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What Do We Know About Technical Assistance? Enhancing the Science and Practice of Technical Assistance via a Research Synthesis

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WHAT DO WE KNOW ABOUT TECHNICAL ASSISTANCE?
ENHANCING THE SCIENCE AND PRACTICE OF TECHNICAL ASSISTANCE VIA
A RESEARCH SYNTHESIS

by

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ABSTRACT

Introduction. Each year billions of dollars are spent on providing technical assistance (TA) to build the capacity of host settings (e.g., organizations, communities) to implement innovations, but there is little consensus (or even discussion) about: what the essential features of TA are, how to provide TA with quality, and how a quality-based accountability perspective can help us to enhance the science and practice of TA. To begin to address these needs, a research synthesis methodology was used for conducting a content analysis of the current evidence base for TA using three frames: (1) applying a conceptual and operational model (Getting To Outcomes[®] (GTO[®])) that specifies steps for planning, implementing and evaluating TA; (2) understanding the relevance of a successful relationship between the TA provider and TA recipient; and (3) considering the extent to which TA fits the life-span needs of the innovation that is being implemented in the host organization or community.

Methods. This study used a research synthesis approach to accommodate a wide array of outcomes and project designs in a systematic review of TA literature. To identify salient publications, the search terms “technical assistance and (evaluation or outcomes)” were used in the MEDLINE, PsycInfo, CINAHL, and Social Work Abstracts databases. Initially, over 800 publications were identified. Evaluations based on pre-specified criteria identified 111 unduplicated papers for review. Information to address the issues of concern were abstracted using a structured data form with an inter-rater reliability (Cohen’s Kappa) greater than 0.7.

Results. The information compiled for this synthesis revealed that some techniques (GTO steps) are not reported frequently (continuous quality improvement, sustainability) in the literature whereas other techniques are reported more frequently but with variable levels of rigor. For example, a TA needs/resource assessment was often specified and the step tended to be quite systematic in its application, while TA goal-setting was frequently reported but was often carried out in a way that lacked sufficient precision. The most commonly reported TA relationship features were collaboration, encouragement, and trust. With the exception of one technique (assessing fit of best practices), no significant differences in techniques were observed between major stages in the innovation life span. There were some differences between the stages in relationship features; for example, collaboration and respect were more important earlier in the life-span.

Conclusion. The findings from the synthesis provide a snapshot of what we know about TA, which can be used to enhance the science and practice of TA. The results indicate high variability in the utilization of TA techniques, and some of the underlying chaos or apparent omission of systematic forethought in selecting and using techniques may be reflected in the finding that techniques were largely independent of the innovation life-span. It may be useful to have a checklist listing GTO steps for TA providers to utilize as a decision aide when selecting and using techniques. The finding that relationships are reported relatively frequently suggests that there is value in taking steps to ensure that healthy and supportive TA relationships are in place. TA providers could benefit from a checklist that indicates the predominant relationship features that are reported in the literature, including some of the relationship features identified as being connected to particular life-span stages. Overall, the findings from this synthesis indicate that the rigor

with which TA is being delivered is limited. We suggest that funders and other stakeholders develop and enforce standards for TA quality in order to assure that many of the gaps are improved.

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CHAPTER I

INTRODUCTION

Each year, billions of dollars are spent on technical assistance (TA) to help service delivery systems implement innovations (including evidence-based interventions) with quality. However, in spite of all the money that is spent and the importance of the issues being addressed, there is an apparent absence of a model or organizing approach for how to deliver TA with quality. Although much is invested in TA, there is no ostensible consensus around what should be done to provide TA with quality. The purpose of this synthesis is to extract information from the literature about what is currently known and what still needs to be understood and improved in order to move the field of TA to a higher level of quality and accountability.

1.1 Defining Technical Assistance

Technical assistance (TA) is an individualized and hands-on approach to capacity-building in organizations and communities, often conducted after training (Chinman et al., 2005; Keener, 2007). The recipient of TA is an individual, organization or community that has established specific types of change (innovation) as a goal; innovation is defined as a policy, practice, program, or principle that is new to an organization (Wandersman, Chien & Katz, 2012). A TA provider is always separate and distinct from the leadership and staff of the organization or community that is implementing an innovation.

TA is a capacity-building technology. *Capacity* refers to the ability of an organization or community to enact what is required to reach an outcome, such as the institution of an innovation, or improvements in a preexisting program or in the quality of services (Elliott, 2003; Mayberry et al., 2009). *Capacity-building* refers to building either or both general and innovation¹-specific capacity in the delivery system. General capacity-building involves building capacity for implementing any innovation (Flaspohler, Duffy, Wandersman, Stillman, & Maras, 2008; Wandersman et al., 2008); this may involve leadership development and funding/resource development (Butterfoss, 2004), access to resources (Fawcett et al., 1995), and readiness to change (Mitchell, Florin, & Stevenson, 2002). Innovation-specific capacity, which focuses on building capacity for implementing a particular innovation, has a technical and narrower focus on the knowledge and skills required for a particular innovation (Becker, Lynde, & Swanson, 2008).

TA may be understood within an overall conceptual model for how communities, organizations, or any other host settings change in order to effectively begin innovations, and/or to improve the quality of the services they provide. The Interactive Systems Framework for Dissemination and Implementation (ISF) (Wandersman et al., 2008) is used in this dissertation as a conceptual model for understanding TA.

The ISF is comprised of three systems: (1) *Synthesis and Translation System*; (2) *Delivery System*; and (3) *Support System*.² The ISF's *Synthesis and Translation System* extends the products of research into user-friendly formats that can be accessed with ease

² The three systems in the ISF are presented in this order for the sake of a logical progression of ideas. In actuality, the Support System is a middle link between the other two ISF systems.

and understood by practitioners in the ISF's Delivery system. The ISF's *Delivery System* is the organization or community setting in which an innovation is put into practice (implemented). TA is part of the ISF's *Support System*, which works to strengthen the ISF's Delivery System and its capacity to implement innovations with quality. (The ISF will be revisited more extensively later in this dissertation in the context of life-span capacity-building; a diagram of the ISF is provided in Appendix C.)

1.2 Roles of Techniques and Relationships in Improving TA Outcomes

TA outcomes are end-points linked to the work of a Support System in establishing structures and processes needed to implement change in a Delivery System. More specifically, TA outcomes refer to capacities and motivation in the Delivery System, including desired gains in the knowledge and skills of staff members. The capacities targeted by TA providers in the Delivery System may mediate desired improvements in the targeted structures and processes that are involved in the implementation of innovations.

In order to reach desired TA outcomes, it is important to be accountable and evidence-based in planning, using, and evaluating TA *techniques*. In addition, having a high quality TA provider-recipient *relationship* is essential. Techniques are tools or methods that are employed to facilitate positive change in clients (Harper & Bruce-Sanford, 1981). Relationships have been defined in terms of the degree of collaboration and trust, as well as the “manner and quality” around a service, including an emotional bond and addressing the client's readiness (Hill, 2005).

TA techniques and relationships interact. To the extent that TA techniques and relationships are both of sufficient quality, this interaction will positively amplify desired TA outcomes. Conversely, if techniques or relationships are not of sufficient quality, this will lower the magnitude of TA outcomes (Katz, Wandersman, Vince Whitman, & Hannah, 2012).

1.3 Frames for Reviewing the Literature

This dissertation is a research synthesis of the TA literature and is guided by three frames³, two of which are directly connected to the information presented in the previous section:

- Frame 1 is used to assess information from the TA literature about *techniques* for delivering TA in an accountable way.
- Frame 2 is used to assess information from the literature about important ingredients of quality in a TA provider-TA recipient relationship.
- Frame 3 is an application of Frames 1 and 2 to explore how TA techniques and relationships may be adapted to fit the life-span-stage-appropriate needs of the innovation that is being supported.

Each of the three frames serves to guide the literature searches in this synthesis and the selection of salient studies. Although they are presented separately, the frames will ultimately be integrated. Together, the frames are intended to illuminate a process for

³ A “frame” serves as a lens for reviewing articles through *a priori* categories, as an alternative to approaching each of the articles in a loose and unstructured way without prioritization of key concepts to be explored.

being accountable in TA in order to successfully build capacities in the ISF's Delivery System.

1.4 A Frame for Reviewing TA Techniques

In the absence of any known consensus about a sequence of steps that can define high-quality TA, Getting To Outcomes® (GTO)® (Wandersman, Imm, Chinman, & Kaftarian, 2000) serves as a frame for organizing existing literature on TA techniques because it represents one approach that defines the overall TA process into specific steps. GTO has traditionally been used and has been tested in the Delivery System, including in a community prevention project where coalitions using GTO performed significantly better than coalitions in a comparison condition (Chinman et al., 2008). GTO includes strategic planning steps (e.g., conducting a needs and resource assessment, establishing goals and desired outcomes, best practices), evaluation, and sustainability (see Appendix A). In using this frame for reviewing the literature on TA, techniques were identified that correspond to each of ten GTO steps.⁴

Conducting a TA Needs/Resource Assessment (GTO Step 1). According to the GTO model, the process of TA begins with a TA-specific needs/resource assessment, conducted collaboratively by the TA recipient and the provider. The purpose of a TA needs/ resource assessment is to determine the extent to which a Delivery System requires TA for strengthening general or innovation-specific capacity. For example, the Marguerite Casey Foundation (2007) has a multi-dimensional organizational capacity assessment, with sub-scales for quantifying the capacity dimensions of leadership,

⁴ In some cases, this section integrates literature about the use of GTO in the Delivery System, and there is some reframing to illustrate how the steps are applied to TA.

adaptive management, and operational capacity. Once a set of TA needs is identified, a subset of those needs is prioritized based on a review of available resources and via forecasting risks associated with not addressing a particular need.

Establishing TA Goals and Desired Outcomes (GTO Step 2). TA goals and desired outcomes (objectives) are selected in light of information obtained via the needs/resource assessment. TA objectives are specific, measurable, attainable, realistic, and time-bound (Wandersman et al., 2000). Letts, Ryan, and Grossman (1999) provide examples of desired TA outcomes related to capacity-building in the context of working with non-profit organizations.

Selecting Best Practices (GTO Step 3). In contrast to best practices in the Delivery System, best TA practices are typically not “packaged and proven” interventions. Best TA practices are rather those TA practices that are: (1) more likely to work based on having a strong conceptual or theoretical foundation, and/or (2) based on the best available evidence (including practice-based evidence). A menu of best TA practices includes experiential learning, modeling, and facilitating peer support (Stone Motes, Whiting, & Salone, 2007). These practices can be used to help recipients accomplish tasks such as developing plans or logic models (Fetterman, Kaftarian, & Wandersman, 1996), as well as policy development and access to resources (Florin, Mitchell, & Stevenson, 1993; Kretzmann & McKnight, 1993; Salyers, McKasson, Bond, & McGrew, 2007). The provision of TA can occur as part of ongoing TA in contrast to temporary or circumstance-limited TA (Spoth, Claire, Greenberg, Redmont, & Shin, 2007). TA can be delivered on-site, or via telephone calls, interactive web sites, and electronic mail (Keener, 2007).

Addressing Issues of Fit (GTO Step 4). TA is more likely to lead to desired outcomes when TA practices have appropriate fit with TA recipients in the Delivery System (O'Donnell, Scattergood, Alder, San Doval, & Al, 2000). For example, it is important to ensure a sufficient level of commensurability between selected TA practices and the values and collective customs of TA recipients and their constituents. In addition, TA should fit with ongoing organizational operations and existing TA or other support (Wandersman et al. 2012).

Considering Capacity Issues (GTO Step 5). In order to implement an innovation, it is necessary for a Delivery System to have adequate capacities, including human, fiscal, and technical capacities. Additionally, in planning and implementing TA, it is important for the TA provider to have capacities that are adequate to ensure that TA can be provided with quality. Adequate capacities – including human, fiscal, technical, and evaluation capacities – are important for ensuring that TA is implemented with quality. Human capacities include internal TA staffing and linkages with content experts and researchers (Florin et al., 1993). Fiscal capacities include funds for travel (Salyers et al., 2007). Examples of technical capacities are requisite computer equipment and software for electronic communication.

Developing a Plan (GTO Step 6). A TA plan is a roadmap that reflects the “who, what, where, when, and how” of TA services. One important characteristic of a quality TA plan is documentation of tasks and responsibilities for *both* TA providers and recipients (Feinberg, Greenberg, & Osgood, 2004).

Conducting Process Evaluation / Implementation (GTO Step 7). After the TA process has begun, process evaluation provides feedback about the extent to which delivery of best TA practices is on target and identifies areas requiring mid-course corrections (Nemec et al., 1991).

Conducting Outcome Evaluation (GTO Step 8). An outcome evaluation provides information about the extent to which the TA goals and desired outcomes (objectives) have been accomplished. The outcome evaluation should occur after a sufficient amount of implementation to allow the outcomes to emerge. Although particulars will certainly vary by TA project, the general TA outcome evaluation question will be the same, namely, “Has the Delivery System’s capacities for implementation of innovations been enhanced as a result of TA?”

Continuous Quality Improvement (GTO Step 9). Continuous quality improvement (CQI) involves revisiting previous GTO steps strategically in order to build upon current accomplishments and to improve quality performance (e.g., the initial needs and resources assessment may have missed something important, or the goals and desired outcomes may have been overly ambitious) (Wandersman et al., 2000). Important CQI activities include conducting frequent needs assessments and addressing skill-based capacity-building (e.g., via professional development events for TA providers) (Butterfoss, 2004).

Addressing Sustainability (GTO Step 10). When TA goals and desired outcomes (objectives) have been accomplished, it is important to address sustainability to ensure that the positive results continue over time. One strategy for sustainability involves

having TA recipients gradually take ownership over TA functions (e.g., in supporting new staff hires) (Wandersman et al., 2012).

1.5 A Frame for Reviewing TA Relationship Features

Interpersonal characteristics in a TA relationship are important facilitators of the effective use of TA techniques (Wandersman et al., 2012). The current evidence base about relationships in TA is underdeveloped, but closely related literature (consultation, adult mentorship, coaching) has the potential to supplement the TA literature to provide valuable insights into TA relationship features. Below is a summary of how relationships are addressed in each of these bodies of literature.

Relationships in the technical assistance (TA) literature. There is a need to balance TA expertise in substantive areas with interpersonal and group facilitation (Wesley & Buysse, 1996). The bounds of collaboration may include multiple individuals in a TA recipient organization, including leadership, mid-level, and front-line staff (Salyers et al., 2007). TA providers also work with consumers and their families, practitioners and administrators, and researchers and funders (Salyers et al., 2007; Spoth et al., 2007).

A strong TA relationship that is built on trust, mutual respect, and collaboration can help to facilitate the effective use of techniques. (Stevenson, Florin, Mills, & Andrade, 2002; Stone Wiggins, 2009; Wandersman et al., 2012). In addition, a *long-term* TA relationship has been shown to be more facilitative, practical, and conducive to achieving desired results than time-limited communications (Bors et al., 2009). An early emphasis on rapport-building in TA is suggested (Kegeles, Rebchook, & Tebbetts, 2005),

with follow-up efforts to maintain and strengthen the relationship (O'Donnell et al., 2000).

The quality use of TA techniques to reach TA outcomes is better facilitated when TA providers achieve an appropriate balance between over-involvement (e.g., paternalism) and detachment (Stone Motes et al., 2007) in the TA relationship. In addition, when a proactive approach to TA is used (Fixsen, Blasé, Horner, & Sugai, 2009a; Fruchter, Cahill, & Wahl, 1998; Ray, Wilson, Wandersman, Meyers, & Katz, 2012), the relationship will generally entail greater collaboration, reciprocity, and mutual accountability between TA providers and recipients (Fixsen, Blasé, Naoom, & Wallace, 2009b; Fruchter et al., 1998).

