NFSMI

THE CENTER FOR TRAINING EXCELLENCE

A Summary Research Report Describing Research Conducted Under 2007 Grant 300150631A

(NFSMI Agreement No. 09-502)

April 2, 2010

RESEARCH REPORT

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Table of Contents

1 THE CENTER FOR TRAINING EXCELLENCE

The Center for Training Excellence (CTE) was first conceived as part of several strategic initiatives that were published in 2004 under the auspices of the National Food Service Management Institute (NFSMI) for implementation in Grant Year 2007. Of the five strategic initiatives outlined, initiatives II and IV addressed the CTE directly. They were:

> *Strategic Initiative II: Position NFSMI as the leader in training for child nutrition program personnel by investing in the expansion of the nation network of trainers.*
>
> *Strategic Initiative IV: Build and maintain a comprehensive, state-of-the-art Web site with delivery system for disseminating information, conducting research, and providing educational and training opportunities for child nutrition program personnel.*

NFSMI subsequently convened three task force meetings the following year, resulting in the articulation of 12 specific recommendations addressed as "Recommendations for Tasks for Developing *The Center for Training Excellence*." The tasks ranged from naming and developing a vision statement to describe the national network to developing a comprehensive training delivery model based on best practices and research. Many of the tasks could be characterized as one-time activities while others had a temporal aspect to them—they would not be static but would require *ongoing* attention and involvement well into the future. Some of the recommendations were ultimately carried forward as projects for 2007, 2008, and 2009. The original list of recommendations was amended and clarified as tasks were completed, modified, or moved forward to be completed at a later time.

The project described and discussed in this document was derived directly from the original 12 recommendations and subsequent modifications, and codified in a LETTER OF AGREEMENT (NFSMI AGREEMENT No. 09-502) executed between representatives of the NFSMI and OrgWide Services, LLC (OWS). OWS is the consultant/independent contractor selected to perform services generally described as developing and deploying a "professional development system designed to enable Child Nutrition Program (CNP) state agency and district-level personnel to achieve at the master trainer level utilizing a services of steps which will take the Baldridge [sic] Model for Performance Excellence into consideration."

Four distinct phases were contemplated for this project with each phase culminating in a defined set of deliverables. The table below briefly summarizes the four phases.

	DELIVERABLES
PHASE I*	Develop a research-based model for trainer development, including a comprehensive review of the relevant literature.
PHASE II	Upon approval of the model from PHASE 1, develop a project plan for designing and developing all elements of the proposed model.
PHASE III	Upon approval of the project plan from PHASE 2, develop all learning assets, products, curricula, assessments, processes, networks, and related support materials required to implement and sustain the CTE.
PHASE IV	Monitor and recommend modifications to increase the efficiency and effectiveness of the maintenance of the existing operations in the context of the CTE's stated vision and mission.

1.1 The Scope of Work and Deliverables

The project parameters unique to Phase I included research and development activities related to the development of the model. The activities included—at a minimum—the following:

- a comprehensive literature review of critical success factors for the development of an institute that excels in training/teaching/coaching adult learners;
- extensive research into current structures, governance, and offerings of successful Centers of Excellence (COE) and Training Institutes;
- benchmarking with a select number of existing COEs;
- interviews with senior leadership and management of select COEs to elucidate *their* understanding of critical success factors; and
- examination of current and applicable Baldrige National Quality Award guidance and Criteria for Performance Excellence relative to education.

The following deliverables were to be presented to the NFSMI project team upon conclusion of these activities:

- bound document and digital media containing the findings of the literature review of criteria for excellence in training/teaching/coaching adult learners;
- summary documents/audio recordings from interviews and benchmarking activities;
- explicit illustrated model and supporting documents outlining the application of a detailed and specific training model for delivering educational activities, materials, and support to the CTE's students (including graphics and visuals that may be used in advertising the CTE's vision and mission); and
- PowerPoint presentation (for CTE project team members to share as needed) explaining the strategy, process, activities, and research results associated with developing the final trainer development model.

1.2 The Research Plan

OWS researchers applied a "constructive" structural research strategy to explore and develop the resulting model for trainer development. Constructive research can be best characterized as a research method that begins with a reasonably-defined construct of what is to be researched, then goes in search of validating—but objective—evidence to support the construct. The evidence must stand strict, analytic scrutiny against predefined criteria that are based in relevant industry standards or result from benchmarking activities. This research approach stands in stark contrast to "basic" or "pure" research, which has as its objective to advance theoretical understanding of a new or slightly understood concept.

Given the corpus of literature readily available to professional practitioners and researchers about training and development, OWS determined a constructive research strategy would be superior and result in a rich and practical database of information that could be instantly transformed into meaningful and actionable guidelines for designing a training center *de novo*.

