Disciplined Inquiry: Using the *A+ Inquiry* Framework as a Tool for Eliminating Data Hoarding,

Mindless Decision-Making, and Other Barriers to Effective ESA Programming

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Education systems in the United States are faced with seemingly endless challenges that

potentially inhibit school impact on student learning. Such challenges may include inadequate

funding and resources, student misbehavior, low levels of student engagement and motivation,

poor teacher quality, weak leadership, lack of technology, or limited capacity for using data to

improve instruction (Le Floch et al., 2014). Education Service Agencies (ESA) serve as a source

of support for alleviating such challenges, contributing to improved teaching and learning

through a broad array of general and targeted services (Anderson & Bruckner, 2013). North

Dakota ESAs, for example, focus on providing support to schools in areas of professional

development, technology and technology support, data systems, school improvement, and

curriculum enrichment (North Dakota Regional Education Associations, 2014). The mere

existence of support services, however, does not guarantee that those services provided by ESAs

to schools are effective. Harmon, Keane, Leddick, Stephens, and Talbott (2012) proposed four

major criteria to be met by effective or exemplary ESAs, including future-oriented programming,

achieved and documented programmatic results, effective organizational practices and processes

in the development and delivery of programs, and capacity building among agency individuals

and other organizations and stakeholders. ESAs could increase levels at which these criteria are

met by using a disciplined inquiry framework to guide the mindful and deliberate collection,

analysis, dissemination, and use of relevant evidence to support organizational decisions and

actions.

Disciplined Inquiry

Embedding ongoing processes of disciplined inquiry within an ESA's organizational

culture can help ESAs determine the extent to which their programs are effective. Methods of disciplined inquiry represent intentional processes of asking and answering questions to improve understanding, create knowledge, inform decisions, and/or provide rationale for action, ultimately impacting change. Such methods require knowledge of not only how to find information, but how to effectively evaluate it and report the results in a coherent and precise manner (Booth, Colomb, & Williams, 2008). ESAs with inadequate inquiry capacity are at greater risk for encountering barriers to effective operations, such as data hoarding and mindless decision-making.

Data hoarding organizations get stuck in data accumulation traps, directing excessive amounts of knowledge, time, money, and other resources toward the collection of data that are never used. Mindless decision-making organizations make decisions in the absence of sound rationale, subsequently driving actions based on little or no evidence. Such organizations may think they make evidence-based decisions simply because they collect data. Consequently, a disconnect exists between data collection and decision--making because the decisions that are made are not based on the data that are collected. Increased inquiry capacity--marked by conscious awareness of the entire inquiry cycle--could help eliminate this type of disconnect. As a result, all collected data would have a place and a purpose, and all actions would be driven by mindful, evidence--based decisions.

Types of Disciplined Inquiry

Common types of disciplined inquiry include assessment, evaluation, and research (Burnaford, 2012). Assessment focuses on collecting, analyzing, and using information for purposes of informing decisions and improving learning. Banta (2002) indicated, "Assessment is a vehicle for improvement, not an end in itself...assessment produces data that guide

improvement on a continuing basis" (pp. 262-263). Evaluation refers to a context-specific judgment of the merit or worth of an object under evaluation, usually a program, to guide decisions about continuing, improving, or ending the program. According to Fitzpatrick, Sanders, and Worthen (2011), "Evaluation is the identification, clarification, and application of defensible criteria to determine an evaluation object's value, its merit or worth, in regard to those criteria" (p. 35). Stufflebeam (2000) argued, "The most important purpose of evaluation is not to prove but to improve" (p. 283). Research is designed to build on the theoretical, conceptual, and practical foundation of knowledge for a field of study. Glesne (2010) indicated that a research project is conducted to correct ignorance about something. In summary, assessment and evaluation inquiry processes strive to inform context-specific judgments and improvements, whereas research aims to create generalizable knowledge (Burnaford, 2012; Fitzpatrick et al., 2011).

Need for Greater Inquiry Capacity

Implementing consistent disciplined inquiry practices within ESA cultures could help optimize organizational capacity to meet the four exemplary criteria proposed by Harmon et al. (2012). Thorough methods of inquiry, however, do not always seem tangible to or well understood by ESA professionals. Fitzpatrick et al. (2011) emphasized the growing need for building inquiry capacities of organizational employees across a wide array of professional roles. Professionals have become increasingly responsible for participating in internal inquiry processes, yet many employees required to participate in such endeavors have little or no training in formal inquiry methods. The emergence of accreditation initiatives designed to support evidence-based continuous improvement in ESA domains, such as AdvancED for ESAs (AdvancED, 2013), reinforces the need for strengthening the disciplined inquiry competence of

all professionals in ESA settings.

Fitzpatrick et al. (2011) surmised that although several inquiry toolkits exist, few focus on how critical issues--such as intentionally defining purpose and considering appropriate use--intertwine with methods of data collection and analysis; they called for the creation of innovative solutions to help professionals with limited or no inquiry training become more skilled in methods of inquiry. A common and collective understanding of why and how individuals and organizations conduct research, assessment, or evaluation will empower others to address a problem, test a hypothesis, and acquire new knowledge through systematic processes (Burnaford, 2012).