Relationships in the consultation literature. Consultation is a non-hierarchical helping relationship that is conducted with a client to clarify a problem and then to formulate solutions (Knotek & Sandoval, 2003). Consultation aims to enhance local resources and facilitate systemic change (Trickett, Barone, & Watts, 2000), and largely consists of a stage-by-stage process of problem-solving, involving entry, assessment, and creation of bridges and new structures (Good et al., 1997). Consultation includes a special focus on interpersonal processes grounded in the helping literature (Brown, Wyne, Blackburn, & Powell, 1979).

A community consultation approach emphasizes collaboration with local citizens (Kelly, 1974; Kloos et al., 1997). There are several models of consultation, some of which emphasize the consultant's role in facilitating immediate environmental change

(e.g., Bergan, 1977), while others take a broader focus and address the skills and attitudes of the consultee (e.g., Caplan, 1970).

Often the goals of consultation are related to a desired change in behavior. Desired outcomes associated with behavior change are more likely to be accomplished when the consultative relationship is marked by trust and respect, which is expected to help increase the degree to which the consultee is open to and committed to the change (Cherniss, 1978). It is also useful for the consultant to adjust techniques based on the consultee's level of readiness (Hall & Hord, 1987; Hall & Loucks, 1978).

In addition to other functions, the consultant can act like a cheerleader, providing social-emotional support, and emphasizing empowerment of the consultee (Stetler et al., 2006). Mattessich and Monsey (1992) highlighted some key issues that have implications for quality consultation relationships. For example, it is helpful to have a history of prior involvement with the community. It is also advantageous to ensure opportunities for participation and collaboration, and occasions for formal and informal interactions in the consultative relationship.

Schein (1999) outlined other important characteristics of the consultation relationship: consensus between consultants and consultees on key decisions; use of descriptive and strengths-based feedback; specific recommendations; and an appropriate timeline for communication that suits the needs of both the consultant and consultees.

Relationships in the implementation coaching literature. Four main roles of a coach are: supervision, teaching while engaged in practice activities, assessment and feedback, and provision of emotional support (Spouse, 2001). *Implementation coaching*

involves teaching and reinforcing skill development, and adapting knowledge and skills to fit personal styles of practitioners (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005). Implementation coaches have expertise in particular skills and in modeling, teaching, and in providing feedback about these skills to their protégés (Fixsen et al., 2005; Hopkins-Thompson, 2000).

Effective implementation coaches are supportive of clients' autonomy and frequently praise their clients' efforts and accomplishments (Fixsen et al., 2005; Coatsworth & Conroy, 2009). A suggestion for building a strong coaching relationship is for the coach to provide ten items of positive feedback to every one item of critical feedback (Blasé & Fixsen, 2009). Good coaches are sensitive, patient, and diplomatic (Fixsen et al., 2005). Good coaches are clear about specific roles and responsibilities in the coaching relationship (e.g., what is expected of the client), and they are readily accessible (McCormick & Brennan, 2001).

Cognitive coaching is an example of a sub-type of implementation coaching (contextualized in the education field) that may help to illuminate some important relationship characteristics. Cognitive coaches help teachers become more efficacious in acquiring and enacting innovations that promote greater teaching performance (Costa & Garmson, 1994). Cognitive coaches are trained to be both empathetic and flexible in tolerating diversity. In communicating with clients, cognitive coaches work to facilitate a trusting, transparent relationship (Edwards, 2012). Cognitive coaches are trained to be inclusive of clients, collaborative, and facilitative of opportunities for voluntary participation from an array of stakeholders (Edwards, 2012).

Relationships in the adult mentorship literature. Mentoring is a learning relationship (Bokeno, 2009; Douglas, 1997). A mentor guides the professional development (e.g., career development) of someone who has less experience (Dalton, Elias, & Wandersman, 2007; Douglas, 1997). Mentoring is an ongoing relationship whereby a mentor helps to facilitate valued changes in a mentee's thinking, experience, and work habits (Clutterback & Megginson, 2004). Activities of mentors include providing feedback, advocacy, and hands-on support to protégés (Hopkins-Thompson, 2000).

At the beginning of the mentorship relationship, it is vital to ensure compatibility between the mentor and mentee. Both parties traditionally engage in personal and interpersonal reflection about their respective values and what they can bring to the relationship (Barker, 2006). Communication patterns in a strong mentoring relationship are facilitative and strengths-directed, with non-chastising patterns of interaction (Hall & Hord., 2006).

Mentors and mentees should have converging expectations about the scope and purpose of the mentorship relationship and agreement about how the relationship can advance the mentee's education and career development. It can be helpful to facilitate alignment in expectations via mentoring contracts and other types of contracts (Huskins et al., 2011).

There is substantial apparent overlap in the definitions and in many of the characteristics pertaining to how relationships are considered in the technical assistance,

consultation, adult mentorship, and coaching literature. The table in Appendix B provides a frame for reviewing the literature that focuses on relationship features that converge across a sampling of the consultation, coaching, and adult mentorship literature. The relationship features that converge across the four bodies of literature are trust, respect, collaboration, rapport-building, adjusting to the client's readiness, encouragement, support for autonomy, and shared expectations about roles.

1.6 A Frame for Reviewing Life-Span Capacity-Building

TA recipients can be in different stages of an innovation's implementation. A third frame in this synthesis is based on the Interactive Systems Framework for Dissemination and Implementation (Wandersman et al., 2008) in conjunction with a life-span approach to the implementation of innovations (Urban, Hargraves, & Trochim, 2012) (see Appendix C).

A preexisting life-span approach to the implementation of innovations (Urban et al., 2012) includes three stages: initiation, implementation, and stability.⁵ The *initiation* stage refers to organizations, communities, or other entities engaged in foundational work for the general implementation of innovations. The initiation stage provides a general foundation for an innovation (Sarason, 1972). Particular activities that are involved in the initiation stage are related to building general capacities for implementation, including

⁵ The life-span approach of Urban et al. (2012) consists of four phases: initiation, implementation, stability, and dissemination. This approach is conceptually and practically based in a "scaling up" context for particular innovations that can be replicated and further tested for evidence over time. The dissemination phase is omitted in this dissertation because my scope is limited to the life-span of an innovation within a particular *setting* (e.g., organization, community), rather than the implementation of a particular *innovation* across an indefinite number of settings.

setting up a leadership structure, establishing the availability of resources for projects, and staffing and building staff cohesion (Flaspohler et al., 2008).

In the *implementation* stage, stakeholders are involved in activities that are required for the execution of a particular innovation. The initiation stage provides a foundation for implementation efforts of innovations within the implementation stage. Particular activities that are involved in the implementation stage are related to building innovation-specific capacities for implementation, including local buy-in for an innovation, logistics and planning associated with a specific innovation, and skills and expertise that are intrinsic to the operations of a specific innovation in the Delivery System.

The *stability* stage involves building innovation-specific capacities for continued implementation and reaching outcomes, thus continuing the work activities started in the previous stages for building the capacities in the Delivery System and for implementing a particular innovation with quality. Actions in this stage are related to further developing and sustaining the skills and expertise of stakeholders in the Delivery System around a particular innovation, including capacities for leadership, written policies and procedures, and staff retention.

The life-span TA capacity-building frame outlined above is based on a premise that TA is a process, as opposed to an event (Crandall & Williams, 1981). The model can be seen as a step toward answering Fruchter et al.'s (1998) evocative question: "...How does technical assistance change as the change effort matures?"

1.7 Research Questions

Frame #1 (TA techniques)

- What (if any) models or organizing approaches for TA are reported in the literature?
- Which techniques are used for TA strategic planning (conducting a needs/resource assessment, establishing goals and desired outcomes, identifying best practices, addressing issues of fit, considering capacity issues, action planning)?
- Which techniques are used for TA process evaluation and outcome evaluation?
- Which techniques are used for TA continuous quality improvement and sustainability?

Frame #2 (TA relationships)

- What are the key features of a quality TA relationship?

Frame #3 (Life-span capacity-building)

- Are there differences in TA techniques across major stages in the life-span of an innovation?
- Are relationships expressed differently at different stages in the life-span of an innovation?

CHAPTER II

METHODS

2.1 Overview of Research Synthesis Methodology

A research synthesis (Labin, 2008; Labin, Duffy, Meyers, Wandersman, & Lesesne, 2012), which is a systematic approach for carrying out content analysis (Krippendorff, 1980), was conducted to take stock of the technical assistance (TA) literature. A research synthesis method shares some of the core features and underlying logic of a meta-analysis, yet has the added advantage of being able to accommodate an array of project designs that are less rigorous than carefully controlled research designs (many of the projects that are reported in the TA literature are less rigorous than carefully controlled research designs). The TA literature does not, in general, focus on the quantitative outcomes that may be necessary to allow meta-analyses. A research synthesis can include case studies, descriptive studies, and quasi-experimental designs.

There are six steps in the research synthesis method: *defining the research questions* (Step 1); *collecting information sources* (Step 2); *selecting information sources based on inclusion criteria* (Step 3); *extracting and coding data* (Step 4); *analyzing data* (Step 5); and *presenting findings* (Step 6). The method's first step (defining the research questions) is addressed in the concluding portion of the previous chapter. Below is information regarding the collection of information sources, as well as the selection of

information sources based on inclusion criteria, the extraction and coding of data, planning for data analysis, and the presentation of findings.

2.2 Collection of Information Sources

Four literature search engines were utilized to identify peer-reviewed articles for review: MEDLINE, PsycInfo, CINAHL, and Social Work Abstracts. The search terminology used was “technical assistance and (evaluation or outcomes).” The rationale for this search terminology was to allow for a large initial set of articles about TA that have an empirical basis. No time restrictions were used and articles were necessarily written in English. As indicated in Table 1, over 800 articles were initially identified.

2.3 Selection of Information Sources Based on Inclusion Criteria

The abstracts in this set of articles were then reviewed by hand to identify a smaller set of articles for coding. Original articles (not reviews, commentaries, etc.) within peer-reviewed journals were accepted. Articles that were accepted needed to be consistent with the conceptualization of TA as an individualized and hands-on approach to capacity-building in organizations and communities. Information sources that addressed TA needed to satisfy two additional conditions in order to be included in the synthesis: (1) TA needed to occur within the context of dissemination and implementation projects (e.g., prevention, treatment, or education projects that were funded by departments in the federal government, foundations, or state or local governments) – rather than directly focused on the routine operations of a Delivery System; (2) TA was necessarily delivered via a formal and explicit Support System that was always separate and distinct from the leadership of the organization as well as the

staff responsible for delivering the services that were to be changed (e.g., not mentoring from within the organization).

After reducing the number of abstracts based on these inclusion criteria, 133 articles were preserved (and then 122 after de-duplication of articles across the search engines). Articles were then collected and reviewed. Upon inspection of articles, 11 were deemed uncodable based on the inclusion criteria previously indicated (which was not apparent based on the earlier review of abstracts), leaving 111 articles to be coded for the synthesis.

2.4 Extraction and Coding of Data

Using a coding form (see Appendix D), each article that met the inclusion criteria was coded according to the major elements in the three synthesis frames. The unit of analysis for coding was an article and not the project being described (there were no cases in which multiple articles described the same exact project).

An inter-rater reliability analysis was conducted with a set of 12 articles. A Ph.D. level volunteer collaborated on this work, independently rating the 12 articles. Prior to the inter-rater reliability analysis, there were several rounds of practice coding with discussions and consensus-building. The calculated percentage agreement for the inter-rater reliability analysis was 87%. However, to account for the possibility of chance agreement, Cohen's Kappa statistic was also computed, which provides a more conservative estimate of agreement (Landis & Koch, 1977). The Kappa was .73 (indicating substantial agreement). Based on these findings, noise in coding was found to

be not substantial. Therefore, methods for the literature review involved coding by a single evaluator, with a mid-course booster to prevent drift.

Decisions about coding were established based on discussions prior to coding and were refined through practice sessions. The guidelines that were used for coding each of the three frames are described below.

Frame #1: TA Techniques

Conducting a TA Needs/Resource Assessment (GTO Step 1). At a minimum, an article needed to specify a broad process for assessing recipients' TA needs/resources. If this criterion was met, articles were then more specifically examined to determine how the data were collected (e.g., surveys, interviews, or focus groups), if a data analysis process was reported, and if results were reported and interpreted.

Establishing TA Goals and Desired Outcomes (GTO Step 2). In order to be coded for Step 2, articles needed to explicitly describe a projected end-point for the TA process. In the event that this criterion was met, there was more specific coding about whether or not the articles operationalized the goals into specific and measurable desired outcomes, and whether a benchmarking process was used to help ensure consistency with any known, available TA standards.

Selecting Best Practices (GTO Step 3). The criterion for this step was that a TA article needed to specify the selection of a TA practice that has a theoretical or empirical basis, with a reference to existing literature. The coding form

included some a priori prompts for types of practices, but other practices were included after the review of articles.

Addressing Issues of Fit (GTO Step 4). Articles were coded as including this step if they explicitly addressed assessing the fit of best TA practices with the recipient's context. More specific dimensions of fit that were extracted for this step included the recipient's readiness for the planned TA; other priorities, timelines, and deliverables; daily activities and organizational operations, organizational culture; and other existing support services and resources.

Considering Capacity Issues (GTO Step 5). Articles were coded as including this step if they addressed at least one area of capacity for carrying out a best TA practice. Domains of capacity could include *human* (internal and external staffing), *fiscal*, and *technical capacities*. If present, information about other capacities (e.g., evaluation capacity; structural linkages) was extracted as well.

Developing a Plan (GTO Step 6). To be coded as having this step, articles needed to clearly indicate the occurrence of a TA planning process. If this criterion was met, sub-foci included whether the planning process involved TA provider-recipient collaboration, whether specific TA tasks and responsibilities were documented, and whether articles indicated a timeline for the TA work.

Conducting Process Evaluation / Implementation (GTO Step 7). In order to be coded as having this step, articles needed to report a process for measuring TA implementation, including reach, dosage, satisfaction, or quality. Information

was also extracted about whether articles made midcourse corrections based on process evaluation data.

Conducting Outcome Evaluation (GTO Step 8). Articles were coded as having this step if, at a minimum, they specified evaluating progress toward TA goals. Articles meeting this criterion were then sub-coded according to whether a specific data collection process was specified (e.g., a survey), whether outcome evaluation findings were reported, and whether there was consistency between this step and GTO Step 2 (setting TA goals).

Continuous Quality Improvement (GTO Step 9). Articles were coded as having this step if they specified a continuous quality improvement process subsequent to an iteration of TA programming. More specific coding within this step involved looking at whether techniques for continuous feedback (e.g., use of a data dashboard) were utilized, as well as quality improvement consortia / communities of practice, and plan-do-study-act / Shewhart-based techniques.

Addressing Sustainability (GTO Step 10). Articles were coded as having this step if they reported a process for contributing to the sustainability of TA outcomes. Examples of more specific techniques within this step included the development of a sustainability plan, identification of a respected program champion, and integration of TA activities into a Delivery System.

Frame #2: TA Relationships

Definitions informed by literature were used to extract information about relationship features (Hall & Finegood, 2006; Minichiello, Aroni, Timewell, & Alexander, 1990).

Trust. Articles were coded as addressing this feature if they explicitly referred to the TA recipient's faith or confidence in the TA provider. This could be reported in the context of whether the recipient felt that it was safe to disclose sensitive information related to gaps / areas for improvement, or it could refer to the recipient's belief that the TA provider could truly help.

Respect. The criterion for this relationship feature was whether articles explicitly addressed the quality or state of being esteemed (holding in high regard). This feature could refer to either mutual respect or a one-way flow of respect.