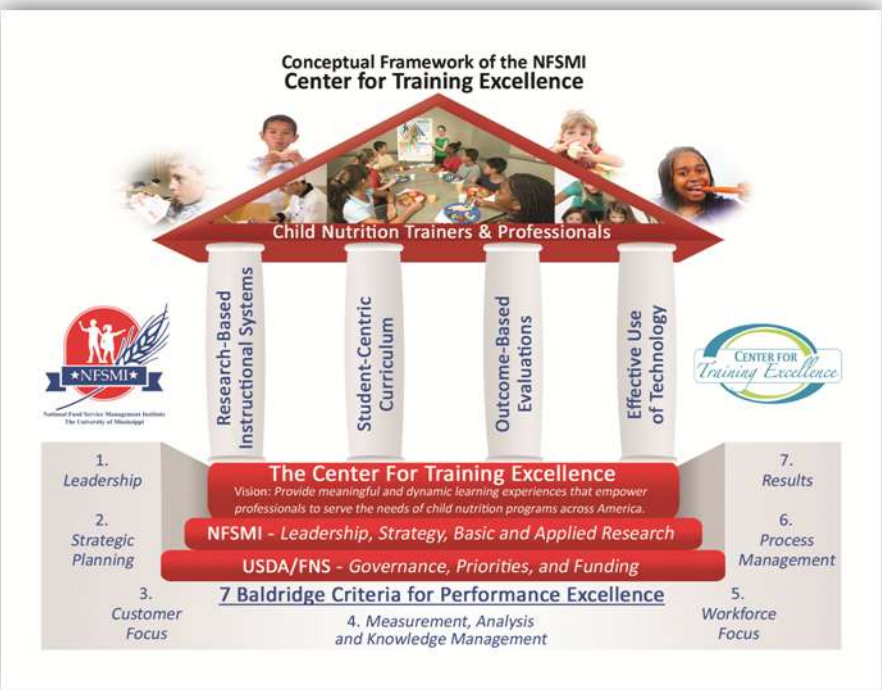
1.3 A Structural Metaphor for the CTE

An organization's design should be optimally aligned to support its vision, purpose, and the achievement of its intended results. Achieving and maintaining organizational alignment between internal stakeholders (efficiency) and external customers (effectiveness) is made easier by an organizational culture focused on sustainable outcomes through process controls and a commitment to continuous improvement.

NFSMI has indicated its interest in developing an organization considered to be "world class" and potentially award winning. This goal requires an omnibus model to guide and direct the CTE staff through all phases of its development, growth, and maintenance. While numerous organizational models exist that might accomplish this goal, we believe the following model best captures the vision of the CTE, and provides a conceptual framework around which to build the CTE.

The structural metaphor in Figure 1 below attempts to represent the relationship between the CTE's governance and managerial stakeholders (the foundation), its instructional values, systems, and processes (pillars), and its customers and desired outcomes (roof). In recognition of the CTE's commitment to quality and continuous improvement, we have positioned the organizational structure on solid ground—the BNQ program's *7 Criteria for Performance Excellence*.

Figure 1



1.4 The CTE's Foundation

Great organizations are built on firm foundations that strengthen and support but do not dictate operations. In the CTE's case, the USDA/FNS provide standardized nutritional guidelines and help set priorities for many similar organizations across the United States. NFSMI is able to utilize the USDA/FNS's expertise to guide their

strategy for training its trainers. These two agencies provide the back-drop for the specific goals of the CTE, which will focus on how to best train its nutrition professionals to understand USDA, FNS, and NFSMI requirements, now and in the future.

1.5 The CTE's Pillars

To achieve the long-term benefits of systematic and continuous improvement processes throughout the organization, the CTE will hold itself accountable to the highest standards of instructional performance. Moving into the middle section of the CTE, there are four "pillars," or instructional performance priorities, that the CTE has identified as critical to its success.

1. Research-Based Instructional Systems – A significant component of the CTE's commitment to quality is represented by its desire to benchmark its processes and results against the performance of other "world-class" educational organizations.
2. Student-Centered Curriculum – At all times, the CTE will focus on the needs of NFSMI's nutritional professionals, striving to enable not only their technical knowledge, but their personal growth.
3. Outcome-Based Measures – An organizational culture that holds itself accountable for the number of favorable outcomes it endeavors to produce will likely prefer the certainty provided only by empirical evidence. The CTE must be a leader in performance measurement practices and process feedback loops.
4. Effective Use of Technology – Advances in technology and today's economic realities dictate that new learning and communication techniques be used whenever possible. Examples include the use of online or other distance learning sessions and collaborative team sites.

