inform improvements in program, organization, and systems change activities and practices. The latter is important because using lessons learned to inform improvements in the provision of TA is an important factor contributing to desired TA outcomes (Hamilton, Shanley, Dailey, & McNerney, 2003; Lyons, Hoag, Orfield, & Streeter, 2016).

3.1.5 Sustainability of TA-Facilitated Change

The sustainability of TA provider facilitated program, organization, or system change is considered by a number of TA experts as a necessary activity if changes are to be maintained after the completion of formal TA (Hodge & Turner, 2016; McIntosh, Horner, & Sugai, 2009; Vaughn, Klingner, & Hughes, 2000). Most models and frameworks include descriptions of activities to ensure or at least increase the likelihood that changes are sustained. This is often done in terms of a continuous quality improvement plan that includes ongoing training provided by designated program or organization staff. Some models and frameworks include descriptions of the availability of ongoing TA-provider supports after the completion of formal TA activities typically delivered by phone consultations, email communication, and other electronic means. In some cases, planned follow-up TA activities were included to provide support and guidance after staff has had some time to implement targeted interventions where TA follow-up activities could focus on program, organization, or systems-related issues.

3.2 Scope of TA Core Elements

Table 2 shows the number and percent of TA models and frameworks that included each of the 25 core elements. The core elements mentioned most frequently were needs assessment (96%), objectives and goals (92%), professional development (88%), targeted intervention practices (84%), TA resources (80%), TA provider feedback (80%), and process evaluation (80%). The core elements mentioned least often were establishing TA provider credibility (16%), fidelity of the use of capacity-building TA practices (28%), fit assessment (40%), and follow-up TA activities (40%).

A comparison of our findings with those reported by Katz and Wandersman (2016) and Meyers et al. (2012) indicates that the percent of core elements in the TA models and frameworks is higher than that reported by these investigators for the same or very similar TA practices. For example, Katz and Wandersman (2016) and Meyers et al. (2012) found that needs assessment was mentioned, respectively, by 66% and 56% of the investigators of the reports included in their analyses, whereas we found that 96% of TA models and frameworks included needs assessment as a core element. This was not surprising since the TA model and framework developers specifically intended to describe the practice that are the core elements of their models and frameworks.

The extent to which the different TA models and frameworks included combinations of core elements and practices in each of the five TA components is shown in Figure 1. What is shown is the percent of core elements in each TA model and framework in each component averaged across the 25 TA papers and reports.

Table 2. Core Elements and Practices Included in the Descriptions of the Technical Assistance Models and Frameworks

Core Elements	Number	Percent
Preparation for Technical Assistance		
Needs Assessment	24	96
Decision-Making	16	64
Visioning	17	68
Readiness for Change	19	76
Organizational Capacity	15	60
Technical Assistance Plan		
Goals and Objectives	23	92
Intervention Practices	21	84
Fit Assessment	10	40
Logic Model or Theory of Change	12	48
Technical Assistance Provided Resources	20	80
Staff Roles and Responsibilities	13	52
Technical Assistance Implementation		
Technical Assistance Provider Credibility	4	16
Professional Development	22	88
Coaching and Mentoring	13	52
Technical Assistance Provider Consultation	20	60
Technical Assistance Provider Support/Feedback	15	80
Technical Assistance Evaluation		
Process Evaluation	20	80
Outcome Evaluation	15	60
Intervention Practice Fidelity	10	40
Technical Assistance Practice Fidelity	7	28
Lessons Learned	11	44
Sustainability		
Capacity-Sustaining Activities	16	64
Continuous Quality Improvement	15	60
Ongoing Technical Assistance Provider Supports	12	48
Follow-Up Technical Assistance Activities	10	40

The average percent of core elements differed as evidenced by a between component repeated measures analysis-of-variance, $F(4, 21) = 4.92, p = .006$. As is clearly shown in Figure 1, there are discernable differences in the percent of core elements included in each component, ranging between 53% (sustainability) and 73% (preparation).

The mean difference effect sizes for each of the between component comparisons are shown in Table 3. These were computed using a standard effect size calculator for within group (paired *t*-test) mean difference scores adjusted for the correlations between the individual component scores (Faul, Erdfelder, Lang, & Buchner, 2007). The sizes of

effects for 9 of the 10 between component comparisons are small to medium, and may be taken as evidence for the differential importance of the core TA elements as described by the TA model and framework developers.

Although an assessment of why this would be the case was beyond the purpose of our review, there are at least two factors that may be at play. One is the fact that the TA models and frameworks differed in terms of those that “offered” primarily predetermined practices as the focus of TA (e.g., Algozzine et al., 2010; Goreczny, Hobbs, Peterson, Bosse, & Perrell, 2015) whereas others were entirely based on program, organization, and systems-level staff identified practices as the focus of TA (e.g., Butterfoss, 2004; Le, Anthony, Bronheim, Holland, & Perry, 2014). A second and not so apparent factor is the underlying purpose of TA. On the one hand, some TA model and framework developers focused primarily on program, organization, or system capacity-building with little or no emphasis on the sustainability of TA-facilitated change (e.g., Otoo, Agapitova, & Behrens, 2009; Soler, Coccozza, & Henry, 2013). On the other hand, some TA model and framework developers focused on specific aspects of TA but not other core elements (e.g., Fischer, Ellingson, McCormick, & Sinkowitz-Cochran, 2014; Luiselli & Luiselli, 1995). It is possible that those differences account for at least some of the variability in the particular core elements that are viewed as most and least important.