Collaboration. This relationship feature was present in articles that explicitly described TA providers and recipients working together in the direction of a shared purpose. Note that this relationship feature is in contrast to a more traditional one-way directionality in the TA process (e.g., paternalism).

Adjusting to readiness. This feature was present in articles that addressed structuring the TA process to match the recipient's perception of how important change was at that moment.

Encouragement. Articles were coded as having this feature if there was a clear statement about generally inspiring the TA recipient with courage or hope,

or, on a more specific level, if there was positive reinforcement in connection with the recipient's activities/behaviors.

Autonomy supportive. This relationship feature was present if there was a clear statement about the TA provider's efforts to promote self-governance on the part of the TA recipient.

Building rapport. Articles were coded as having this feature if there was a clear statement about the TA provider's efforts to facilitate collegiality and/or a cooperative interpersonal climate.

Frame #3: Innovation Life-Span Stages

Articles were coded according to the following life-span stages for the innovation being supported:

Initiation stage. Articles were coded for this life-span stage if they reported a primary focus on general capacities in the Delivery System (including leadership, the availability of resources needed for implementation, work climate, and staffing).

Implementation stage. Articles were coded for this stage if they reported a primary focus on the active work involved in implementing a specific innovation (including logistics and planning, and using skills and expertise for successful implementation).

Stability stage. Articles were coded for this stage if they reported a primary focus on sustaining an innovation within the organization or system.

2.5 Analyzing Data

See Appendix E for a list of questions that were used to guide analyses of data. The questions primarily involved looking at the total information sources as the denominator and an appropriate indicator (corresponding to major research questions in this synthesis) as the numerator. A sample question is “number of information sources that address needs/resources assessment / total number of information sources.” More specific sub-questions were also included, such as “number of information sources that specify the use of surveys / total number of information sources that address needs/resources assessment.” A subset of the questions (those that compared techniques and relationships at different innovation life-span stages) was answered using the chi-square test of independence, or the Fisher’s exact test when one of the cells in a cross tabulation table had an expected frequency of five or less.

Information was extracted from coding forms into IBM SPSS Statistics Version 20, which was used to calculate frequencies and to run analyses. QSR NVivo 10 was used to code and categorize information that was collected under “other” categories in the coding form.

2.6 Presenting Findings

The data collected for this synthesis are presented in a format organized according to the data analysis plan (described above and see Appendix E). Information about the use of techniques according to the ten GTO steps is initially presented, followed by information about TA relationship features (e.g., trust, collaboration). Finally, information is provided about the life-span stages (initiation, implementation, stability) in

which the delivery of TA is contextualized, and comparisons of the stages in terms of techniques and relationship features.

CHAPTER III

RESULTS

One-hundred and eleven articles were selected for this synthesis (see Table 3.1 for the article selection results). Table 3.2 provides a summary of the key characteristics of these articles, including content area, level of analysis, overall project timeline, Delivery System roles represented, as well as TA mode, dosage, and other support components (tool/manual, training, quality assurance/quality improvement).

All of the articles were coded according to a predominant content area. A majority of the articles addressed TA occurring in the context of services addressing physical health (25/111 = 22.5%), mental health (12/111 = 10.8%), or alcohol or other drug abuse (19/111 = 17.1%). Fewer articles addressed youth development (9/111 = 8.1%), HIV/AIDS (8/111 = 7.2%), teen pregnancy (2/111 = 1.8%) and early childhood (4/111 = 3.6%).

The most commonly reported level of analysis for TA was the organization (60/111 = 54.1%), followed by the community (35/111 = 31.5%). A majority of the articles described the Delivery System role of the TA recipient (90/111 = 81.1%), which included front line staff members (33/111 = 29.7%), project directors (14/111 = 12.6%),

and other supervisory roles (4/90 = 4.4%). Other Delivery System roles were represented, including policy makers (Washington, Nápoles-Springer, Forté, Alexander, & Pérez-Stable, 2002) and community coalition leaders (Horne, Miller, Silva, & Anderson, 2013). In some cases, there were staff members in multiple roles receiving TA. For example, one article described providing TA to both a prevention director and field staff (Kelly et al., 2000).

A timeline for the innovation being supported was reported in roughly 85% (92/111) of the reviewed articles. Many of the articles reported a timeline occurring between one and two years (32/111 = 28.8%). Only a small number (8/111 = 7.2%) of articles described a timeline lasting for more than five years.

TA mode (on-site vs. off-site/virtual) and dose (amount of TA provided in terms of time or number of sessions) were reported in most articles. Both on-site TA (68/111 = 61.3%) and virtual TA (61/111 = 55.0%) were highly utilized. A slightly smaller number of articles explicitly reported dosage (74/111 = 66.7%). A majority of the TA services were described as being ongoing or involving regularly scheduled activities (69/111 = 62.2%), while considerably fewer articles involved circumstance-driven or reactive TA (27/111 = 24.3%).

Nearly all of the articles described additional support components in addition to TA (108/111 = 97.3%), including the development and/or distribution of tools/manuals (71/111 = 64.0%), training (91/111 = 82.0%), and quality assurance/quality improvement for the Delivery System (47/111 (42.3%).

3.1 Technical Assistance Techniques

Only two articles specified models or organizing approaches for planning, implementing, and/or evaluating TA techniques. The first of these was a four-phase TA process (assessment, cooperative planning, delivery of TA, evaluation) (Nemec et al., 1991). For example, the assessment phase involved a focus on the readiness of the recipient, including the extent to which the recipient's organizational culture facilitated implementation of the innovation, and the value that the recipient ascribed to TA in terms of the assistance and supports being offered. The assessment phase also focused on the resources that are expected to help the recipient to receive TA (e.g., supportive leadership). The second model was not very specific; it broadly mentioned a three-phase approach involving initial diagnosis, development of a logic model, followed by a planning process around how the TA services will make improvements (Chinman et al., 2013). No other articles indicated a model or organizing approach with a sequence of techniques guiding the TA process.

Table 3.3 (as well as Figure 3.1) shows how the techniques proposed in GTO were used in the reviewed articles. The most heavily reported steps were TA needs/resource assessment (GTO Step 1) (73/111 = 66%), setting TA goals (GTO Step 2) (97/111 = 87.4%), conducting process evaluation (GTO Step 7) (56/111 = 50.5%), and conducting outcome evaluation (87/111 = 78.4%).

A smaller percentage of articles (< 50%) reported techniques associated with best TA practices (GTO Step 3) (44 /111 = 36.9%), TA planning (GTO Step 6) (10/111 =

9%), continuous quality improvement (GTO Step 9) (13/111 = 11.7%), and sustainability (GTO Step 10) (31/111 = 27.9%).

Needs/resource assessment. As reported in Table 4, 73/111 (66%) articles addressed a TA needs/resource assessment. Almost all of the articles that reported this step explicitly mentioned a data collection process (69/111 = 62.2%), including use of surveys, interviews, and focus groups to get information about TA needs/resources. A slightly lower number of articles (55/111 = 49.5%) addressed a process for analyzing the needs/resource data. A majority of articles reported the results of the assessment (60/111 = 54.1%) but considerably less interpreted the results (40/111 = 36.0%).

An example of GTO Step 1 is found in Klein and Nelson's (2000) article about building the capacity of states to increase home ownership among people with disabilities. The authors described a process of administering a survey to states to get information about agency/organizational administration, homeownership initiative characteristics, and key partners. One of their findings was that there was room for improvement with respect to recipients' capacities for including people with disabilities and their families in statewide homeowner advocacy efforts.

TA goals/desired outcomes. A majority of the articles indicated a process for selecting TA goals (97/111 = 87.4%). Only a very small number of the articles described translating goals into more specific, measurable desired outcomes (7/111 = 6.3%). In addition, few articles explicitly linked goals to a prior needs assessment (5/111 = 4.5%) and few used a benchmarking process for establishing TA goals (3/111 = 2.7%).

Best TA practices. Less than half ($41/111 = 36.9\%$) of the articles addressed selecting a best TA practice (GTO Step 3). Seven articles (6.3%) addressed best practices related to diffusion of innovation theory, which focuses on bringing innovations to end-users and supporting how the innovations are adopted and used (Rogers, 2003). In this approach, attention was given to the TA provider's role in addressing key dimensions that are involved in predicting whether an innovation will be adopted by recipients, including *complexity* – where the TA provider presents the innovation as being understandable, and not overly complex or difficult to use – and *relative advantage* – where the TA provider frames the innovation in terms of offering an advantage over existing approaches. Each of these factors is important in terms of the recipient's motivation and decision-making about adopting an innovation, and is addressed as part of the TA provider's communications about an innovation with the recipient.

Five articles ($5/111 = 4.5\%$) connected TA to adult learning theory, where TA providers aim to provide frequent opportunities for interaction and engagement and make explicit efforts to link TA to recipients' own work and experiences. More specifically, three articles addressed personalizing TA to recipients' work and experiences (Brown, Keily, & Spencer, 1994; Collins, Harshbarger, Sawyer, & Hamdallah, 2006; Hunter et al., 2009), and two addressed providing opportunities for hands-on, experiential learning (Hunter et al., 2009; Wesley et al., 1996). Another article talked about minimizing lecture-oriented approaches, frequently integrating visuals/graphics into TA, and allowing for frequent Q&A and discussion (Materna et al., 2002).

A set of articles addressed broad practices for enhancing the participation or empowerment of the recipient ($11/111 = 9.9\%$). Five of these articles mentioned practices

for supporting a community-based participatory process. For example, Fouad et al. (2005) emphasized the need for TA to have deep local relevance and that it should be structured around the premise that each organization or community has its own unique identity. Another article focused on involving recipients who work at different levels of the system being supported (Kahn et al., 2009). Five articles emphasized the need to not only work with recipients to support technical skills but to also empower them to take constructive ownership over their own skill development (e.g., Gilliam et al., 2003, Kumpfer, Pinyuchon, de Melo, & Whiteside, 2008). Three of these articles focused on supporting recipients using an empowerment evaluation approach (Chinman et al., 2008; Fourney, Gregson, Sugerman, & Bellow, 2011; Materna et al., 2002). There was also a group of articles (13/111 = 11.7%) that indicated best TA practices which did not fall into any of the above categories, including facilitating peer-to-peer learning opportunities in the Delivery System.

Addressing issues of fit. Of the 41 articles that mentioned a Step 3 process, 25 (61%) addressed a process of assessing fit (GTO Step 4). The most commonly reported area of fit assessment involved looking at the extent to which best TA practices fit with the recipient's daily activities and organizational operations (11/41 = 26.8%), followed by the recipient's readiness to receive TA (5/41 = 12.2%), organizational culture (5/41 = 12.2%), and the recipient's other priorities, timelines, and/or deliverables (5/41 = 12.2%). Just one article assessed fit with the TA recipient's other existing support (e.g., TA provided by another support system or sources of support such as professional development indigenous to the recipient's system/organization).

Addressing capacity issues. Of the 41 articles mentioning a best TA process, 32/41 (78%) mentioned a GTO Step 5 process (assessment of capacity to deliver a best TA practice). All of these articles assessed human capacity, whereas about a quarter (10/41 = 24.4%) assessed fiscal capacity, and just one (2.4%) assessed technical capacity.

Planning. TA planning (GTO Step 6) was mentioned by 10/111 (9%) articles. Five articles (4.5%) mentioned a collaborative planning process (i.e., involving contributions from TA recipients). Only one article (0.9%) specified the development of a timeline as part of the TA planning process, and one article (0.9%) assigned specific roles and responsibilities as part of TA planning.

Process evaluation. Monitoring of the TA implementation process (GTO Step 7) was reported in slightly more than half of the articles (56/111 = 50.5%). Approximately a quarter of the articles measured reach (i.e., amount of recipients receiving TA) (28/111 = 25.2%), dosage (i.e., how much TA is delivered in terms of hours, sessions, or related units) (26/111 = 23.4%), and satisfaction with TA services (28/111 = 25.2%). Fewer reported measurement of quality (7/111 = 6.3%). Only five articles (4.5%) reporting making midcourse corrections based on process evaluation. For example, based on process evaluation one article indicated using “several strategies to increase participation such as scheduling meeting at various times and locations, along with sending “reminder” phone calls to the [recipients]” (Brown et al., 2006, pg. 56).

Outcome evaluation. Approximately three-quarters (87/111 = 78.4%) of the articles reported a TA outcome evaluation (GTO Step 8). A fraction of the articles specified a data collection process (most of which involved administration of surveys or

interviews) (36/111 = 32.4%). There was high consistency between the focus for the outcome evaluation findings and the initially selected goals. However, as noted earlier, only a very small number of articles (7/111 = 6.3%) translated goals into more specific desired outcomes, so the findings reported in this step were often general in scope. As part of this step, articles often focused on changes in the behavior of TA recipients. For example:

The fact that CTC [Communities That Care] community leaders...report[ed] that their community sought to address elevated risk and depressed protective factors through the implementation of evidence-based preventive interventions and ongoing monitoring of prevention system effectiveness suggested that fundamental change in community systems was being achieved (Rhew, Brown, Hawkins, & Briney, 2013; pg. 533).

Other TA outcome evaluation findings included improvements in healthcare providers' knowledge and skills around using a smoking quitline (Bernstein, Jearld, Prasad, Bax, & Bauer, 2009), complying with condom availability practices (De Rosa et al., 2012), and implementing safety procedures in community-based shops (Shoemaker, Skogstrom, Shea, & Bethune, 2007).

Continuous quality improvement. Just over ten percent of articles reported using continuous quality improvement (CQI) (GTO Step 9) as part of the TA process (13/111 = 11.7%). For example, one article indicated a process for continuing to work with community-based organizations after an initial evaluation period to learn about how TA can be improved (Cheadle et al., 2002). Only one article described a method for

continuous feedback of data: a standard set of forms was used to compile data for a quarterly report that TA recipients were expected to complete, and this information was in turn used as part of a feedback loop to guide the provision of future TA and other support (Carlson et al., 2012). This process was also described as helping to enhance communication and collaboration. About half of the articles with CQI (6) used plan-do-study-act (PDSA), a rapid process for testing and scaling performance improvements. For example, an article reported using PDSA to make tweaks in their processes for orienting new staff in a context of high turnover, culminating in setting up asynchronous orientation tools (including written guidelines and automated web-based tools) (Oliva, Rienks, & Chavez, 2007). No articles reported the use of quality improvement consortia / communities of practice around efforts for TA providers to collaborate and learn from each other about how to improve TA.

Sustainability. Approximately thirty percent of articles (31/111 = 27.9%) focused on how TA outcomes would be sustained. No articles reported sustainability planning; however, there was a focus on selection of a champion (4/111 = 3.6%), as well as integration of TA into a recipient's Delivery System (13/111 = 11.7%). An example of selecting a champion was seen in an article describing TA providers' efforts to identify and work closely with staff champions responsible for progress in tobacco-cessation service improvements (Adsit, Fraser, Redmond, Smith, & Fiore, 2005). An example of an effort to integrate TA activities into a Delivery System involved having recipients supporting others in their organization around the same knowledge and skills that they acquired as part of TA (Gibbs, Hawkins, Clinton-Sherrod, & Noonan, 2009). In addition, TA providers worked with recipients to develop ongoing professional development

programs that would be implemented within the recipient's setting subsequent to TA (Grisham-Brown, Hallam, & Pretti-Frontczak, 2008).

3.2 Technical Assistance Relationships

One article mentioned that quality relationships between TA providers and recipients were expected to serve as a model for relationships between TA recipients and the clients that they, in turn, would be serving (Carlson et al., 2012). Another article stated:

The TA providers developed a relationship with program staff, and as a result, the TA providers were perceived as flexible, respectful, patient, and motivating by the participating program staff. Analogous to a clinical relationship, it is our belief that this relationship was the foundation for many of the gains made by the programs (Hunter et al., 2009).