Simplified Inquiry Framework: *A+ Inquiry*

Various frameworks have been developed and disseminated to help guide disciplined inquiry processes. Examples of existing models include Stufflebeam's (2000) CIPP model of evaluation; Borden's (2002) information cycle; Cohen, Manion, and Morrison's (2011) framework for action research; and Shermis and Daniels' (2002) research cycle. Although existing models could potentially be adapted for ESA purposes, few unite the broad array of inquiry types by their core functions and few are designed for targeted use in ESA settings.

The authors of this paper propose an innovative, simplified framework referred to as *A+ Inquiry*. The framework is intended to make often ambiguous methods of inquiry, including the critical stages of identifying appropriate purpose for and use of inquiry, more tangible for inexperienced and experienced inquirers alike. The creation and dissemination of new disciplined inquiry models, such as the *A+ Inquiry* framework, will enable methods of disciplined inquiry to resonate with a yet untapped array of professionals.

A+ Inquiry is a disciplined framework for asking and answering questions to optimize

ESA effectiveness, serving as a new lens through which to interpret and guide processes of disciplined inquiry that lead toward improved understanding, new knowledge, informed decisions, and meaningful change. The model strives to enhance competence with time-tested disciplined inquiry methods by uniting various types of inquiry with common language relevant to the core functionality of inquiry. Thus, the model empowers users with clearer understanding of how and why individuals and organizations engage in assessment, evaluation, research, or some other disciplined process of asking and answering questions.

   A+ Inquiry draws from tenets of alliteration and visualization to help improve memory of, and resonance with, the stages that comprise the framework. Research has found that alliteration (i.e. using words that begin with same letter), aids memorization of content (Bryant, MacLean, Bradley, & Crossland, 1990; Lea, Rapp, Elfenbein, Mitchel, & Romine, 2008; Stoll, 1940). Others have emphasized the important role that visualization (i.e. graphic representations of concepts) can play in enhancing resonance with abstract concepts (Gilbert, 2008; Tufte, 1990; Ware, 2000). As such, the combined application of alliteration and visualization could arguably promote an improved understanding of the specific role or roles that each stage plays, depicting a clearer image of how the stages collaboratively contribute to the full cycle of inquiry.

   The *A+ Inquiry* framework includes the following eight stages, bound together by the hub of *Awareness*: *Absorb, Ask, Accumulate, Access, Analyze, Answer, Announce,* and *Apply* (see Figure 1). The *A+ Inquiry* model strives to equip professionals with a continuous awareness of, and competence in, all stages that comprise a thorough inquiry process, positioning them with an ongoing capacity to ensure that, for any given inquiry, the right context is absorbed, the right questions are asked, the right data are accumulated, accessed, and analyzed, the right answers are derived, the right announcements are communicated, and the right application is made.
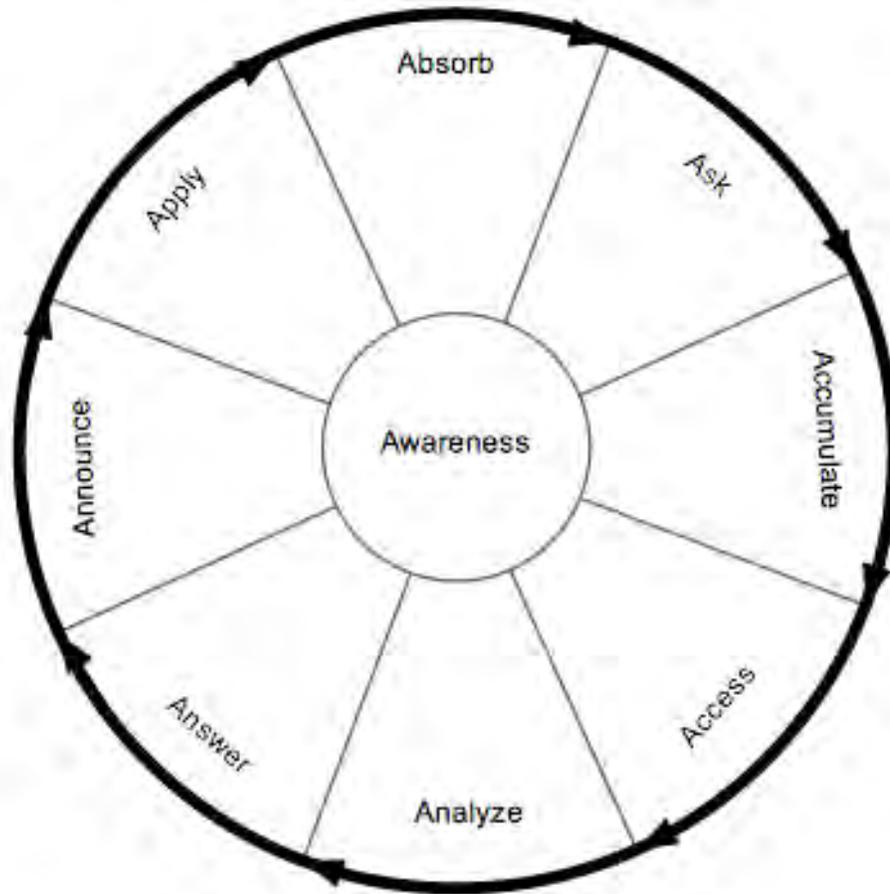
Figure 1. A+ Inquiry framework.