1.6 *7 Criteria for Performance Excellence* Categories

The *7 Criteria for Performance Excellence* categories represented in the base of the model are summarized below.

1. The *Leadership* category examines how an organization's Senior Leaders' personal actions guide and sustain the organization.
2. The *Strategic Planning* category examines how an organization develops strategic objectives and action plans.
3. The *Customer Focus* category examines how an organization engages its customers for long-term marketplace success.
4. The *Measurement, Analysis, and Knowledge Management* category examines how an organization selects, gathers, analyzes, manages, and improves its data, information, and knowledge assets and how it manages its information technology.
5. The *Workforce Focus* category examines how an organization engages, manages, and develops a workforce to utilize its full potential in alignment with an organization's overall mission, strategy, and action plans.
6. The *Process Management* category examines how an organization designs its work systems and how it designs, manages, and improves its key processes for implementing those work systems to deliver customer value and achieve organizational success and sustainability.
7. The *Results* category examines an organization's performance and improvement in all key areas—product outcomes, customer-focused outcomes, financial and market

outcomes, workforce-focused outcomes, process effectiveness outcomes, and leadership outcomes.

The *7 Criteria for Performance Excellence* have been summarized in a publication by the National Institute of Standards and Technology entitled *2009—2010, Baldrige National Quality Program, Education Criteria for Performance Excellence*. We will use the criteria as outlined and explicated in that publication in every aspect of the design models and sustainability efforts associated with the CTE. The document may be downloaded from the following URL: http://www.baldrige.nist.gov/PDF_files/2009_2010_Education_Criteria.pdf .

1.7 Project Meetings and Discussions

Following the initial project kick-off, a review of the proposed training model was conducted on December 17, 2010, via conference call with staff from NFSMI and other project committee members representing various interested associations. Second and third conference calls were held later in December and January so as to include other project committee members in the discussion who were unable to attend the first project conference call. Comments and discussion points that were raised during the project conference calls were incorporated into the research and logged for consideration and discussion in later phases of the project. Upon completion of the round of conference calls, the creation of this summary report was initiated.

On March 11, the project team from OWS met with the NFSMI project team in Oxford, MS, and presented a draft version of this summary report—having previously sent copies of the report for their review. This report was approved provisionally on that date with the recommendation that various formatting conventions be adopted and that the *final* version of this report would incorporate those modifications. This final report reflects those recommendations and is to be considered a final version of the research summary document.

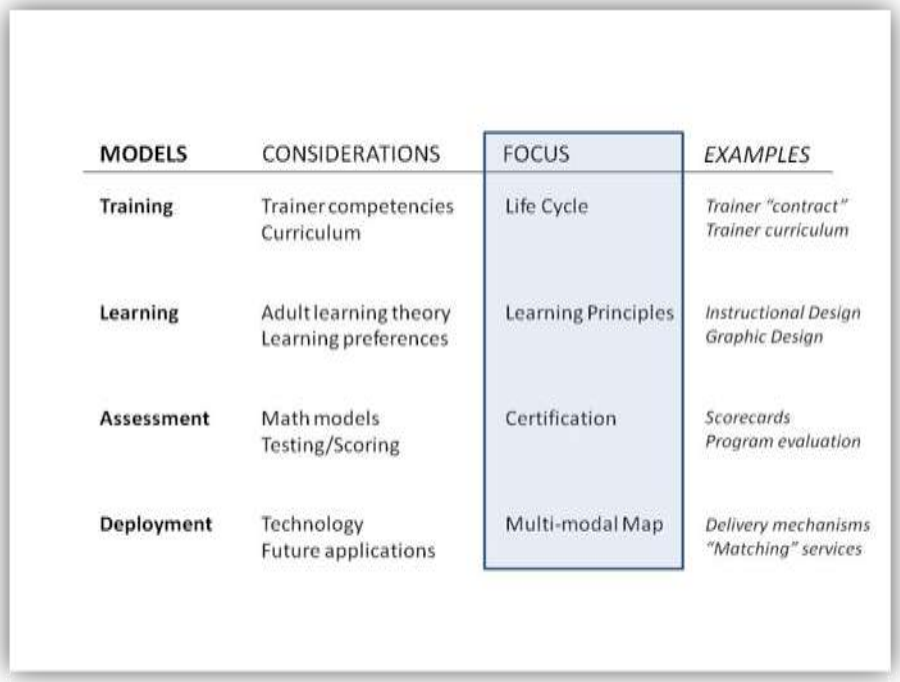
1.8 Outline of this Discussion

The remaining major and minor sections of this document describe an "integrated model" upon which the training systems of the CTE could be built, and raise questions associated with the potential governance and future policies of the CTE.