Fifty-two (52/111 = 46.8%) articles addressed TA relationships (see Table 3.4). More than a quarter of the articles (28/111 = 25.2%) addressed the need for collaboration between TA providers and recipients. For example, one article mentioned a need for TA providers and recipients to develop a partnership and to have shared responsibility throughout the TA process (Corcoran & Robinson, 1993). A second article that focused on collaboration underscored the importance of recipients providing input into the design of tools used as part of the TA process (Florin et al., 2006). According to a third article addressing collaboration:

Working closely and collaboratively with [community-based organizations] is expected to result in assistance that is more relevant and useful for the organizations (Cheadle et al., 2002; pg. 304).

Within the same article, a focus on the need for collaboration was tempered by a recognition that TA providers and recipients often have limited time available to collaborate, and that frequent turnover in staff – particularly in smaller organizations – serves as a barrier to collaboration (Cheadle et al., 2002).

About 7% (8/111) of the articles emphasized the necessity of having a trusting relationship. Braun et al. (2003b) summarized the important role of building trust:

To successfully access Pacific communities, PDTRC (Pacific Diabetes Today Resource Center) first needed to gain the trust of jurisdiction leaders. PDTRC staff approached their contacts in the Pacific to obtain support for PDTRC's mission. These contacts attested to PDTRC's legitimacy, which increased the willingness of jurisdictional leaders (e.g., community leaders, health professionals, and persons with diabetes and their family members) to meet with PDTRC staff to share their perceptions of diabetes and its control. In being asked for their opinions, many leaders realized their interest in diabetes and agreed to form coalitions to learn how to plan, implement, and evaluate solutions. PDTRC staff thus gained the trust of the leaders by demonstrating respect for their cultural protocol and an ability to listen, share resources, and follow through on commitments (S20).

Another article addressed trust in terms of the need for confidentiality and helping recipients “to feel that they can be honest and sometimes describe situations that need improvement” (Rantz et al., 2003; pg. 257). An additional article focused on the need for recipients to have trust that the TA providers will be there to help in a time of need (Cheadle et al., 2002).

A set of articles addressed encouragement (10/111 = 9.0%) as an important part of the TA relationship. The focus on encouragement largely involved the work of TA providers in providing positive comments intended to motivate recipients (Hanson, Reynolds, Henderson, & Pickard, 2005; Hunter et al., 2009). Emergent relationship features (i.e., features that were not *a priori* categories contained in the coding form) were identified in 22 articles and included: *ongoing relationship* (3/111 = 2.8%), *open communication* (4/111 = 3.6%), *being strengths-based* (5/111 = 4.5%), and *being non-judgmental* (4/111 = 3.6%). For example, TA providers were strengths-based by communicating with recipients in a non-threatening and supportive way, and by avoiding a focus on deficits (Sullivan & Rapp, 1991). According to one article, having a long-term relationship helps TA providers to get optimally familiarized with a recipient and allows the recipient to understand the kind of assistance that TA providers can provide and how TA can make positive contributions (Cheadle et al., 2002).

Some interesting but not commonly reported relationship features involved the importance of the TA provider’s credibility (which relates to and influences trust) (Florin et al., 2006), as well as the TA provider’s sense of humor (Corcoran et al., 1993).

3.3 Technical Assistance According to the Life-Span of the Innovation

Each article was coded according to one of three mutually exclusive life-span stages: *initiation* (TA that is offered prior to implementing an innovation, with a focus on general capacity-building), *implementation* (TA that is provided during the implementation of an innovation, with a focus on innovation-specific capacity-building), and *stability* (TA that is provided subsequent to implementation of a specific innovation with an eye toward sustainability).

As shown in Table 3.5, articles were nearly split in terms of being coded for initiation (47/111 = 42.3%) versus implementation of an innovation (55/111 = 49.5%), but few were coded as being in the stability stage (7/111 = 6.3%). As a result of the small number of articles in the stability stage, articles in this particular stage were excluded from subsequent chi-square analyses.⁶

Chi-square and Fisher's exact tests of independence compared articles in the initiation stage with those in the implementation stage with respect to the reporting of techniques and relationships. Results of the comparison of the stages based on techniques

⁶ Two articles did not address the life-span, and there were 16 articles that were coded according to more than one of these stages because of the fact that the author traced the evolution of the innovation retrospectively. More specifically, ten addressed both initiation and implementation; five addressed both implementation and stability; and one addressed both initiation and stability. As a rule of thumb, the more recent stage was preserved in cases of duplication (hence, implementation was used when initiation and implementation were both reported; stability when both implementation and stability were reported; stability when both initiation and stability were reported). The de-duplication was done in order to ensure that the assumption of independent observations for the independent samples chi square test was not violated. A sensitivity analysis was performed to identify the extent to which the chi square results would change when the *least* recent phase was used, and no differences were observed. The de-duplicated frequencies for the life-span stages are presented in Table 6.

are presented in Table 3.6. With the exception of one comparison, there were no differences between stages in the use of techniques. The only difference that was not based on chance variation was for Step 4 (assessment of fit) techniques. The proportions were significantly different, $X^2(1, N = 102) = 5.40, p = .02$, such that the assessment of TA fit was more likely to occur for supporting innovations in the initiation stage.

Results of the comparison of life-span stages with respect to whether relationships were addressed are presented in Table 3.7. There were no differences between articles in initiation and implementation stages in whether relationships were addressed at all, $X^2(1, N = 102) = 0.56, p = .45$. However, there were some differences with respect to particular features of relationships, including collaboration, encouragement, and respect. Articles in the initiation stage were significantly more likely to address collaboration than articles in the implementation stage, $X^2(1, N = 102) = 4.21, p = .04$. In addition, respect was significantly more likely to be addressed with articles in the initiation stage, *Fisher's exact test*, $p = .04$. Articles in the implementation stage addressed encouragement significantly more than articles in the initiation stage, *Fisher's exact test*, $p = .04$. Trust was equally likely to be addressed in the initiation and implementation stages, *Fisher's exact test*, $p = .14$.

Table 3.1 Selection and Coding of Articles

Database	# of Articles in Database	# of Articles Kept After Review of Abstracts	# of Articles Kept after De-Duplication	Number of Articles Coded
MEDLINE	397	76	76	68
PsycInfo	197	25	22	21
CINAHL	189	24	21	20
Social Work Abstracts	24	8	3	2
Total	807	133	122	111

Table 3.2 Key Dimensions of Articles

Variable	Frequency	Sub-Frequency
Content Area^a		
Mental Health	12/111 (10.8%)	
Physical Health	25/111 (22.5%)	
Education	4/111 (3.6%)	
Alcohol and Other Drug	19/111 (17.1%)	
Early Childhood	4/111 (3.6%)	
Youth Development	9/111 (8.1%)	
Teen Pregnancy	2/111 (1.8%)	
HIV/AIDS	8/111 (7.2%)	
Other	28/111 (25.2%)	
Level of Analysis^a		
Nation	0/111 (0%)	
State	3/111 (2.7%)	
Region	10/111 (9%)	
Community	35/111 (31.5%)	
Organization	60/111 (54.1%)	
Multiple Levels	3/111 (2.7%)	
Delivery System Roles Represented	90/111 (81.1%)	
Project Directors	14/111 (12.6%)	14/90 (15.6%)
Supervisors	4/111 (3.6%)	4/90 (4.4%)
Front Line Providers	33/111 (29.7%)	33/90 (36.7%)
Multiple roles represented or other staff	68/111 (61.3%)	68/90 (75.6%)
Project Timeline^a	92/111 (82.9%)	
≤ one year	16/111 (14.4%)	16/92 (17.4%)
≤ two years, and > one year	32/111 (28.8%)	32/92 (34.8%)
≤ three years, and > two years	17/111 (15.3%)	17/92 (18.5%)
≤ four years, and > three years	6/111 (5.4%)	6/92 (6.5%)
≤ five years, and > four years	13/111 (11.7%)	13/92 (14.1%)
> five years	8/111 (7.2%)	8/92 (8.7%)
Mode	79/111 (71.2%)	
On-site (explicitly reported)	68/111 (61.3%)	68/79 (86.1%)
Virtual (explicitly reported)	61/111 (55.0%)	61/79 (77.2%)
Dose	74/111 (66.7%)	
Circumstance-Driven / Reactive TA (explicitly reported)	27/111 (24.3%)	27/74 (36.5%)
Ongoing or Regularly Scheduled Activities (explicitly reported)	69/111 (62.2%)	69/74 (93.2%)
Additional Support Components	108/111 (97.3%)	
Tool/Manual	71/111 (64.0%)	71/108 (65.7%)
Training	91/111 (82.0%)	91/108 (84.3%)
Quality Assurance/Quality Improvement	47/111 (42.3%)	47/108 (43.5%)

^a Items in section are mutually exclusive

Table 3.3 TA Techniques Reported in Articles

Techniques	Frequency	Sub-Frequency
TA Needs & Resource Assessment (GTO Step 1)	73/111 (66%)	
• Needs/Resource Data Collection Process	69/111 ^a (62.2%)	69/73 (94.5%)
○ Survey	40/111 (36.0%)	40/69 (58.0%)
○ Interview	15/111 (13.5%)	15/69 (21.7%)
○ Focus Group	4/111 (3.6%)	4/69 (6.0%)
○ Reporting a Timeline to Guide Data Collection	41/111 (36.9%)	41/69 (59.4%)
• Data Analysis Process	55/111 (49.5%)	55/73 (75.3%)
• Reporting of Results	60/111 (54.1%)	60/73 (82.2%)
• Interpretation of Results	40/111 (36.0%)	40/73 (54.8%)
Setting TA Goals (GTO Step 2)	97/111 (87.4%)	
• Setting Goals Based on Needs & Resources Assessment	5/111 (4.5%)	5/97 (5.2%)
• Translating Goals into Desired Outcomes	7/111 (6.3%)	7/97 (7.2%)
• Benchmarking	3/111 (2.7%)	3/97 (3.1%)
Best TA Practices (GTO Step 3)	41/111^b (36.9%)	
• Diffusion of Innovation-Oriented Techniques	7/111 (6.3%)	7/17 (41.2%)
• Adult Learning Techniques	5/111 (4.5%)	5/17 (29.4%)
• Academic Detailing Techniques	2/111 (1.8%)	2/17 (11.8%)
• Participation/Empowerment Techniques	11/111 (9.9%)	11/41 (26.8%)
• Other Step 3 Techniques	13/111 (11.7%)	13/41 (31.7%)
Fit of Best TA Practices (GTO Step 4)	25/41 (61%)	
• Fit with Recipient's Readiness to Receive TA	5/41 (12.2%)	5/25 (20.0%)
• Fit with Recipient's Daily Activities and Organizational Operations	11/41 (26.8%)	11/25 (44.0%)
• Fit with Recipient's Organizational Culture	5/41 (12.2%)	5/25 (20.0%)
• Fit with Recipient's other Priorities, Timelines, and/or Deliverables	5/41 (12.2%)	5/25 (20.0%)
• Fit with Recipient's Other Existing Support	1/41 (2.4%)	1/25 (4.0%)
Capacity to Implement Best TA Practices (GTO Step 5)	32/41 (78%)	
• Human Capacity	32/41 (78.0%)	32/32 (100.0%)
• Fiscal Capacity	10/41 (24.4%)	10/32 (31.3%)
• Technical Capacity	1/41 (2.4%)	1/32 (3.1%)
Planning for TA Delivery (GTO Step 6)	10/111 (9%)	
• Using a Collaborative TA Planning Process	5/111 (4.5%)	5/10 (50.0%)
• Setting a Timeline for TA Delivery	1/111 (0.9%)	1/10 (10.0%)
• Establishing Roles and Responsibilities Pertaining to TA Delivery	1/111 (0.9%)	1/10 (10.0%)
Process Evaluation of TA Delivery (GTO Step 7)	56/111 (50.5%)	
• Assessment of Quality	7/111 (6.3%)	7/56 (12.5%)
• Assessment of Reach	28/111 (25.2%)	28/56 (50.0%)
• Assessment of Dosage	26/111 (23.4%)	26/56 (46.4%)
• Assessment of Satisfaction	28/111 (25.2%)	28/56 (50.0%)
• Making Midcourse Corrections	5/111 (4.5%)	5/56 (8.9%)
Outcome Evaluation (GTO Step 8)	87/111 (78.4%)	
• Outcome Evaluation Data Collection Process	36/111 (32.4%)	36/87 (41.4%)
○ Survey	26/111 (23.4%)	26/36 (72.2%)
○ Interview	17/111 (15.3%)	17/36 (47.2%)
○ Focus Group	4/111 (3.6%)	4/36 (11.1%)
• Consistency with Step 2 Goals	70/71 ^c (98.6%)	
• Reporting of Results	87/111 (78.4%)	87/87 (100.0%)
Continuous Quality Improvement (GTO Step 9)	13/111^b (11.7%)	
• Techniques for Continuous Feedback	1/111 (0.9%)	1/13 (7.7%)

• Quality Improvement Consortia / Communities of Practice	0/111 (0.0%)	0/13 (0.0%)
• Plan-Do-Study-Act Process	6/111 (5.4%)	6/13 (46.2%)
Sustainability (Step 10)	31/111^b (27.9%)	
• Sustainability Plan	0/111 (0.0%)	0/31 (0.0%)
• Selection of a Champion	4/111 (3.6%)	4/31 (12.9%)
• Integration of TA into Delivery System	13/111 (11.7%)	13/31 (41.9%)

^a Articles may be repeated within subheadings for steps reported in this table.

^b A subset of these articles mentioned the step generally without pausing to specify what the specific techniques were.

^c Denominator reflects number of articles that report Step 2 goals.