Subsequent sections of this paper address the importance of each stage, along with reflective prompts intended to support effective progression through each respective stage. Each section focuses on a specific stage and includes an ongoing example of an inquiry process in terms of what the respective stage might look like *without awareness* and what the respective stage might look like *with awareness*. A stage *without awareness* represents how limited attention toward the stage's role in the greater cycle could compromise the quality of, or completely derail, an inquiry process. A stage *with awareness* represents how attentive focus toward the stage's role in the greater cycle could contribute to a thorough, impactful inquiry process.

Awareness

The eight stages of the *A+ Inquiry* framework are connected by the hub of *Awareness*, symbolizing a continuous state of cognizance or mindfulness that is ever-present throughout the entire duration of inquiry. *Awareness* helps ensure that actions taken during a given stage of the process are properly aligned with the other stages that comprise the entirety of the cycle. *Awareness* optimizes the effectiveness of inquiry, and is perhaps the most important construct of any type of inquiry, arguably enhancing the value and efficiency of each stage in the process as well as the process as a whole. Without *Awareness*, an inquiry process is at greater risk for derailment before all stages are completed.

Although progression through one inquiry stage at a time may be common, it is critical to be mindful of how the stages connect in order to optimize the impact of each stage as it is encountered. It can be easy to weaken the impact of the steps taken during one stage when those steps do not align with all other steps in the inquiry process. The *Awareness* hub is intended to articulate the importance of being mindful of each stage during the entire process so inquirers do not, for example, accumulate data without being attentive to how the data support the entire cycle of inquiry. Too often, it seems, inquirers get stuck in data accumulation traps with limited or no understanding about what questions the data are supposed to answer, how to analyze the data, who will care about what the data are saying, and how the data could potentially impact change. *Awareness* also helps prevent a poorly posed question in the *Ask* stage, ensuring the question is relevant, the question is answerable with existing data or data that could be feasibly accumulated, and there is an audience who could benefit from the answer to the question. Therefore, having highlighted the importance of *Awareness*, we now discuss the eight stages of the model, beginning with *Absorb*.

Absorb

Absorb refers to the stage of the process in which an inquirer develops an understanding of what is known and not known about a context, which may include a physical setting, an abstract place or concept, a program or intervention, or a mix of these elements. According to Glesne (2010), reflecting on what is known and not known, as well as considering the importance and type of new understanding that will potentially be cultivated, is useful for guiding the direction of an inquiry process. Examples of how a person might absorb a better understanding of a context could include reading relevant publications, familiarizing oneself with applicable laws and regulations, watching videos, browsing websites, talking to colleagues and other professionals and stakeholders in the field, and attending conferences or workshops, etc. Taking time to absorb a context helps nurture a better understanding of the topic of interest, the problem of focus, and why it matters. Understanding the context and the stakeholders for whom the inquiry matters is essential to the development of relevant questions worthy of undergoing an inquiry process (Fitzpatrick et al., 2011).

Reflective prompts to consider during the *Absorb* stage include the following: Who are the primary stakeholders within the context? Who are the other stakeholders? What are the general beliefs of colleagues or experts in the field? What is known from research literature, other publications, websites, videos, etc.? What is not known? What matters and why does it matter? What is the topic of interest? What is the problem of focus? What is the purpose of the inquiry?

Absorb example. A new Evaluation Coordinator (EC) is hired at Sample Education Service Agency (SESA). The EC is tasked with evaluating the extent to which SESA's grant-funded *First-Year Teacher* (FYT) professional development program is meeting intended

objectives. The EC has limited familiarity with the FYT program. She does not understand the program's purpose.

Absorb without awareness. The EC does not explore venues necessary to gain a better understanding of what the program is designed to achieve. The EC is not aware of the objectives, but she knows some sort of program evaluation needs to be conducted. She begins to wonder if FYT participants enjoyed their time in the program. If the EC moves forward with the inquiry cycle driven by her uncertainty of whether participants enjoyed the program, the findings of the inquiry will not inform any sort of understanding about the extent to which the program is meeting objectives. More work is required here before moving to the next stage.

Absorb with awareness. The EC explores a variety of venues to help improve her understanding of what the program is intended to achieve. She reads the grant Request for Proposal, reviews the grant application that was submitted and approved, and meets with the SESA director to discuss the desired outcomes of the program. She learns that the program is intended to increase first year teachers' competence in methods of differentiated instruction, increase competence in methods of classroom management, and increase feelings of being supported by a network of professional peers. She begins to wonder if FYT program is meeting these objectives.

Ask

Through the *Absorb* stage, uncertainties about the context begin to emerge. Questions surface that do not have clear answers, addressing the uncertainties that arose from the absorption of context. *Ask* refers to the formulation and posing of answerable questions that, if answered, could help clarify that which is currently not known or poorly understood. Emphasis is placed on the word, answerable. Answerable questions are those that can be addressed through a

process of accumulating, accessing, and analyzing quantitative and/or qualitative data to

cultivate an answer that directly responds to the question. According to Pike (2002), the first

element of effective inquiry is asking good questions. *Awareness* of what a potential answer

might look like and how the findings will be presented to applicable stakeholders supports the

formation of a good question (Booth et al., 2011). A question arising in this stage could serve

one or more purposes, potentially focusing on identifying needs of a population, assessing

learning, or evaluating impact of a program or intervention. Questions should be directly relevant

to stakeholders who would be most interested in or impacted by the inquiry results (Fitzpatrick et

al., 2011).