2 THE INTEGRATED MODEL

The task of synthesizing a single model to capture and represent the focal point of the training of trainers proved too great a challenge during the research phase of this project. Instead, it became obvious early on that it would take the integration of several models—four, to be exact—to adequately meet the mission of the CTE. These four models together have been referred to as an "integrated model" because it is only through the synergy of the four individual models that a comprehensive, holistic, and complete model can possibly result in functionally competent trainers supported by a system that can sustain the growth and maintenance of those trainers. Figure 2 below characterizes the four models, their considerations and focus. Examples of tangible products that would be developed in each model are also noted.

Figure 2



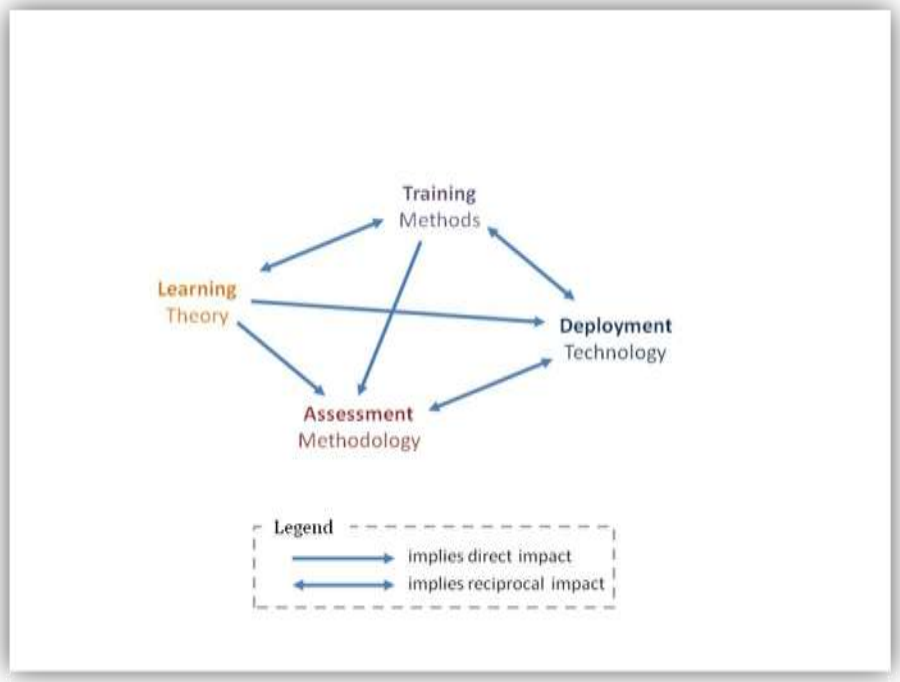
MODELS	CONSIDERATIONS	FOCUS	*EXAMPLES*
Training	Trainer competencies Curriculum	Life Cycle	*Trainer "contract"* *Trainer curriculum*
Learning	Adult learning theory Learning preferences	Learning Principles	*Instructional Design* *Graphic Design*
Assessment	Math models Testing/Scoring	Certification	*Scorecards* *Program evaluation*
Deployment	Technology Future applications	Multi-modal Map	*Delivery mechanisms* *"Matching" services*

The integrated model is comprised of four distinct but interrelated models. Each of the models comes with its attendant considerations and focus. Each of the individual models will be described below in detail. However, as a summary, it seems best to consider the integrated model as the intersection of four interrelated disciplines associated with training practices: (1) Training—which focuses on the trainers themself, their competencies, and the appropriate curricula to train trainers; (2) Learning—which elucidates the understanding trainers should have about their target audience and how best to develop materials to enhance learning transfer; (3) Assessment—which encompasses all of the assessment, measurement, and evaluation activities associated with training trainers, measuring learning transfer, and assessing the success of the CTE's programs; and (4) Deployment—which concerns itself with the appropriate ways in which to deliver instruction to the CTE's target audience, namely trainers. This model includes the exploration of matching specific technologies with specific learning goals with an understanding

that recent research has developed guidelines for the use of different deployment techniques based on learning and memory studies.