Table 3.4 TA Relationship Features Reported in Articles

Relationship Features	Frequency	Sub-Frequency
• Relationships Addressed	52/111 (46.8%)	
• Trust	8/111 ^a (7.2%)	8/52 (15.4%)
• Respect	4/111 (3.6%)	4/52 (7.7%)
• Collaboration	28/111 (25.2%)	28/52 (53.8%)
• Adjusting to Readiness	2/111 (1.8%)	2/52 (3.8%)
• Encouragement	10/111 (9.0%)	10/52 (19.2%)
• Roles and Responsibilities	0/111 (0.0%)	0/52 (0.0%)
• Autonomy Supportive	8/111 (7.2%)	8/52 (15.4%)
• Rapport	4/111 (3.6%)	4/52 (7.7%)
• Other Relationship Characteristics	22/111 (19.8%)	22/52 (42.3%)

^a Multiple characteristics can be addressed in an article

Table 3.5 Life-Span Stages for Innovations Being Supported

Life-Span Stage	Frequency
Initiation of an Innovation	47/111 (42.3%)
Implementation of an Innovation	55/111 (49.5%)
Stability of an Innovation	7/111 (6.3%)
Information N/A about Life-Span Stage	2/111 (1.8%)

Table 3.6 TA techniques to support innovations in the Initiation and Implementation life-span stages

Variable	Initiation (N=47)		Implementation (N=55)		Test statistic	df	p
	N	%	N	%			
Step 1	32	68.1	36	65.5	$X^2 = .08$	1	.78
Step 2	41	87.2	49	89.1	$X^2 = .08$	1	.77
Step 3	19	40.4	19	34.5	$X^2 = .38$	1	.54
Step 4	15	78.9 ^a	8	42.1 ^a	$X^2 = 5.40$	1	.02
Step 5	16	84.2 ^a	15	78.9 ^a	$X^2 = .18$	1	.68
Step 6	3	6.4	7	12.7	$X^2 = 1.15$	1	.28
Step 7	22	46.8	29	52.7	$X^2 = .36$	1	.55
Step 8	39	83.0	42	76.4	$X^2 = .68$	1	.41
Step 9	7	14.9	6	10.9	$X^2 = .36$	1	.55
Step 10	11	23.4	18	32.7	$X^2 = 1.08$	1	.30

Table 3.7 TA relationships in the Initiation and Implementation life-span stages

Variable	Initiation (N=47)		Implementation (N=55)		Test statistic	df	p
	N	%	N	%			
General	24	51.1	24	43.6	$X^2 = 0.56$	1	.45
Trust	6	12.8	2	3.6	<i>Fisher's</i>	1	.14
Respect	4	8.5	0	0.0	<i>Fisher's</i>	1	.04
Collaboration	17	36.2	10	18.2	$X^2 = 4.21$	1	.04
Adjusting to Readiness	0	0.0	1	1.8	--	--	--
Encouragement	1	2.1	8	14.5	<i>Fisher's</i>	1	.04
Autonomy	4	8.5	4	7.3	<i>Fisher's</i>	1	1.0
Supportive Roles	0	0.0	0	0.0	--	--	--
Rapport	2	4.3	2	3.6	<i>Fisher's</i>	1	1.0

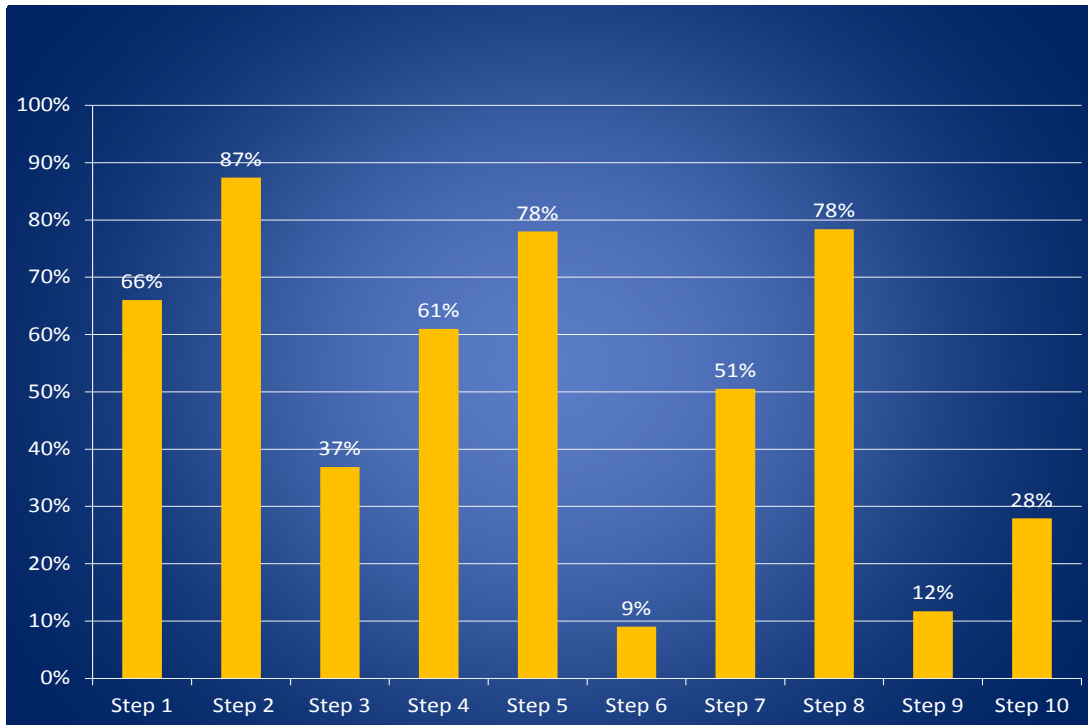


Figure 3.1 Utilization of Techniques (GTO Steps) in the TA Process

CHAPTER IV

CONCLUSION

The review of articles in this synthesis was based on the premise that in order to reach TA outcomes, it is necessary for there to be quality in both TA techniques and relationships. Therefore, frames for reviewing techniques and relationships were incorporated into the synthesis. An additional frame was used to explore how TA techniques and relationships are influenced by the life-span stage of the innovation being supported.

A vision for this work entails gaining a better understanding of the literature through each of the frames individually as well as through their combination. A multi-frame understanding of TA will only begin to be realized in this synthesis; subsequent work will be needed to further explore the connections. After discussing each of the frames and providing some thoughts about their interaction, this chapter will close by highlighting limitations of this synthesis and some implications for practice.

4.1 Technical Assistance Techniques

The review of articles found very few instances where an explicit model or organizing framework was used to plan, implement, and/or evaluate TA. Thus, although

TA is widely practiced, it is not well defined or clearly operationalized into a series or sequence of techniques. It even appears that the use of TA techniques is somewhat chaotic; there are major inconsistencies in the literature and there is no agreement on the necessary ingredients.

Getting To Outcomes (GTO) was utilized as a listing of techniques, not because it has been validated as a TA model, but because it represents a model with face-validity that is based on a sequence of individual steps. A review of the literature using the ten GTO steps as a frame revealed that although each of the steps are reported to be used, there are differences in the prevalence of certain steps as well as in the extent to which steps were addressed in a systematic fashion.

The needs/resource assessment (GTO Step 1) was one of the more commonly reported steps addressed and it appears that a majority of the articles are performing this step in a rigorous way. This rigor is reflected in the fact that many articles described processes for data collection, (e.g., administration of a survey), data analysis, and the reporting and interpreting of results. In short, the TA needs/resource assessment is an example of a step that it is being provided frequently *and* with considerable depth.

Setting TA goals (GTO Step 2) was also commonly reported, although without the level of rigor or specification found in Step 1. There are important aspects of the step that many articles appear to omit. Most obvious and troublesome is that only a small handful of articles translated TA goals into SMART (specific, measurable, attainable, realistic, and time-bound) desired outcomes. Nor were many of the goals systematically/explicitly based on the results of a prior needs/resource assessment.

Overall, this speaks to the notion that just because a step is addressed does not mean that it is done in a systematic, quality-based way. In addition, outcome evaluation (GTO Step 8) was heavily reported but the rigor of the step was low. The fact that the initial goals were not made SMART appears to have set the tone for less precise outcome evaluations that have questionable value.

It appears that the “best practice movement” has not accelerated at the same speed in TA as in service Delivery Systems. Only about a third of the articles reported best practices for TA. Fortunately, this still amounts to a large enough set of articles to draw some overarching themes about the kinds of best TA practices that are being selected. There are two overarching ways to conceptualize the best TA practices that were reported in the articles reviewed, the first of which is broader in scope than the second:

- 1) *Broad processes for enhancing the participation and empowerment of the recipient.* There is a maxim, often attributed to Confucius: “Give a man a fish, you feed him for a day; but, teach a man to fish and you feed him for a lifetime.” TA providers have expertise that recipients don’t have, and it may sometimes seem more efficient or simpler to step in and fix the recipients’ problems for them. The weakness with the “fix it” approach is that the recipients’ problems will likely resurface and the TA provider will not always be around to help. Alternatively, as seen in a number of reviewed articles, TA providers can work with recipients to enhance their participation and empowerment so that they can take ownership over their own needs and learn how to effectively address them. For example, a key role of TA providers identified by Fouad et al. (2005) involves identifying the indigenous strengths

of the community being supported, and then helping to leverage these strengths so that recipients can adopt an innovation and implement it with quality. These broad processes are highly consistent with the notion of capacity-building and the definition of TA offered at the beginning of this synthesis.

- 2) *More focused best TA practices (including diffusion of innovation-oriented techniques, and promoting adult learning)*. Articles indicated the selection of more specific, focused best TA practices (compared to the broad processes described earlier), which in some cases can operationalize the previously described processes for enhancing the participation and empowerment of the recipient. These best TA practices include *diffusion of innovation-oriented techniques* and *promoting adult learning*. Diffusion of innovation-related techniques are especially appropriate for building the recipient's motivation to adopt an innovation (Geiger et al., 2002). While building motivation is essential and foundational, the integration of adult learning principles (e.g., Materna et al., 2002) into TA can help the recipient to understand and actively use the innovation in practice (in other words, adult learning would be most relevant after a decision to adopt, or with a presupposition that the recipient is motivated).

The best practices mentioned above are generally consistent with a proactive TA approach, which is a strategic approach for bringing an innovation to end-users (recipients) and then supporting the adoption and use of the innovation (Ray et al., 2012; Wandersman et al., 2012). It is unlikely that a purely reactive or responsive TA approach

would adequately accommodate many of the best TA practices that were identified via this synthesis, including diffusion of innovation-oriented techniques (to build motivation), and those related to adult learning (to build knowledge and skills). It similarly appears that these practices require high TA dosage (ongoing, regularly scheduled activities) to deliver, in contrast to brief and discrete events. In addition, the finding that on-site and off-site TA were both heavily utilized suggests that hands-on, experiential learning – which is best accomplished on-site (Becker et al., 2008; Feinberg, Ridenour, & Greenberg, 2008) – is important but needs to be supplemented by virtual TA modalities in the interest of efficiency and to reduce travel costs (Feinberg et al., 2008; Young, Montgomery, Nycum, Burns-Martin, & Buller, 2006).

The fact that fit (GTO Step 4) was frequently addressed in articles suggests that there is some level of recognition that best TA practices should be selected in light of the settings within which TA is delivered (O'Donnell et al., 2000). Articles addressing this step largely emphasized the extent to which best TA practices fit with the recipients' daily activities and organizational operations. This is helpful because TA is most effective when it is grounded in local practices and routines (Gersten, Chard, & Baker, 2000; Gersten, Woodward, & Morvant, 1992). A surprising finding is that so few articles addressing this step considered how the TA being provided fits with other TA/support that recipients were receiving. This suggests that there may be duplication or non-coordination in TA services, which is neither efficient nor cost effective. Alternatively, it may suggest that organizations typically have access to TA from only one source, and hence checking for duplication is unnecessary.

Of the articles assessing capacity (GTO Step 5), many looked at human capacities but just one article reported assessing technical capacity, which is odd given the fact that more than half of the articles reported the delivery of virtual TA. Technical capacities, such as video conferencing platforms, would seem to be essential. It may be the case, however, that the technical capacities for delivering virtual TA were considered implicitly and not as a formal technique that would be written up in the article.

For process evaluation (GTO Step 7), it is not surprising that so few articles assessed quality because the construct of quality can be challenging to operationalize and measure (J. Scaccia, personal communication, September 4, 2014). Second, it is interesting to see that many articles measure reach (i.e., quantity of participants receiving TA). Assessing reach allows for information about the extent to which TA is penetrating into the organization or system over and above an individual or small group, which can be an important area of focus in a context at large where staff turnover is so common. Third, few articles indicated making midcourse corrections based on process evaluation. While this could be a function of not having a need for the changes, a more plausible interpretation is that midcourse corrections occurred but in a largely implicit, non-data-driven fashion.

TA planning (GTO Step 6) was rarely utilized, and when this step *was* reported it was addressed generally and in a non-structured way. For example, only one article explicitly mentioned having a plan with a timeline and specific roles and responsibilities for TA delivery. Having a plan that specifies who, when, where, and how TA will be delivered is instrumental in providing proactive TA. Although 62% of the articles specified the delivery of regularly scheduled TA activities (e.g., monthly calls), the

absence of TA plans suggests that TA providers are still operating in a largely reactively and non-strategic fashion (TA can be reactive even when there are surface features of proactive TA such as having monthly calls).

In addition to planning, continuous quality improvement (CQI) (GTO Step 9), and sustainability (GTO Step 10) were reported much less frequently compared to other steps. The low frequencies for Steps 9 and 10 are not unexpected given that these steps are not traditionally addressed by TA providers (Katz et al., 2014).

In summary, nearly all of the articles lacked a model or organizing framework about how to provide TA using specific techniques. This fact suggests high variability in the use of techniques, and it is not surprising that, when applying GTO as a frame, there was also variability in the use of individual steps and the levels of rigor contained therein.

4.2 Technical Assistance Relationships

Given that relationships are an essential part of TA (Butterfoss, 2004; Wandersman et al., 2012), it is not surprising that relationships were addressed in as many as about half of the reviewed articles. Collaboration, encouragement, and trust were the most frequently mentioned relationship features. The fact that collaboration frequently came up in articles as a relationship feature suggests that when attention is given to relationships, there is likely to be an effort to avoid setting up a situation where recipients are just passive – akin to the “banking” model in education that Freire (1974) complained so much about. Instead, TA recipients are active agents who are always learning and growing and could themselves serve as a resource to others in the future.

Encouragement appears to be another essential part of the TA relationship, as recipients will often have doubts and anxiety when embarking on something new. Encouragement can help to build the recipient's self-efficacy (Bandura, 1994) or confidence in successively executing an innovative practice. Although the strongest source of confidence is actually mastering the behavior, until this happens, it is helpful for TA providers to build recipients' confidence through encouragement.

Having a trusting TA relationship was also emphasized in many articles, along with a need for TA providers to be non-judgmental and strengths-based. These features are notable in combination with the fact that about half of the articles indicated that TA providers also had a quality assurance role (to help ensure that recipients are meeting certain expectations for performance). This role would generally arise in situations where the recipient is not the same as the client/funder – a not infrequent occurrence, as noted by Fruchter et al. (1998). When TA providers have a quality assurance role, recipients may have the perception that it is risky to be fully candid (Mitchell, Florin, & Steventon, 2002), which in turn can limit the extent to which TA can be helpful. Therefore, establishing trust (which could include full disclosure about the limits of confidentiality), and being non-judgmental and strengths-based all have value in terms of helping to temper some reluctance that recipients may have about sharing sensitive information (Chen, 2001; O'Sullivan & O'Sullivan, 1998).

It is unclear as to why some seemingly important relationship features were so infrequently reported, including rapport-building. Recall that TA planning was also under-reported (as noted in the techniques section), but this does not necessarily indicate that planning did not occur. Similarly, the fact that few articles did not report rapport-

building does not necessarily mean that there weren't efforts to build positive rapport. This may have occurred in an implicit way, or perhaps even in an explicit and intentional way, but it was, nevertheless, not reported in the reviewed articles.

4.3 Techniques and Relationships According to the Life-Span of the Innovation

Only a small number of articles described providing TA for recipients at the stability stage of an innovation, meaning that TA providers did not tend to work with recipients who already had an innovation in place and were now seeking to sustain it. This can be problematic because it has been argued that true capacity that is built is sustainable (Simmons, Reynolds, & Swinburn, 2011; Stillman, David, Kabria, & Thi Phan, 2014). An important role for TA providers would involve helping to ensure that capacity built through TA is sustainable.

Variance in the use of TA techniques is independent of where the recipients are in terms of the innovation's life-span. One exception involves the assessment of fit (GTO Step 4), in that this step was significantly more likely to be reported for articles in the initiation stage. This non-random association speaks to the fact that issues of fit between TA services and the recipient are especially important when working at a more foundational stage (Cherniss, 1993; Thomas, Gatz, & Luczak, 1997; Prilletsensky, Peirson, & Nelson, 1997).

There were, however, some differences between stages in terms of the positive reporting of several specific relationship features. The most robust finding was a difference in collaboration, in that this feature was emphasized more in articles describing the initiation stage of the life-span. In some respects, this finding is

counterintuitive as in this earlier stage recipients might be overwhelmed and would seemingly benefit from a more directive and perhaps less collaborative approach. Of course, the decreased emphasis on collaboration in the implementation stage does not necessarily mean that the TA recipients have less of a voice; it may be that there is less collaboration because TA providers may let go and allow the recipients to have more control over the direction of the TA process (e.g., decisions about which knowledge and skills to work on) as the recipients develop greater capacity (Fawcett et al., 1995).