Reflective prompts to consider during the *Ask* stage include the following: What question

can be asked that will promote a better understanding of what is not currently known? Will an

answer to the question help inform decisions and/or action? Is the question answerable through a

process of data accumulation, access, and analysis?

Ask example. During the ask stage the EC poses a question to help enhance

understanding of the extent to which the FYT program is meeting objectives.

Ask without awareness. The EC formulates the question, "At the end of the first year of

teaching, are FYT program participants' perceptions of competence in methods of differentiated

instruction, perceptions of competence in methods of classroom management, and feelings of

being supported by a network of professional peers higher than the respective perceptions and

feelings of first year teachers who did not participate in the FYT program?" If the EC proceeds

through the inquiry cycle with this question, the findings will not inform any sort of

understanding about the extent to which the FYT program contributed to increased competence

in methods of differentiated instruction, methods of classroom management, and feelings of

being supported by a network of professional peers. The findings will only indicate whether levels are higher for FYT participants than for non-participants at the end of the first year of teaching. More awareness of how the question aligns with other stages in the inquiry process is necessary before progressing to the next stage.

Ask with awareness. The EC formulates three answerable questions. She merges the questions into a single question, as follows: "Did FYT program participants' perceptions of competence in methods of differentiated instruction, perceptions of competence in methods of classroom management, and feelings of being supported by a network of professional peers increase more during the first year of teaching than the respective perceptions and feelings of first year teachers who did not participate in the FYT program?" Individually answering the three questions embedded within this single question could help enhance understanding of the extent to which the FYT program is meeting intended objectives. It provides a measure of growth in perceived skills from beginning-of-year to end-of-year upon which to compare the two groups.

Accumulate

Accumulate represents the collection of data. During this stage, appropriate data are collected that will help answer the question posed in the *Ask* stage. *Accumulate* addresses data collection methods, including means of collection, data types, and targeted samples. Pike (2002) iterated the importance of aligning appropriate methods, measures, and participants with the question of interest. Attention to the means by which data are collected is essential to ensure the data are accessible in the *Access* stage. Attention to the type of data and the sample from which the data will be drawn is critical to ensure the accumulated data are analyzable in a way that yields an answer to the question posed in the *Ask* stage. Some circumstances exist where the right data have already been collected. In such cases, although collecting new data might not be

necessary, attention to the *Accumulate* stage is useful for developing a thorough understanding of existing data types, how the data were collected, and the sample from which the data were drawn. Thoroughly understanding the data that have already been collected will help ensure whether the existing data are appropriate for answering the question.

Reflective prompts to consider for the accumulate stage include the following: What data could help answer the question? Does the project need quantitative data, qualitative data, or both? What data currently exist? Are data needed that do not currently exist? Is it possible to collect the new data that are needed? How will the data be collected? From whom will data be collected? Where will the data be collected? When will data be collected?

Accumulate example. The EC needs to collect data that will help answer the question posed in the *Ask with awareness* stage. The EC decides to administer a survey to all first year teachers.

Accumulate without awareness. The EC creates a survey with a few questions to collect qualitative information pertaining to first year teachers' thoughts about differentiated instruction, classroom management, and networks of professional support. The survey does not include a question for respondents to identify whether they participated in the FYT program. As well, it lacks enough demographic information to link pre- and post-survey data. The EC mails hard copies of the survey to the schools with instructions for first year teachers to complete and mail the survey back to the EC, but fails to include a timeline for completion. Although data will be accumulated from first year teachers and will be related to the topics of FYT program objectives, challenges will begin to surface as soon as accumulation concludes and access begins. Upon entering access, the EC will quickly discover that the handwritten qualitative data on hard copy surveys will be difficult to access in a format suitable for analysis of growth in the target areas.

Further, not including a question for the respondents to indicate participation in the FYT

program will make it very difficult, if not impossible, to compare those who participated in the

program with those who did not participate. A lack of identifying information makes it

impossible to assess growth in pre- and post-survey responses. As well, because the EC relies on

teachers to mail back the surveys, response rate may suffer significantly and desired timelines

may not be attained. If the EC makes it through the Access stage, she will soon realize that the

type of data she collected is difficult to analyze, or is impossible to analyze, in a way that yields

an answer in direct response to the question posed in the ask stage.

     Accumulate with awareness. The EC retains awareness of the question posed in the *Ask*

stage and directs forward-thinking attention toward the stages of *Access* and *Analyze* to inform

the development of an instrument to collect data to help address the *Ask* stage question through

the cultivation of a direct response revealed in the *Answer* stage. The instrument is an electronic

retrospective survey created with Google Forms. The survey is designed to measure beginning-

of-year to end-of-year growth of perceived competence in differentiated instruction, competence

in classroom management, and feelings of being supported by a network of professional peers.

The survey includes a question for respondents to indicate whether they participated in the FYT

program as well as a method to link pre- and post-survey data. A recruitment message, including

a survey link, is emailed to all first year teachers. Survey reminder messages are sent as needed

within a pre-specified timeline until an adequate sample size participates in the study.

Access

     Access refers to the retrieving of either existing data or newly collected data that were

deemed important in the *Accumulate* stage to answer the question posed in the *Ask* stage.