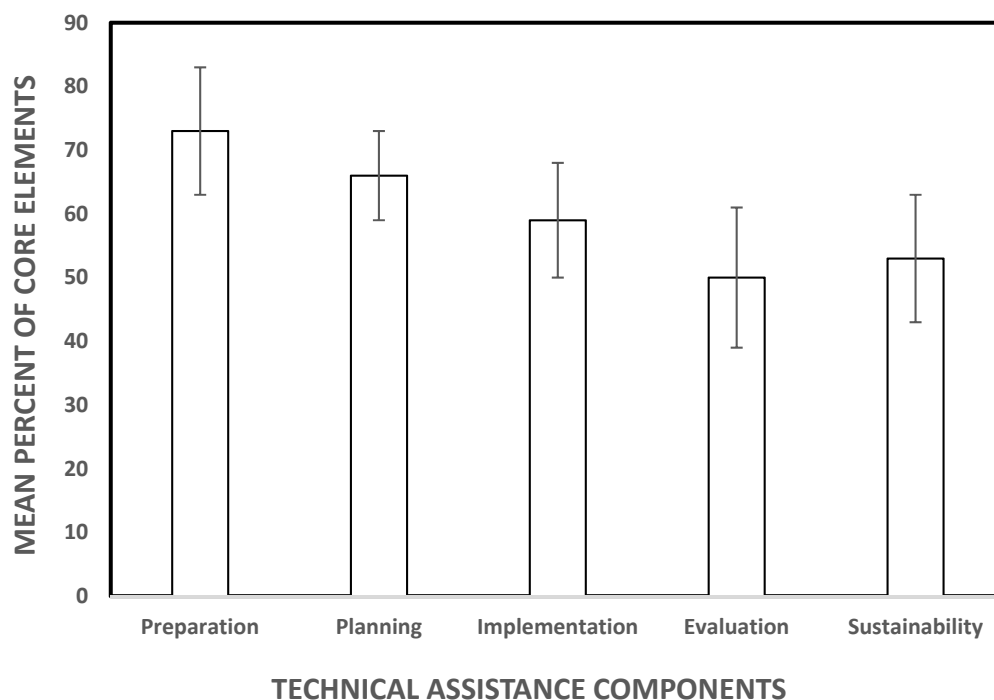


Figure 1. Mean Percent of Core Elements Included in Each Technical Assistance Model and Framework Component and the 95% Confidence Intervals for the Average Scores

Table 3. Between Technical Assistance Component Mean Difference Effect Sizes for the Percent of Core Elements Included in Each Component

TA Components	TA Components				
	PTA	TAP	TAI	TAE	STA
Preparation for Technical Assistance (PTA)	-	.28	.40	.72	.56
Technical Assistance Planning (TAP)		-	.28	.61	.40
Technical Assistance Implementation (TAI)			-	.25	.17
Technical Assistance Evaluation (TAE)				-	.06
Sustainability of Technical Assistance (STA)					-

4. Discussion

The scoping review proved informative in terms of identifying generally agreed upon core elements of TA. The core elements, taken together, provide evidence for the make-up of TA models and practices and the particular core elements that ought to be considered as part of planning, delivering, and evaluating TA. Notwithstanding the differential inclusion of core elements in the five TA components, there was relative consistency in the particular types of TA practices that were considered most important.

This scoping review differed from other reviews of TA (Katz & Wandersman, 2016) and TA-related (Bertram et al., 2011; Meyers et al., 2012; Wandersman et al., 2012) practices by focusing specifically on identifying the core elements of existing TA models and frameworks rather than focusing on model building in order to identify the practices (Katz & Wandersman, 2016), critical steps (Meyers et al., 2012), or core components (Bertram et al., 2011) as part of the evaluation of research on the effectiveness of TA. This is most likely the reason that the percent of TA models and frameworks in our review included specific core elements that were reported more often than in other reviews.

4.1 Implications for Research

The core TA elements identified in the scoping review are currently being used to code the use of the practices in studies and evaluations of TA interventions to determine if the use of the TA practices is differentially related to changes or improvements in program, organization, or system practices as well as changes in other outcomes. West et al. (2012) concluded based on their review of the effectiveness of TA that “our assessment of published evaluations found limited evidence for its effectiveness” (p. 915). Those investigators, however, did not evaluate the relationships between TA core elements or practices and study outcomes, and therefore their conclusion may not accurately reflect factors associated with TA outcomes.

Hodge et al. (2016), as part of a narrative review of TA-related practices, concluded that the particular practices constituting the focus of our scoping review were major factors associated with program, organization, or system change. These investigators as well made no attempt to relate those factors to outcomes of interest in a way that identifies practice-outcome relationships. The extent to which the latter could be ascertained in a quantitative analysis of TA core component-study outcome relationships is currently the focus of our research on which core elements and combinations of elements are associated with observed or reported changes in program, organization, and system practices. The results are expected to inform the identification of the particular core elements that matter most in terms of research and evaluation study outcomes.

5. Conclusion

Despite a lack of a generally agreed upon definition of TA, there is some agreement in terms of at least a dozen or so Core TA elements. Whether these core elements, or infrequently mentioned core elements such as the fidelity of TA practices, are more important than others necessitates core element-outcome studies and reviews to identify what matters most in terms of explaining how and in what manner TA is effective in terms of influencing program organization, or system changes. The interested reader is referred to Dunst et al. (in press) for a review of these types of studies where specific core elements and combinations of core elements were related to the largest sizes of effects of TA practices.

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Appendix

Technical Assistance Models and Frameworks

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