Having a respectful relationship was also significantly more likely to be emphasized at the initiation stage. Although having a respectful relationship would seemingly be important at all stages, it appears that respect is so foundational that if this feature were to be absent, subsequent stages in TA would either not occur, or would occur but not be successful (Tang, Nutbeam, Kong, Wang, & Yan, 2005). Moreover, it may be that the topics that are commonly addressed by TA providers during the initiation stage are politically sensitive, and respect is therefore a *sine qua non* (Florin et al., 1993). On the other hand, trust was independent of the innovation life-span cycle, suggesting that it is important to have a trusting relationship across the entire TA process (e.g., Wandersman et al., 2012).

The only relationship feature that was significantly more likely to be reported at the implementation stage was encouragement, which, as suggested earlier, may be especially helpful when recipients are involved in challenging tasks associated with mastering an innovation. Encouragement may thus be especially important when TA providers are supporting recipients' active efforts to implement an innovation with

quality, and less of a priority when TA providers are first starting to work with recipients on issues such as getting leadership on board and facilitating buy-in from staff.

4.4 Toward an Integrative Model (Techniques, Relationships, and a Life-Span Perspective)

This part of the Conclusion chapter will shed some light on how the three frames used in this synthesis interact. The nature of this interaction can be further developed in the years to come. The intent here is to raise awareness about the combination of the frames as an alternative to thinking about each frame as standing alone.

1. *TA techniques are not sufficient and should be augmented with relationships.*

Trust, collaboration, respect, and encouragement were frequent foci for relationships in the articles reviewed for this synthesis. Each of these relationship features has significance for TA providers' use of techniques. For example, even with highly systematic techniques in place for assessing needs, these efforts will be limited if the recipients do not trust the TA providers and are uncomfortable sharing information about their true needs. In addition, if the process of selecting TA goals is not truly a collaborative effort, it can lead to the delivery of TA services that are incongruent with what the recipients are doing or are aspiring to be doing.

2. *Relationships are not sufficient and should be augmented with techniques.* A

TA relationship needs to be moving forward in a way that is productive and efficient. Even when there is a strong relationship, problems can emerge if techniques are not used. For example, TA providers and recipients may have a

strong enough relationship such that they can rather easily reach consensus on a TA goal, but if the goal is not translated into a SMART (specific, measurable, attainable, realistic, time-bound) TA outcome there is a risk that the TA process will not be appropriately focused.

3. *Some features of TA relationships are stage-dependent.* Although a relationship is important throughout the whole TA process (E. Freeman, personal communication, June 25, 2014), specific relationship features (collaboration, respect, encouragement) are more likely to be expressed at certain stages of the innovation. It is useful to bring some of these trends and natural connections to the surface in order to plant seeds for more explicit knowledge about how to plan, implement, and evaluate a quality TA relationship.
4. Based on this articles reviewed for this synthesis, few techniques appear to be stage-dependent. It is possible, however, that additional differences would be revealed with more detailed analyses housed within each of the steps. For example, while TA providers are equally likely to select best TA practices at each stage, it may be that particular best practices are more likely to be selected at one stage over another. This may be an area for future research, along with the items to be mentioned in the next section.

4.5 Limitations & Areas for Future Research

One potential limitation of this synthesis relates to whether the items being coded were implicitly versus explicitly mentioned in articles. The fact that an article does not

mention a technique (GTO step) or relationship feature does not mean that it was not actually addressed in the work (J. Needleman, personal communication, August 5, 2014). For example, it may be that a TA project had a goal guiding the work but this goal was not explicitly stated in the article. In this case, the article would not be coded for goals (GTO Step 2), although to a certain extent there may have been (unreported) goal-setting. More broadly, it is important to keep in mind that the object of analysis is the written product describing the TA process rather than the TA process itself (this is out of necessity and the latter is obviously the key interest).

Second, a decision was made that it would not be feasible to capture information from articles about the measurable extent to which TA made a positive difference in Delivery Systems. As mentioned above, a majority of the TA goals reported in the articles were not translated into SMART outcomes. Largely stemming from this omission, information provided around goal attainment lacked sufficient quantifiable rigor, which made it difficult, if not impossible, to draw conclusions about TA effectiveness. The omission also serves as a barrier to identifying processes (i.e., techniques and relationship features) that were most influential. Another factor to consider that presents a complication is that a majority of the articles integrated other support components (e.g., tools, training) in addition to TA, and any inferences about effectiveness would need to account for these non-TA influences. To further advance the field, a future analysis might dig deeper into this dataset and determine how to best deal with these issues.

Third, it would be useful to do some additional stratification of the articles to permit deeper information about similarities and differences in TA across different kinds

of situations in which TA is typically delivered. This includes both the level of analysis (e.g., community versus organization) for TA delivery as well as the content area for the innovation that is being supported. For example, it may be that there are some differences in the use of TA techniques, relationship features, and the role of the life-span based on whether TA is provided in the context of mental health versus other service delivery sectors.

Fourth, the innovation life-span model used as a frame for this synthesis assumes that it is normal for TA providers to work with recipients at an initiation stage, followed by working with them at an implementation stage and finally at a stability stage. But only a small handful of articles reported that TA providers worked with recipients at more than one of these stages. As a next step, it would be useful to identify a small set of articles reporting more than one stage and conduct a multiple case study (Stake, 2013) in order to more deeply assess TA according to the innovation life-span.

4.6 Some Implications for Practice

Consistent with the Interactive Systems Framework for Dissemination and Implementation, it is important to explore how the findings of this synthesis can be relevant to the everyday practice of TA.

1. The results of this synthesis indicate that some techniques are underutilized (e.g., Step 6 – planning) and that even when techniques *are* well utilized they are not always performed in as complete a way as would be necessary for reaching desired outcomes. For example, many articles set TA goals, but there were not as many articles that described conducting the step rigorously,

including setting SMART desired outcomes. Therefore, TA providers should ensure that techniques (GTO steps) are utilized *and* that they are carried out with sufficient rigor. A checklist might be developed to provide guidance to TA providers about the sequence of steps or techniques that are proposed in GTO, and that details how to carry out these steps in a way that is rigorous and results-based.

2. We know that TA relationships are so important but relationships are often seen as either “there” or “not there,” without serious insight into the features that make for a quality relationship. This synthesis reveals some relationship features that are commonly addressed, including collaboration and encouragement. Although these features can be further unpacked, it is useful to have such a list of features in place for TA providers – which, in the future, could presumably be reflected in a field-friendly checklist format.
3. *The first two implications flow from science to practice, while the following implication switches the direction.* The TA provider needs to be strategic about how techniques and relationships can be best calibrated to fit the life-span stage of the innovation that is being supported. As important as this is, some key questions remain. For example, the results of this synthesis show few differences in techniques used at different life-span stages. This could mean that it truly is the case that decisions about techniques are independent of the life-span, or it could be that there are differences that the synthesis was not sensitive enough to identify. It would be helpful to have contributions from TA providers to help compile this knowledge base.

4.7 On the Need for Standards to Enhance Quality and Accountability in TA

The findings from the synthesis – particularly under the techniques frame – are alarming. Although much money and time is invested into TA, we have seen that TA is often delivered with insufficient rigor. What can be done to increase the extent to which TA providers are embodying exemplary practices within each of the three frames in this synthesis (techniques, relationships, life-span)?

There is a noticeable absence of widely recognized standards for high-quality TA (in the articles reviewed for this synthesis as well as more generally). Having such standards available would allow for an objective perspective about quality that could be used to guide decision-making about necessary improvements and provide a lens for making judgments about whether TA was properly executed. The standards should include items relevant to the three frames in this synthesis, including having a strong theory or conceptual foundation, strategically using the right techniques, having quality relationships, and appropriately adjusting TA to the life-span stage of the innovation being supported. In addition to making such standards widely available, there should be oversight to ensure that the standards are properly brought into practice. Agencies or foundations that are funding TA contractors should design requests for proposals around these standards, and an important part of the evaluation of the proposal should focus on the extent to which the standards are reflected in the proposed plan for TA delivery. In addition, the evaluation of the funded contractor's TA delivery should focus on the extent to which TA standards are accomplished.

While standards usually exist for the Delivery System's implementation of innovations, it is much, much rarer for there to be standards for the Support System's

implementation of TA. Having TA standards available and enforced should help to remediate many of the gaps that were observed in this synthesis.

4.8 Summary

A synthesis of TA literature is necessary because billions of dollars are spent on TA and the stakes are high but little is known about how to provide TA with quality. This synthesis was conducted in order to take stock of what we currently know about how TA is delivered. Three major frames were used to advance our understanding about how to provide TA with quality (techniques, relationships, innovation life-span). For each of the frames (particularly the frame for techniques), the overall level of rigor was low. Given all of the resources (finances, time) going into TA, there is a significant need for improvement.

Techniques. In the absence of a known alternative for specifying and sequencing techniques that are utilized in the TA process, Getting To Outcomes (GTO) was used as a frame for reviewing techniques. The review of articles confirmed that, with one or two exceptions, there is indeed a lack of a common model or organizing approach for selecting and using TA techniques. When GTO was applied as a frame, very high variability was observed in the utilization and rigor of individual steps. Some steps were not reported often, including continuous quality improvement (GTO Step 9) and sustainability (GTO Step 10). Only a modest number of articles reported selecting best TA practices (GTO Step 3), but those that did were likely to assess fit (GTO Step 4) and capacity (GTO Step 5). A surprisingly small number of articles reported a TA planning (GTO Step 6) process. Several steps are reported more frequently, but with less rigor,

including setting TA goals (GTO Step 2) and outcome evaluation (GTO Step). Other steps, such as needs/resource assessment (GTO Step 1) and process evaluation (GTO Step 7), were both reported frequently and were conducted with greater rigor compared to other steps.

Relationships. A set of relationship features commonly reported in a sample of TA and related literature (e.g., consultation) was used as a frame for reviewing relationships in the articles selected for this synthesis. Relationships were addressed in as many as half of the articles reviewed, which indicates that relationships may be an important part of providing TA with quality. The most frequently addressed relationship features were collaboration, encouragement, and trust. Although relationships were relatively frequently addressed, there is still a need for TA providers to more explicitly address relationship issues and accumulate practice-based evidence about how to build quality TA relationships.

Innovation life-span. Articles were roughly split in terms of whether TA was provided to recipients who were initiating an innovation versus those who were in a stage where the innovation was being actively implemented. Very few articles addressed TA for innovations that were being supported past the implementation stage. The only difference in the use of techniques between articles in the initiation and implementation stages was in regard to assessment of fit (GTO Step 4) (it was significantly more likely to be addressed in the initiation stage). It is possible that the high variability observed around the use of techniques may preclude non-random association that might otherwise be observed between techniques and life-span stages. There were some differences between the stages in relationship features, in that collaboration and respect were

significantly more likely to be addressed by articles in the initiation stage, whereas encouragement was significantly more likely to be addressed by articles in the implementation stage.

With an eye toward practical application, in the absence of a strong alternative, TA providers could benefit from a structured checklist that includes a listing of GTO steps to provide guidance around the selection of techniques. TA providers would also benefit from a checklist of relationship features derived from the literature, which would include prompts for emphasizing some of the relationship features at particular life-span stages.

In closing, the findings of this synthesis indicate that TA needs to be provided much more systematically. In order to move the field in this direction and to assure greater quality and accountability, it is necessary develop standards for high-quality TA. The frames used in this synthesis (techniques, relationships, innovation life-span) can be used as a starting point for identifying standards that TA providers should be held accountable for. Funders should integrate these standards into TA requirements and QI/QA should be used to assure that the standards are appropriately embodied in TA practice.

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GTO as a Painter's Palette



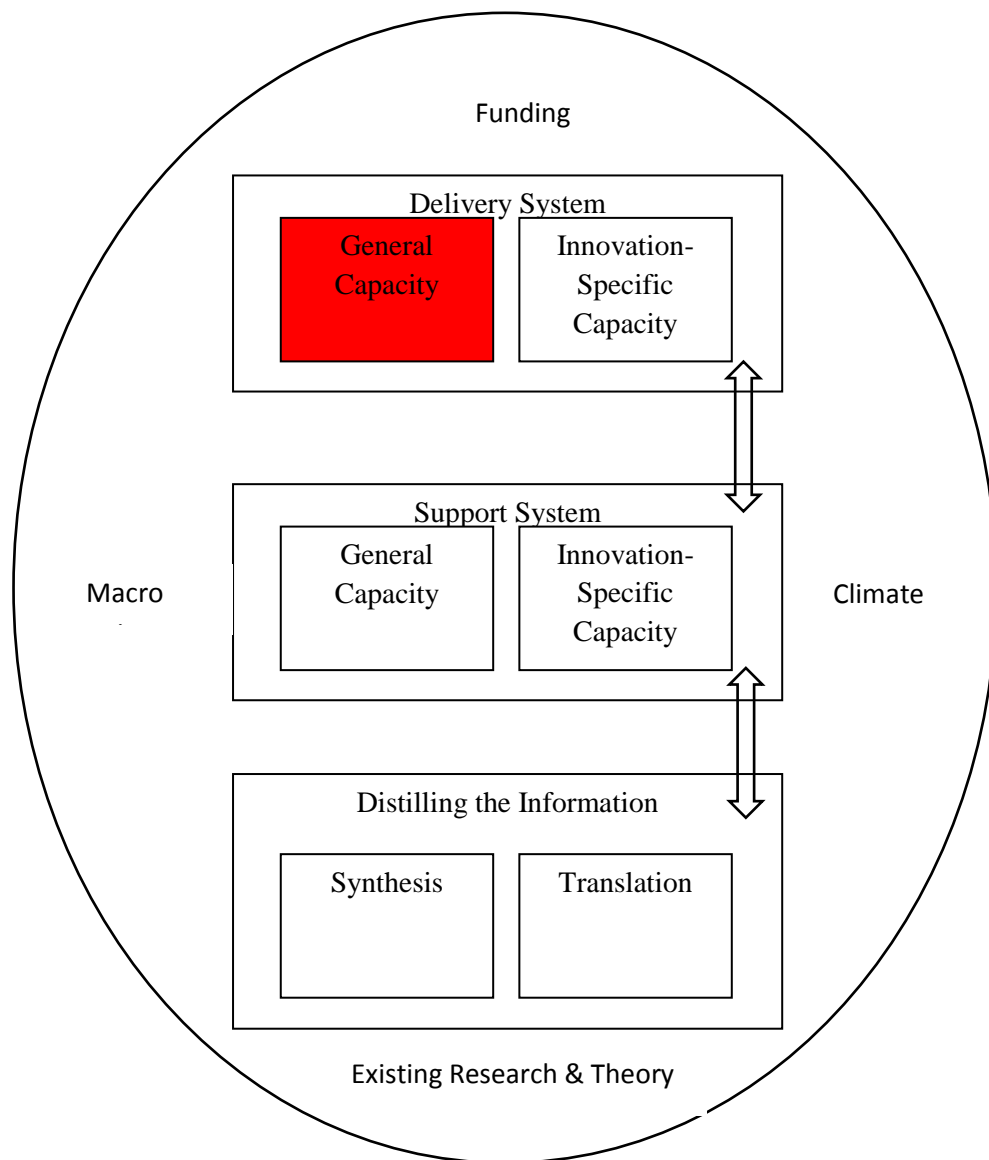
APPENDIX B: A Frame for Reviewing TA Relationships