Attention to *Access* helps ensure the data can be feasibly retrieved through means that enable the

data to be useful for analysis (Lichtman, 2010). Accumulated data that cannot be accessed for analysis are essentially worthless.

Reflective prompts to consider for the *Access* stage include the following: Which data do you need to access and do the means exist to access them? How do you access each data point that is required to answer the inquiry? Where are the data stored (e.g. file cabinet or computer)? Are data maintained in a secure database requiring a password to access? Are data accessible in a manner conducive to immediate analysis, or will data require additional manipulation and/or coding prior to analysis?

Access example. The *Accumulation* stage has been completed. During the *Access* stage, the EC retrieves the data that were collected.

Access without awareness. For the purposes of this example, the EC retrieves the data collected in the *Accumulate without awareness* example. She opens the envelopes containing the hardcopy, handwritten surveys that were sent to her in the mail. She stacks all the surveys in a pile on her desk but does not know who completed each survey and is unable to link pre- and post-survey data points, rendering her unable to assess change in the *Analyze* stage.

Access with awareness. When designing accumulation strategies, the EC paid attention to the ways in which data could be accessed. All pre- and post-survey data were linked by each participant to facilitate a measure in changed perceptions. She ensured the survey responses could be exported in a format suitable for analysis in a statistical software program. During the access stage, the EC exports the survey data from Google Forms to a Microsoft Excel spreadsheet file. Then, she imports the Microsoft Excel data into SPSS for analysis.

Analyze

Analyze refers to the systematic examination of data using applicable analysis techniques. Data are organized and studied through quantitative, qualitative, or mixed methods to help the inquirer make sense out of the data that have been accumulated (Cohen et al., 2011; Creswell, 2014; Glesne, 2010). Quantitative analysis may include descriptive statistics (e.g., minimum, maximum, mean, median, mode, standard deviation) or inferential statistics (e.g., t-test, ANOVA, or regression). Qualitative analysis may include the identification of categories and themes. *Awareness* of this stage during earlier stages of the inquiry process ensures that the accumulated data can be analyzed with methods that will help generate an answer to the question posed in the *Ask* stage. If data are accumulated and accessed through means that do not permit meaningful analysis, the data are often useless or could even prompt the cultivation of misleading interpretations (Fitzpatrick et al., 2011). This stage should include attention toward the types of computer software or other tools required for analysis.

Reflective prompts to consider for the *Analyze* stage include the following: Have the data been accumulated and accessed in a manner that facilitates their analysis? What types of analyses will be conducted? What computer software or other analysis tools will be used? Are there necessary knowledge and tools to complete the analysis? For quantitative data, will descriptive statistics, inferential statistics, or both be used? For qualitative data, will it be necessary to create categories and identify themes?

Analyze example. The EC analyzes data that were retrieved during the *Access* stage. She analyzes the data in a way that will reveal an answer in the *Answer* stage.

Analyze without awareness. For the purposes of this example, the EC attempts to analyze the data that were collected in the *Accumulate without awareness* example. She realizes that

although she collected data from the right sample, there is no consistent way to identify whether survey respondents did or did not participate in the FYT program and was unable to connect pre- and post-survey data. She will be able to identify FYT participation only for those respondents who freely indicated FYT participation or nonparticipation without being prompted by a survey question. She also realizes that the survey questions and type of information collected are not conducive for analysis in terms of the FYT program impacting the focus areas of perceived competence in differentiated instruction, competence in classroom management, and feelings of being supported by a network of professional peers. The EC reads through the responses and jots down some thoughts about common themes she identifies in the respective areas of focus. Several respondents seemed to comment about the challenges of differentiated instruction, classroom management, and connecting with professional peers. There were also a number of comments pointing toward a desire for more professional development or other support mechanisms to help navigate these challenges.

Analyze with awareness. For the purposes of this example, the EC analyzes the data that were collected in the *Accumulate with awareness* example and accessed in the *Access with awareness* example. She opens the SPSS file created in the Access stage to begin data analysis. The SPSS data file includes a beginning-of-year value and an end-of-year value for each of the three focus areas: perceived competence in differentiated instruction, perceived competence in classroom management, and feelings of being supported by a network of professional peers. The EC calculates a beginning-of-year to end-of-year growth value for each respondent in each focus area. The EC conducts independent samples t-tests to determine if there is a significant difference between growth scores for FYT participants and non-participants in each of the three focus areas. Results of the t-tests growth scores for FYT participants are significantly higher than

growth scores for non-participants in the areas of perceived competence in classroom

management and feelings of being supported by a network of professional peers, but there was

no difference in perceived competence in differentiated instruction.

Answer

Answer refers to the interpretation of results produced through the *Analyze* stage. The

interpretation reveals an answer that directly responds to the question created during the *Ask*

stage. The *Answer* should add clarification to that which was previously not known or poorly

understood about the context (Licthman, 2010). Inferences or generalizations may be drawn

during this stage if applicable. The type of answer will depend on the type of question. A

question focused on identifying needs might lead toward an answer articulated as a list of needs.

A question focused on assessing learning might lead toward an answer indicating whether

learning occurred or the amount of learning that was achieved. A question focused on evaluating

impact of a program might lead toward an answer indicating whether there was an impact or the

extent to which an impact was realized.