Relationship Features ¹	Literature			
	Technical Assistance	Consultation	Adult Mentorship	Coaching
Trust	✓	✓		
Respect	✓	✓		
Collaboration	✓	✓		
Adjusting to readiness	✓	✓		
Encouragement	✓	✓	✓	✓
Autonomy supportive	✓	✓		✓
Shared expectations about roles			✓	✓
Building rapport	✓	✓		

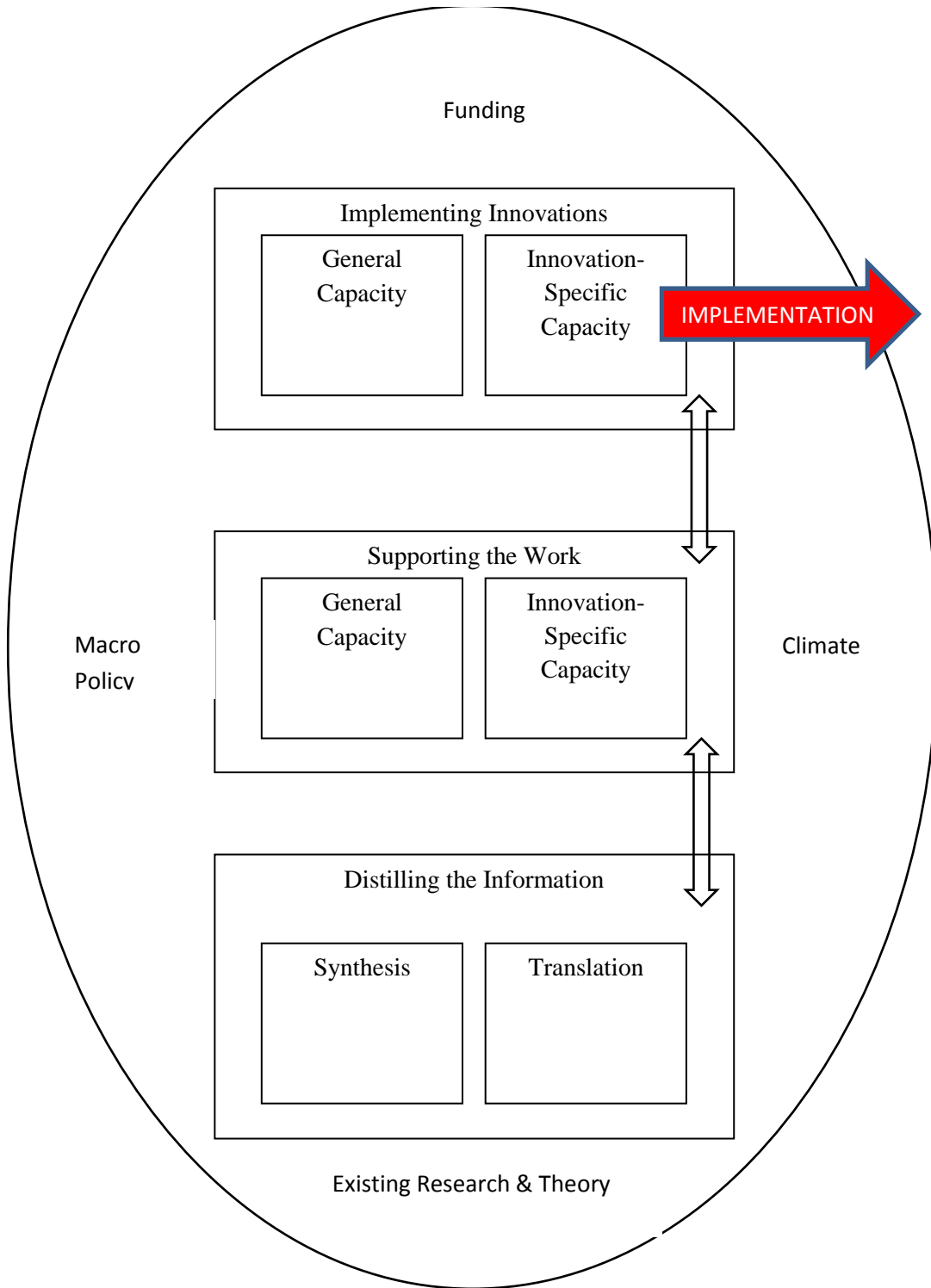
¹ Key informants in community psychology (Shirley Smith, Pam Imm, Andrea Lamont, Gordon Hannah, Jonathan Scaccia, Katie Knies, and Abe Wandersman) recommended three bodies of literature (consultation, coaching, adult mentorship) that could be used along with the TA literature to identify important relationship features. This table is based on a review of 28 articles drawn from the four bodies of literature and indicates relationship features that appeared in 1) at least one article per literature, and 2) at least two of the four bodies of literature.

APPENDIX C: The Interactive Systems Framework for Dissemination and Implementation as a Frame for Reviewing Life Span Capacity-Building

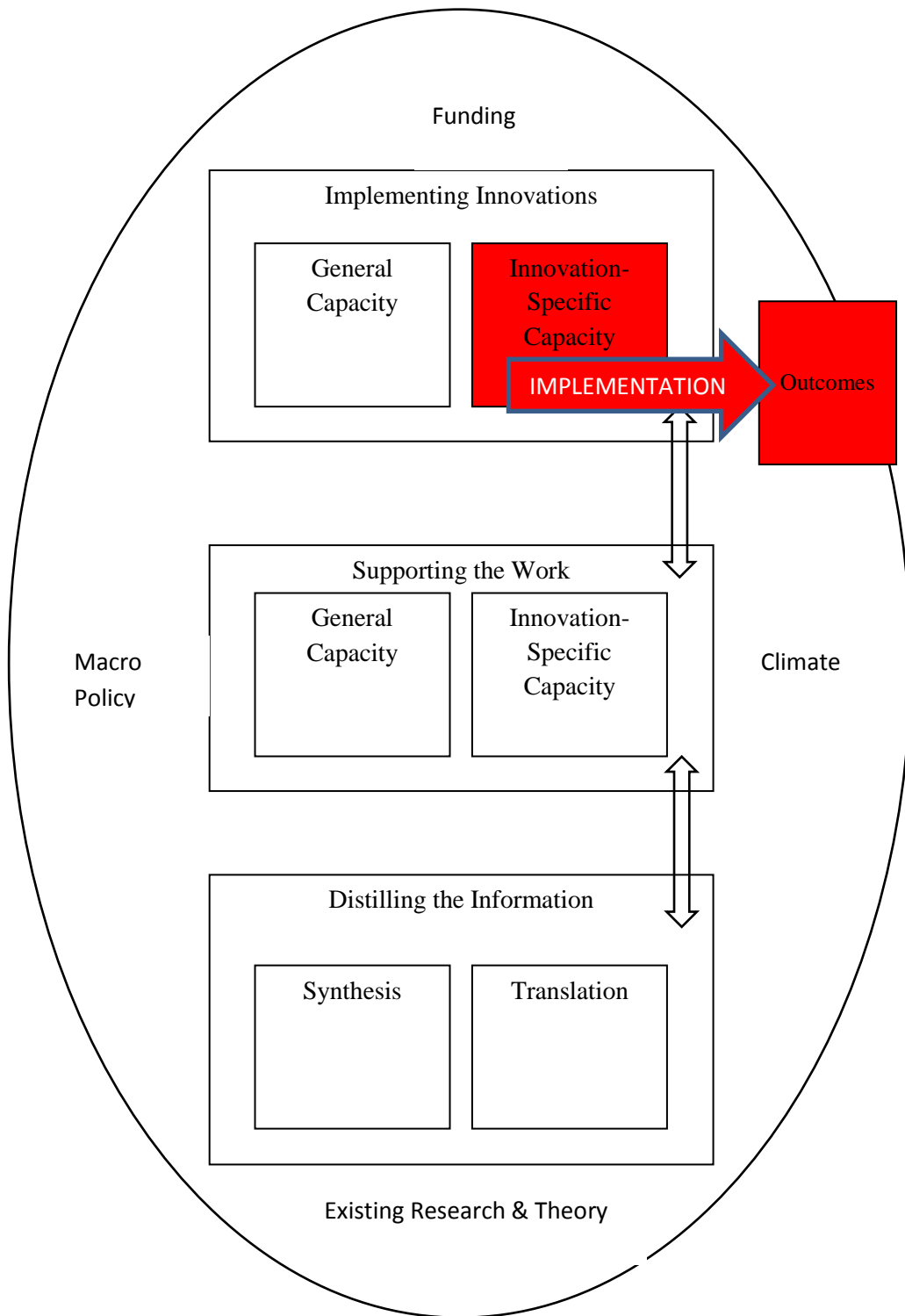
Initiation Stage



Implementation Stage



Stability Stage



APPENDIX D: Coding Form

Background Information	
Title and author(s):	
Content area:	<input type="checkbox"/> Health <input type="checkbox"/> Education <input type="checkbox"/> Justice <input type="checkbox"/> Drugs and/or alcohol <input type="checkbox"/> Early childhood <input type="checkbox"/> Youth development <input type="checkbox"/> Teen pregnancy <input type="checkbox"/> After-school <input type="checkbox"/> Mentoring <input type="checkbox"/> Employment/job-training <input type="checkbox"/> Community development <input type="checkbox"/> Housing/homelessness <input type="checkbox"/> Other (<i>specify</i>):
Primary level of analysis for project:	<input type="checkbox"/> Nation <input type="checkbox"/> State <input type="checkbox"/> Region <input type="checkbox"/> Community <input type="checkbox"/> Organization
Delivery system roles represented:	<input type="checkbox"/> Project director <input type="checkbox"/> Supervisor <input type="checkbox"/> Front-line provider <input type="checkbox"/> Other roles:

Overall project timeline:	<input type="checkbox"/> ≤ one year
	<input type="checkbox"/> ≤ two years, and > one year
	<input type="checkbox"/> ≤ three years, and > two years
	<input type="checkbox"/> ≤ four years, and > three years
	<input type="checkbox"/> ≤ five years, and > four years
	<input type="checkbox"/> > five years
	<input type="checkbox"/> Not reported

Step 1: Conducting a TA Needs/Resource Assessment

- Step not reported
 Step reported

Information source addresses techniques associated with:

<input type="checkbox"/> Collection of needs/resource data
<input type="checkbox"/> Analysis of needs/resource data
<input type="checkbox"/> Interpretation of needs/resource data

Techniques for collecting needs/resource data:	<input type="checkbox"/> Surveys
	<input type="checkbox"/> Interviews
	<input type="checkbox"/> Focus groups
	<input type="checkbox"/> Other (if yes, specify):

Summarize any results reported from a TA needs/resource assessment:

Step 2: Establishing TA Goals and Desired Outcomes

- Step not reported
 Step reported

Information source addresses:

<input type="checkbox"/> Selection of TA goal(s)	<input type="checkbox"/> Selection of desired TA outcome(s)
--	---

If information source mentions the selection of TA goal(s):

<input type="checkbox"/> TA goal(s) are based on a needs/resource assessment
--

If information source addresses the selection of desired TA outcome(s):

<input type="checkbox"/> Use of a systematic process (e.g., benchmarking) to select desired TA outcome(s)

Step 3: Identifying Best TA Practices

- Step not reported
- Step reported

Information source addresses:

<input type="checkbox"/> A review process to identify TA practice(s). <i>If yes, see items directly below.</i>
<input type="checkbox"/> Review process informed by the available evidence-base.
<input type="checkbox"/> Identified candidate TA practice(s):

Step 4: Addressing Issues of Fit

- Step not reported
- Step reported

Information source mentions:

Assessing fit between TA services and TA recipients':	<input type="checkbox"/> Readiness for the planned TA
	<input type="checkbox"/> Other priorities, timelines, and deliverables
	<input type="checkbox"/> Daily activities and organizational operations
	<input type="checkbox"/> Organizational culture
	<input type="checkbox"/> Other existing support services and resources

Step 5: Considering Capacity Issues

- Step not reported
- Step reported

Information source addresses:

Human capacities for implementing TA	<input type="checkbox"/> Internal staffing
	<input type="checkbox"/> External linkages, including content area specialists
	<input type="checkbox"/> Other human capacities (<i>if yes, specify</i>):
Fiscal capacities for implementing TA	<input type="checkbox"/> Funds for travel
	<input type="checkbox"/> Other fiscal capacities (<i>if yes, specify</i>):
Technical capacities for implementing TA	<input type="checkbox"/> Computer hardware
	<input type="checkbox"/> Software for electronic communications
	<input type="checkbox"/> Other technical capacities (<i>if yes, specify</i>):

Step 6: Developing a Plan

- Step not reported
- Step reported

Information source addresses a:

TA planning process	<input type="checkbox"/> TA planning includes collaboration between TA providers and TA recipients
TA planning product	<input type="checkbox"/> TA planning product includes a timeline for activities
	<input type="checkbox"/> TA planning product includes roles and responsibilities for either TA providers or TA recipients

Step 7: Conducting Process Evaluation / Implementation

- Step not reported
- Step reported

Information source mentions:

Techniques associated with generating components of process evaluation (check all that apply):	<input type="checkbox"/> Monitored the quality of TA activities.
	<input type="checkbox"/> Identified change and made midcourse corrections if needed.
	<input type="checkbox"/> Tracked TA reach (e.g., attendance, participation)
	<input type="checkbox"/> Assessed satisfaction with the TA process
	<input type="checkbox"/> Tracked TA dosage

Step 8: Conducting Outcome Evaluation

- Step not reported
- Step reported

Information source addresses:

Techniques for collecting outcome evaluation data: NA	<input type="checkbox"/> Surveys
	<input type="checkbox"/> Interviews
	<input type="checkbox"/> Focus groups
	<input type="checkbox"/> Other (if yes, specify):

If desired (i.e., projected/planned)TA outcomes were reported (see	<input type="checkbox"/> Performance on desired (Step 2) TA outcomes is either fully or partially captured in the outcome evaluation
	<input type="checkbox"/> Performance on desired (Step 2) TA outcomes is not captured

Step 2):	at all in the outcome evaluation
Summarize any results reported from a TA outcome evaluation:	

Step 9: Continuous Quality Improvement

- Step not reported
 Step reported

Information source addresses:

Techniques for conducting continuous quality improvement in TA:	<input type="checkbox"/> Techniques for continuous feedback (e.g., dashboard)
	<input type="checkbox"/> Quality improvement consortia /communities of practice
	<input type="checkbox"/> Plan-Do-Study-Act / Shewhart-based techniques
	<input type="checkbox"/> Other CQI techniques (<i>if yes, specify</i>):

Step 10: Addressing Sustainability

- Step not reported
 Step reported

Information source addresses:

Techniques for addressing sustainability issues in TA:	<input type="checkbox"/> Development of a sustainability plan
	<input type="checkbox"/> Identified a respected program champion
	<input type="checkbox"/> Integration of TA activities into a delivery system
	<input type="checkbox"/> Other sustainability techniques (<i>if yes, specify</i>):

TA Relationship Features

- Relationship features not reported
 Relationship features reported

TA relationship dimensions:	<input type="checkbox"/> Trust
	<input type="checkbox"/> Respect
	<input type="checkbox"/> Collaboration
	<input type="checkbox"/> Adjusting to readiness
	<input type="checkbox"/> Encouragement

	<input type="checkbox"/> Autonomy supportive
	<input type="checkbox"/> Shared expectations about roles
	<input type="checkbox"/> Building rapport
	<input type="checkbox"/> Other relationship dimensions (<i>if yes, specify</i>):

Implementation Life Span Stages Targeted by TA

- Content not reported
- Content reported

Stage in Life Span

<input type="checkbox"/> Initiation of an innovation (occurs prior to implementing an innovation)
<input type="checkbox"/> Implementation of an innovation (work involved in bringing an innovation into practice)
<input type="checkbox"/> Stability of an innovation (subsequent to implementation, refers to efforts around sustaining an innovation)

APPENDIX E: Data Analysis Plan

Frame #1 (Techniques)

Which techniques are used for TA strategic planning (conducting a needs/resource assessment, establishing goals and desired outcomes, identifying best practices, addressing issues of fit, considering capacity issues, action planning)?