Reflective prompts to consider for the *Answer* stage include the following: Based on the

findings of the analyses, what is the answer to the question posed? Does the answer respond

directly to the question? What types of inferences or generalizations, if any, can be made based

on the findings of the analyses?

Answer example. The EC uses the results of the *Analyze* stage to construct an *Answer* to

the question posed in the *Ask with awareness* stage: Did FYT program participants' perceptions

of competence in methods of differentiated instruction, perceptions of competence in methods of

classroom management, and feelings of being supported by a network of professional peers

increase more during the first year of teaching than the respective perceptions and feelings of first year teachers who did not participate in the FYT program?

Answer without awareness. For the purposes of this example, the EC answers the question with the results produced through the *Analyze without awareness* example. The EC revisits the question in the *Ask* stage. The analysis stage yielded evidence for the EC to answer the question as follows: "I don't know." The EC could infer from the analysis stage that differentiated instruction, classroom management, and connecting with professional peers seem to be challenges for first year teachers and that first year teachers would like more support in these areas. Although this information may be useful for some purposes, it does not respond to the question posed in the *Ask* stage. The interpretation of evidence merely indicates that some of the first year teachers who responded to the survey perceive these areas as challenges and that some would like more support in these areas, pointing toward a reiteration of the need for implementing effective support programs for first year teachers. The analysis stage was supposed to provide evidence about whether the FYT program was meeting its intended objectives, not whether there is a perceived need for the implementation of first year teacher programs.

Answer with awareness. For the purposes of this example, the EC answers the question with the results produced through the *Analyze with awareness* example. The EC revisits the question posed in the Ask stage. The analysis stage yielded evidence for the EC to answer the question as follows: "Yes, FYT program participants' perceptions of competence in methods of classroom management and feelings of being supported by a network of professional peers increased more during the first year for participants than the respective perceptions and feelings of first year teachers who did not participate in the FYT program" and "No, FYT program participants' perceptions of competence in methods of differentiated instruction did not increase

more during the first year for participants than the respective perceptions of first year teachers

who did not participate in the FYT program."

Announce

       Announce refers to the dissemination of findings to people and groups who may be

interested in or affected by the answers gleaned through data accumulation and analysis. The

quality of knowledge that informs decisions and actions is contingent upon the quality of the

process leading to such knowledge and how well the new knowledge is reported (Booth et al.,

2008). A good study does not matter much if the results are not communicated to the right

stakeholders or if the dissemination of results is boring or ambiguous (Lichtman, 2010). Findings

should be presented through processes that engage and resonate with targeted audiences,

including implications articulating how the audiences can use the findings to inform their

decisions and actions. If the results will not matter to any stakeholders or lead to some decision

based on the findings, reasonable doubts arise about whether the inquiry should have been

conducted in the first place (Fitzpatrick et al., 2011). In education, there is a wide range of

potential stakeholders, including students, parents, teachers, administrators, data teams, school

boards, community members, state and/or federal government. Results should be announced in a

manner tailored to the particular audience receiving the information. Technical jargon should be

reserved for audiences with adequate relevant experience. Modes of communication may include

open forums, oral presentations, phone calls, written reports, email messages, website postings,

etc. The announcement should include adequate rationale for the answer and accompanying

implications and limitations when applicable.

       Reflective prompts to consider for the *Announce* stage include the following: Which

stakeholders should hear the answer (e.g. students, parents, teachers, administrators, data team,

school board, community members, state government, federal government)? What vocabulary will be used to communicate the answer to different groups (e.g. laymans terms, technical jargon)? What modes will be used to communicate the findings to them? How much needs to be told to each group? What are the implications for each group? Should they continue what they are doing? Should they stop what they are doing? Should they change what they are doing? If they should change, what are some recommendations for how they should change? What limitations to the process should be announced to each group?

Announce example. The EC announces the answer and applicable implications to relevant stakeholders.

Announce without awareness. For the purposes of this example, the EC announces the answer presented in the *Answer without awareness* example. The inquiry process to this point yielded an ambiguous answer about the FYT program's effectiveness in terms of meeting intended objectives. The stakeholders wanted to know whether the FYT program was effective in the target areas of improving perceived competence in differentiated instruction, perceived competence in classroom management, and feelings of being supported by a network of professional peers. The EC is not sure how to announce the answer because it is not relevant to the initial question. She announces to the SESA director in a one-on-one meeting that no evidence exists to indicate whether the FYT program is meeting intended objectives, but that some of the first year teachers who responded to the survey seem to want professional development in the target areas. She makes a similar oral announcement to administrators of SESA member schools at a monthly school administrator meeting. No implications for how to use the information are communicated through either of the announcements.

Announce with awareness. For the purposes of this example, the EC announces the

answer presented in the *Answer with awareness* example. The EC announces the answer with

accompanying implications through audience-specific one-page summary reports disseminated

to SESA staff at a staff meeting, administrators of SESA member schools at a monthly school

administrator meeting, FYT program participants via email, the FYT funding agency as a portion

of the annual report, and other interested audiences through posting the findings and implications

on the FYT program page on the SESA website. Generally speaking, the implications suggest

that SESA continues to do what is working in terms of FYT professional development focusing

on classroom management and building a support network of professional peers, making

refinements as needed to remain current with emerging trends and research in these areas. The

implications further suggest that SESA takes a detailed look into the ways in which the FYT

program supports differentiated instruction professional development, potentially making

noticeable modifications to this component of the program to ensure that the program meets the

objective of improving competence in this area. The EC also announces the findings to a broader

audience of practitioners, researchers, and other stakeholders by publishing the study design and

findings in a professional journal. The article includes a call for researchers to replicate the study

in other contexts and to develop instruments for measuring actual levels of competence,

extending upon perceived levels of competence, in methods of differentiated instruction and

classroom management. Researchers may also consider pursuing studies to improve

understanding of the extent to which first year teacher professional development programs have

immediate and/or long term impacts on student achievement.

Apply

     Apply refers to the use of data to inform application for continuity or change. Allen

(2004) articulated the importance of identifying and implementing data-driven changes based on

findings that surface through an inquiry process. The implications proposed in the *Announce*

stage will inform the actions to be taken during the *Apply* stage. If the data indicate that what is

currently being done is working, one of the actions could simply be to continue that which is

working. If the data suggest that what is being done is not working, it might be worthwhile to

stop or change that which is being done. New understandings, enhanced knowledge, and actions

of any type transform the context, exposing uncertainties that drive subsequent inquiry processes.

Reflective prompts to consider for the *Apply* stage include the following: Will the SESA

continue doing what it has been doing, stop what it has been doing, or make changes to what it

has been doing based on the answer? A rationale should be provided for whichever answer is

chosen. If changes are to be made, the types of changes and the methods of changes need to be

selected.

Apply example. Stakeholders apply the answer and implications presented during the

Announce stage by using the new knowledge and understanding as rationale for subsequent

relevant decisions they make and actions they take.

Apply without awareness. For the purposes of this example, the context is based on the

Announce without awareness example. Evidence indicating whether the FYT program is or is not

meeting objectives does not exist. The funding agency does not know whether the program is

effective, but funding is extended for another year because the agency does know that some first

year teachers participated in the program and the agency also continues to periodically hear

remarks about the desire for first year teacher programs. The following year, the SESA director

decides to operate the FYT in the same manner as the program had been operated the previous

year. No changes are made to improve the program because there is no evidence pointing toward

areas of the program that could benefit from change. With no evidence to help understand

whether the program is meeting objectives, blind decisions are made and blind actions are taken to continue the program. The decisions and actions are essentially mindless. Of course there may be other inquiry processes, possibly conducted simultaneously, that might suggest the FYT program is meeting objectives; hence, providing rationale for continuing the program. However, if we take into account only that which is known from the inquiry process *without awareness* presented herein, we see there is no evidence that the program is meeting objectives. We do not know whether it should be stopped or continued and, if it is continued, what areas of the program could be improved.

Apply with awareness. For the purposes of this example, the context is based on the *Answer with awareness* stage. The announcement stage indicated there were significant differences in beginning-of-year to end-of-year growth between FYT participants and non-participants in two of the target areas of perceived competence in classroom management and feelings of being supported by a network of professional peers, but there was no significant growth difference in the target area of perceived competence in differentiated instruction. There is evidence that the FYT program is meeting two of the three proposed objectives so the funding agency decides to extend FYT program funding for the following year with a stipulation that SESA take sufficient steps to improve the differentiated instruction component of the FYT program. The SESA director delegates assignments to SESA staff that will support improvement of the differentiated component of the FYT program. School administrators support the continuance of the FYT program and encourage the next year's first year teachers to participate. The EC and interested members of the broader research community begin to explore the feasibility of designing new instruments that would better represent actual competence and start thinking about how to design a study that might lead to an understanding of the extent to which

first year teacher professional development programs have immediate and/or long term impacts on student achievement.

A+ Inquiry **Summary**

  A+ Inquiry is a disciplined framework for asking and answering questions to support the optimization of ESA effectiveness. This Inquiry Framework includes the following eight stages, bound together by the hub of *Awareness*: *Absorb, Ask, Accumulate, Access, Analyze, Answer, Announce,* and *Apply*. The model is intended to help ensure that, for any given inquiry, the right context is absorbed, the right questions are asked, the right data are accumulated, accessed, and analyzed, the right answers are derived, the right announcements are communicated, and the right application is made.

<div align="center">**Discussion**</div>

  Embedding the *A+ Inquiry* framework into organizational culture for evaluation, assessment, and research purposes could improve the way ESAs think about the data they collect and the data they access from external sources. Evaluative inquiries on the effectiveness of ESA programs are critical in order to be accountable to funding sources. Furthermore, ESAs have an ethical responsibility to determine if what they are doing is making a positive impact. This is difficult to accomplish if ESAs do not collect the appropriate data, in the appropriate manner, to answer the essential questions. *A+ Inquiry* promotes improved inquiry skill, striving to enhance usefulness of ESA information, efficiency of operations, and effectiveness of programming. The framework facilitates responsible data accumulation, quality analysis, and appropriate application of findings, leading toward more effective ESA operations by eliminating barriers such as data hoarding and mindless decision-making.