- GTO Step 1
 - Number of information sources that address *needs/resources assessment* / total number of information sources
 - Number of information sources that mention the use of *surveys* / total number of information sources that address needs/resources assessment
 - Number of information sources that mention the use of *interviews* / total number of information sources that address needs/resources assessment
 - Number of information sources that mention the use of *focus groups* / total number of information sources that address needs/resources assessment
 - Number of information sources that mention the use of *additional techniques* / total number of information sources that address needs/resources assessment
 - Number of information sources that address *analysis of needs/resource data* / total number of information sources
 - Number of information sources that address *interpretation of needs/resource data* / total number of information sources
 - Number of information sources that report *results* from a TA needs/resources assessment / total number of information sources that mention a needs/resources assessment
- GTO Step 2
 - Number of information sources that address *selection of TA goals* / total number of information sources
 - Number of information sources that address *development of SMART desired TA outcomes* / total number of information sources
 - Number of information sources in which *TA goal(s) are based on a needs/resource assessment* / total number of information sources that mention the selection of TA goal(s)
 - Number of information sources reporting *use of a systematic process* (e.g., benchmarking) *to select desired TA outcome(s)* / total number of information sources that mention the selection of desired TA outcomes(s)

- GTO Step 3
 - Number of information sources that mention a *review process to identify TA practice(s)* / total number of information sources
 - Number of information sources that mention a *review process informed by the available evidence-base* / total number of information sources that mention a review process to identify TA practices(s)
 - Number of information sources that identify particular best TA practices / total number of information sources that mention a review process informed by the available evidence-base
- GTO Step 4
 - Number of information sources that mention *assessment of fit* / total number of information sources that mention selection of a best TA practice
 - Number of information sources that mention *assessment of readiness for the planned TA* / total number of information sources that mention assessment of fit
 - Number of information sources that mention *other priorities, timelines, and deliverables* / total number of information sources that mention assessment of fit
 - Number of information sources that mention *daily activities and organizational operations* / total number of information sources that mention assessment of fit
 - Number of information sources that mention *organizational culture* / total number of information sources that mention assessment of fit
 - Number of information sources that mention *organizational culture* / total number of information sources that mention assessment of fit
 - Number of information sources that mention *other existing support services and resources* / total number of information sources that mention assessment of fit
- GTO Step 5
 - Number of information sources that address techniques associated with capacities for implementing TA / total number of information sources
 - Number of information sources that address *human capacities* for implementing TA / total number of information sources that address techniques associated with capacities for implementing TA
 - Number of information sources that address *internal staffing* / total number of information sources that mention human capacities for implementing TA
 - Number of information sources that address *external linkages, including content area specialists* / total number of information sources that mention human capacities for implementing TA
 - Number of information sources that address *other human capacities* / total number of information sources that mention human capacities for implementing TA
 - Number of information sources that address *fiscal capacities* for implementing TA / total number of information sources that mention capacities for implementing TA
 - Number of information sources that address *funds for travel* / total number of information sources that mention fiscal capacities for implementing TA

- Number of information sources that address *other fiscal capacities* / total number of information sources that mention fiscal capacities for implementing TA
 - Number of information sources that address *technical capacities* for implementing TA / total number of information sources that mention capacities for implementing TA
- GTO Step 6
 - Number of information sources that address a *TA planning process* / total number of information sources
 - Number of information sources that address *collaborative TA planning* / total number of information sources that mention a TA planning process
 - Number of information sources that mention a *timeline for TA activities* / total number of information sources that address a TA planning process
 - Number of information sources that address *roles and responsibilities* for either TA providers or TA recipients / total number of information sources that address a TA planning process
- Which techniques are used for TA process evaluation, and outcome evaluation?
 - GTO Step 7
 - Number of information sources that address *TA process evaluation* / total number of information sources
 - Number of information sources that address techniques for *monitoring the quality of TA activities* / total number of information sources that mention TA process evaluation
 - Number of information sources that address *identifying change and/or making midcourse corrections* / total number of information sources that mention TA process evaluation
 - Number of information sources that address *tracking TA reach* / total number of information sources that mention TA process evaluation
 - Number of information sources that address *assessing satisfaction with the TA process* / total number of information sources that mention TA process evaluation
 - Number of information sources that address using *assessing dosage* / total number of information sources that mention TA process evaluation
 - GTO Step 8
 - Number of information sources that address TA outcome evaluation / total number of information sources
 - Number of information sources that indicate techniques for collecting TA outcome evaluation data / total number of information sources that address TA outcome evaluation
 - Number of information sources that mention the use of surveys / total number of information sources that mention techniques for collecting TA outcome evaluation data
 - Number of information sources that mention the use of interviews / total number of information sources that mention techniques for collecting TA outcome evaluation data

- Number of information sources that mention the use of focus groups / total number of information sources that mention techniques for collecting TA outcome evaluation data
 - Number of information sources that mention the use of additional techniques / total number of information sources that mention techniques for collecting TA outcome evaluation data
- Number of information sources that report results from a TA outcome evaluation / total number of information sources that mention a TA outcome evaluation
 - Number of information sources in which desired TA outcomes were reported (see Step 2) / total number of information sources that report results from a TA outcome evaluation
 - Number of information sources in which performance on desired (Step 2) TA outcomes is either partially or fully captured in the outcome evaluation / total number of information sources that report results from a TA outcome evaluation and reported desired (Step 2) TA outcomes
 - Number of information sources in which performance on desired (Step 2) TA outcomes is not captured at all in the outcome evaluation / total number of information sources that report results from a TA outcome evaluation and reported desired (Step 2) TA outcomes
- Which techniques are used for addressing TA CQI and sustainability?
 - GTO Step 9
 - Number of information sources that address using CQI techniques in TA / total number of information sources
 - Number of information sources that address techniques for continuous feedback (e.g., dashboard) / total number of information sources that address using CQI techniques in TA
 - Number of information sources that address quality improvement consortia /communities of practice / total number of information sources that address using CQI techniques in TA
 - Number of information sources that address Plan-Do-Study-Act / Shewhart-based techniques / total number of information sources that address using CQI techniques in TA
 - Number of information sources that address using other CQI techniques / total number of information sources that address using CQI techniques in TA
 - GTO Step 10
 - Number of information sources that address sustainability issues in TA / total number of information sources
 - Number of information sources that mention the development of a sustainability plan / total number of information sources that address sustainability issues in TA
 - Number of information sources that mention the identification of a respected program champion / total number of information sources that address sustainability issues in TA

- Number of information sources that mention the integration of TA activities into a delivery system / total number of information sources that address sustainability issues in TA
- Number of information sources that mention additional sustainability techniques / total number of information sources that address sustainability issues in TA

Frame #2 (Relationships)

- What are the most cited features of a quality TA relationship?
 - Number of information sources that address relationship issues in TA / total number of information sources
 - Number of information sources that address relationship issues pertaining to *trust* / total number of information sources that address relationship issues in TA
 - Number of information sources that address relationship issues pertaining to *respect* / total number of information sources that address relationship issues in TA
 - Number of information sources that address relationship issues pertaining to *collaboration* / total number of information sources that address relationship issues in TA
 - Number of information sources that address relationship issues pertaining to *adjusting to readiness* / total number of information sources that address relationship issues in TA
 - Number of information sources that address relationship issues pertaining to *encouragement* / total number of information sources that address relationship issues in TA
 - Number of information sources that address relationship issues pertaining to *supportive of autonomy* / total number of information sources that address relationship issues in TA
 - Number of information sources that address relationship issues pertaining to *shared expectations about roles* / total number of information sources that address relationship issues in TA
 - Number of information sources that address relationship issues pertaining to *building rapport* / total number of information sources that address relationship issues in TA
 - Number of information sources that address *other relationship features* / total number of information sources that address relationship issues in TA

Frame #3 (ISF life cycle)

- Does the literature support the validity and salience of a life span approach to framing TA activities?
 - Number of information sources addressing the “initiation” stage in the life span / total number of information sources
 - Number of information sources addressing the “implementation” stage in the life span / total number of information sources
 - Number of information sources addressing the “stability” stage of the life span / total number of information sources
 - Number of information sources that do not address any of the stages of the life span / total number of information sources
 - *A chi-square test will be conducted to compare the counts above*
- To what extent is there a relationship between the life-span stage and the use of TA techniques?

- To what extent is there a relationship between the life-span stage and the use of *strategic TA planning* techniques?
 - Number of information sources addressing the use of strategic TA planning techniques as part of the “initiation” stage in the life span / total number of information sources that address TA strategic planning
 - Number of information sources that address TA strategic planning with innovations in the “implementation” stage in the life span / total number of information sources that address TA strategic planning
 - Number of information sources that address TA strategic planning with innovations in the “stability” stage in the life span / total number of information sources that address TA strategic planning
 - *A chi-square test will be conducted to compare the counts above*
 - To what extent is there a relationship between the life-span stage and the use of TA process and/or outcome evaluation techniques?
 - Number of information sources that address TA process evaluation and/or outcome evaluation with innovations in the “initiation” stage in the life span / total number of information sources that address the use of TA process and/or outcome evaluation techniques
 - Number of information sources that address TA process evaluation and/or outcome evaluation with innovations in the “implementation” stage in the life span / total number of information sources that address the use of TA process and/or outcome evaluation techniques
 - Number of information sources that address TA process evaluation and/or outcome evaluation with innovations in the “stability” stage in the life span / total number of information sources that address the use of TA process and/or outcome evaluation techniques
 - *A chi-square test will be conducted to compare the counts above*
 - To what extent is there a relationship between the life-span stage and the use of TA continuous quality improvement and/or sustainability techniques?
 - Number of information sources that address TA continuous quality improvement and/or sustainability with innovations in the “initiation” stage in the life span / total number of information sources that address the use of TA continuous quality improvement and/or sustainability techniques
 - Number of information sources that address TA continuous quality improvement and/or sustainability with innovations in the “implementation” stage in the life span / total number of information sources that address the use of TA continuous quality improvement and/or sustainability techniques
 - number of information sources that address TA continuous quality improvement and/or sustainability with innovations in the “stability” stage in the life span / total number of information sources that address the use of TA continuous quality improvement and/or sustainability techniques
 - *A chi-square test will be conducted to compare the counts above*
 - To what extent is there a relationship between the life-span stage and the salience of specific relationship features?
 - To what extent is there a relationship between the life-span stage and the salience of *trust* as a relationship characteristic?
 - Number of information sources that address *trust* in the TA relationship with innovations in the “initiation” stage in the life span / total number of information sources that address *trust* in the TA relationship
 - Number of information sources that address *trust* in the TA relationship with innovations in the “implementation” stage in the life span / total number of information sources that address *trust* in the TA relationship
 - Number of information sources that address *trust* in the TA relationship with innovations in the “stability” stage in the life span / total number of information sources that address *trust* in the TA relationship
 - *A chi-square test will be conducted to compare the counts above*

- To what extent is there a relationship between the life-span stage and the salience of *respect* as a relationship characteristic?
 - Number of information sources that address *respect* in the TA relationship with innovations in the “initiation” stage in the life span / total number of information sources that address *respect* in the TA relationship
 - Number of information sources that address *respect* in the TA relationship with innovations in the “implementation” stage in the life span / total number of information sources that address *respect* in the TA relationship
 - Number of information sources that address *respect* in the TA relationship with innovations in the “stability” stage in the life span / total number of information sources that address *respect* in the TA relationship
 - *A chi-square test will be conducted to compare the counts above*
- To what extent is there a relationship between the life-span stage and the salience of *collaboration* as a relationship characteristic?
 - Number of information sources that address *collaboration* in the TA relationship with innovations in the “initiation” stage in the life span / total number of information sources that address *collaboration* in the TA relationship
 - Number of information sources that address *collaboration* in the TA relationship with innovations in the “implementation” stage in the life span / total number of information sources that address *collaboration* in the TA relationship
 - Number of information sources that address *collaboration* in the TA relationship with innovations in the “stability” stage in the life span / total number of information sources that address *collaboration* in the TA relationship
 - *A chi-square test will be conducted to compare the counts above*
- To what extent is there a relationship between the life-span stage and the salience of *adjusting to readiness* as a relationship characteristic?
 - Number of information sources that address *adjusting to readiness* in the TA relationship with innovations in the “initiation” stage in the life span / total number of information sources that address *adjusting to readiness* in the TA relationship
 - Number of information sources that address *adjusting to readiness* in the TA relationship with innovations in the “implementation” stage in the life span / total number of information sources that address *adjusting to readiness* in the TA relationship
 - Number of information sources that address *adjusting to readiness* in the TA relationship with innovations in the “stability” stage in the life span / total number of information sources that address *adjusting to readiness* in the TA relationship
 - *A chi-square test will be conducted to compare the counts above*
- To what extent is there a relationship between the life-span stage and the salience of *encouragement* as a relationship characteristic?
 - Number of information sources that address *encouragement* in the TA relationship with innovations in the “initiation” stage in the life span / total number of information sources that address *encouragement* in the TA relationship
 - Number of information sources that address *encouragement* in the TA relationship with innovations in the “implementation” stage in the life span / total number of information sources that address *encouragement* in the TA relationship
 - Number of information sources that address *encouragement* in the TA relationship with innovations in the “stability” stage in the life span / total number of information sources that address *encouragement* in the TA relationship
 - *A chi-square test will be conducted to compare the counts above*
- To what extent is there a relationship between the life-span stage and the salience of *supportive of autonomy* as a relationship characteristic?

- Number of information sources that address *supporting autonomy* in the TA relationship with innovations in the “initiation” stage in the life span / total number of information sources that address *supporting autonomy* in the TA relationship
- Number of information sources that address *supporting autonomy* in the TA relationship with innovations in the “implementation” stage in the life span / total number of information sources that address *supporting autonomy* in the TA relationship
- Number of information sources that address *supporting autonomy* in the TA relationship with innovations in the “stability” stage in the life span / total number of information sources that address *supporting autonomy* in the TA relationship
- *A chi-square test will be conducted to compare the counts above*
- To what extent is there a relationship between the life-span stage and the salience of *shared expectations of roles* as a relationship characteristic?
 - Number of information sources that address *shared expectations of roles* in the TA relationship with innovations in the “initiation” stage in the life span / total number of information sources that address *shared expectations of roles* in the TA relationship
 - Number of information sources that address *shared expectations of roles* in the TA relationship with innovations in the “implementation” stage in the life span / total number of information sources that address *shared expectations of roles* in the TA relationship
 - Number of information sources that address *shared expectations of roles* in the TA relationship with innovations in the “stability” stage in the life span / total number of information sources that address *shared expectations of roles* in the TA relationship
 - *A chi-square test will be conducted to compare the counts above*
- To what extent is there a relationship between the life-span stage and the salience of *building rapport* as a relationship characteristic?
 - number of information sources that address *building rapport* in the TA relationship with innovations in the “initiation” stage in the life span / total number of information sources that address *building rapport* in the TA relationship
 - number of information sources that address *building rapport* in the TA relationship with innovations in the “implementation” stage in the life span / total number of information sources that address *building rapport* in the TA relationship
 - number of information sources that address *building rapport* in the TA relationship with innovations in the “stability” stage in the life span / total number of information sources that address *building rapport* in the TA relationship
 - *A chi-square test will be conducted to compare the counts above*