Inquiry processes can be very simple, exorbitantly complex, or anywhere on the spectrum from simple to complex. Depending on the size and scope of an inquiry, responsibilities may be delegated to one or more individuals at each stage. Identifying the responsible individual or individuals at each stage will help ensure that the quality of the inquiry is optimized with the resources available and that it is carried out thoroughly. When multiple individuals are responsible for different stages of the model, cohesive collaboration within the group is essential to ensure a seamless inquiry process, maintaining awareness of how each person's role impacts another's.

Increased inquiry competence positions professionals to question the purpose of each stage in an inquiry process. For example, if assigned the task of accumulating data, an inquiry-competent professional would attempt to identify and reflect on the questions the data should answer to ensure that all data collected through the *Accumulation* stage contribute to an important answer in direct response to the question that was asked, serving a purpose of informing decisions or actions that support enhanced organizational impact. If the question the data are intended to answer is unclear or if there is difficulty identifying potential benefits of the study, the person tasked with accumulation might compose an argument challenging the initially defined need for collecting data. If assigned the task of announcing the launch of a new program, an inquiry-competent professional would reflect on the stages of the inquiry cycle to better understand the rationale supporting the need for the new program. If evidence supporting the need for the new program is non-existent or arbitrary, prior to composing and making the announcement, the employee tasked with announcing the new program might formulate an argument challenging whether moving forward with the program is the best option for the use of organizational resources. The capacity to compose such arguments when assigned

responsibilities in one or more stages will help ensure that organizational resources are utilized for the most meaningful purposes, not wasted on disconnected inquiry processes that end prematurely or do not matter to anyone.

Recommendations

  Recommendations for ESA professionals. ESAs could use *A+ Inquiry* as a framework to plan inquiry processes. Embedding the framework into ESA organizational culture could help ensure that all important decisions and actions are informed by disciplined processes of inquiry. All data collected by an ESA, or any other organization for that matter, should be accumulated for the purposes of responding to important questions and informing relevant decisions and actions. The data should be accessible and analyzable in ways that yield direct answers to the questions. The answers should be announced to stakeholders with implications for *a*pplication. Appropriate application of the recommendations should be made. If barriers exist to effective progression through one or more of these stages, the organization should dedicate appropriate resources toward penetration of the barriers. If it is determined that the barriers are impenetrable given the resources available for the efforts, the organization should reconsider whether resources and efforts should be dedicated toward the collection of data for an inquiry cycle that is not likely to be completed.

  ESAs could use the *A+ Inquiry* framework to begin building a common language for discussing processes of working with data. Speaking a common language about data processes could make it easier for a broader spectrum of ESA staff and other stakeholders to engage in data conversations and initiatives, nurturing a greater level of cohesiveness for data-related work that often seems disconnected or incomplete. Regardless of the specifics of the data that an ESA is working with, at any given time when ESA stakeholders are working with or discussing data,

they will be in one of the stages of the model.

ESAs could use the *A+ Inquiry* framework to help provide rationale for upcoming or previous decisions and actions. Selecting an organizational decision that had been made or action that had been taken and retrospectively addressing each stage of the *A+ Inquiry* framework leading to the decision or action would help ESAs, partner schools, funding agencies, and other stakeholders ensure that the ESA's decisions and actions are evidence-based.

ESAs could use *A+ Inquiry* as a diagnostic tool to identify various gaps in an inquiry process, including whether data are being used for intended purposes. ESAs are obligated to be good data stewards, practicing responsible collection, protection, interpretation, and use of all data. As a diagnostic tool, ESAs could use *A+ Inquiry* to conduct a data audit of sorts; selecting one or more data points and reflecting on the data point(s) while addressing each stage of the framework could help ESAs determine if the data are being appropriately collected and used. Some ESAs might discover they are spending extensive efforts and resources on data that are not being used to their fullest potential or perhaps not being used at all.

Recommendations for researchers. Limited research has been conducted on the extent to which ESA professionals have capacity to engage in disciplined inquiry processes on organizational and individual levels. The *A+ Inquiry* model could serve as a conceptual framework for researchers to design and conduct studies that would promote enhanced understanding of the stages in which ESA organizations and individuals are most and least proficient. Understanding the strengths and weaknesses across key stages of a thorough inquiry process could help guide development and delivery of inquiry-based professional development for ESA staff and stakeholders. There often seems to be a gap between data accumulation and applying change based on what the data are saying. More research is required to enhance

understanding of the extent to which this type of gap exists and to improve methods for ensuring that all accumulated data are utilized for meaningful purposes.

Concluding Remarks

This paper introduced common stages that comprise a cycle of disciplined inquiry and provided general explanations of how cohesiveness among the stages could optimize the impact of an inquiry process. Although the importance of each stage and relationships among the stages were introduced, the deeper meanings of each stage and relationship could not be thoroughly gleaned through the surface-level discussions herein. Utilization of the *A+ Inquiry* framework as well as additional study of the stages of the model, will lead to greater proficiency in disciplined inquiry.

This paper presented *A+ Inquiry* through the lens of an ESA context; however, the model could be adapted to align with virtually any context in which disciplined inquiry is practiced. It should be noted that, although *A+ Inquiry* is intended to enhance inquiry capacity of individuals and organizations, the perfect inquiry design rarely, if ever, exists. Study limitations are almost always bound to surface at some level. Even though the perfect design may never be within sight, improving the inquiry skill of all professionals in an organization could lead to inquiry designs that are overall better than those that currently exist. The implementation of an improved inquiry design leads to a greater impact.

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