Understanding the effective interdependence of the four models is important to developing the training curriculum for the trainers (Training), developing an architecture on which to build the training skills (Learning), creating a comprehensive and overlapping assessment methodology for measuring program effectiveness and the goodness of the training and trainer skills (Assessment), and matching the deployment technologies with learning goals (Deployment). Slide 5 reflects the interdependence of each of the models to the others. For example, the choice of learning theory adopted has a direct influence on the choice of deployment technologies selected because there exists a demonstrated differential effect on learning as a function of sensory modality used to receive new information. As an example, a podcast can be used very effectively as a "spacing effect" reinforcement learning tool when information is being presented for the second time—even visual information. However, visual information (e.g., a schematic) would be best *introduced* in a visually rich envrionment like eLearning to ensure maximum retention. This mapping can be made explicit by understanding the relationship or interdependence between learning theories and deployment technologies. Figure 3 visually depictes the models' relative interdependence.

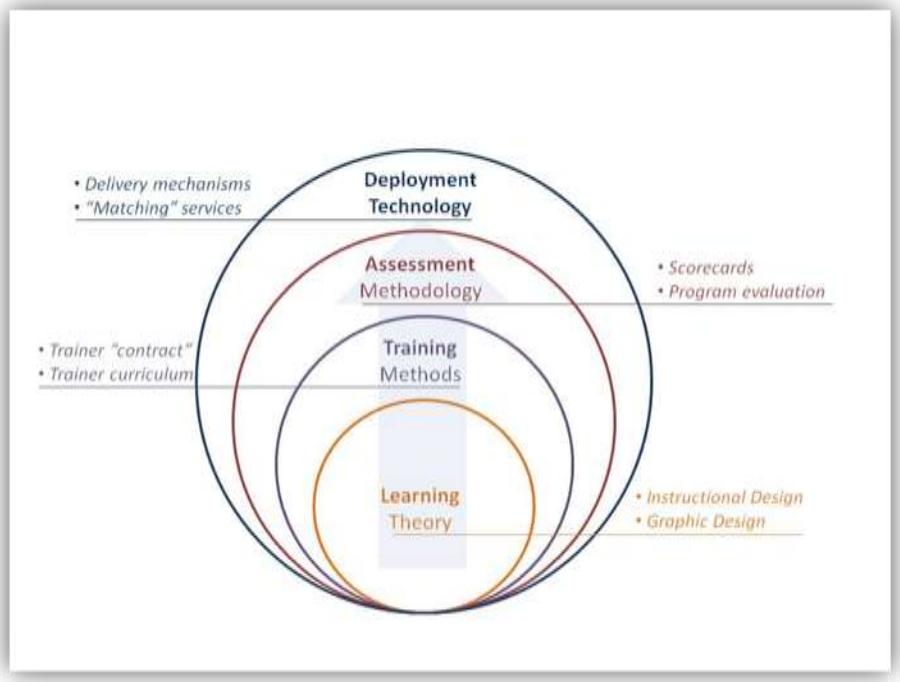
Figure 3



Furthermore, and as Figure 3 depicts, there is a *reciprocal* rather than a directional relationship between a learning theory and the training methods used to prepare trainers to be effective as instructors. That is, if it is determined *a priori* to adopt andragogy as a foundational understanding for how learning will be accomplished by trainers (as the CTE is doing), then the training curricula should reflect the application of andragogy in its delivery of the actual courses. It would be inconsistent to employ pedagogical methods to deliver courses given the adoption of andragogy as a foundational axiom. In a similar way, each of the models possesses either reflexive or directional relationships with the other models as depicted in Figure 3.

Figure 4 shows—in two dimensions—a hierarchical perspective of the four models that comprise the integrated model. The slide shows the adoption of a learning theory as an antecedent to the subsequent adoption of training methods, a system of assessment methodologies, and the deployment technologies used to deliver training. The "seashell" model shows how each model builds on the previous model in an effort to depict the interrelationships in a more descriptive way. The important point slide 6 makes is that an individual model—and a combination of three or fewer of the four models—is insufficient on which to build a framework to meet the CTE's vision and mission. While not technically synergistic, the author prefers the term "symbiotic,"the combination of the models is the preferred architecture for developing a comprehensive program for training trainers and developing a supporting infrastructure to continue the vision and mission of the CTE.

Figure 4



3 THE LEARNING MODEL

It was determined early in the research project and outlined clearly in the recommendations of the NFSMI task force that any training organization solution proffered would need to focus on the target audience—adult learners. That is, the final model or models that drove the conceptualization and design of the CTE would be required to consider the overwhelming evidence in the learning sciences about how best (read, effectively and efficiently) to train adults. The NFSMI task force clearly understands the distinction made in the training industry in the last 10 years that differentiates between *pedagogical* (training of children) and *andragogical* (training of adults) training principles, practices, and knowledge management. One of the natural consequences of this understanding was the insistence that the training model solution would need to incorporate adult learning theory into the architecture and development of training that was offered to CTE trainers. Because adult learning theory is so singularly important in its own right, and because it would be difficult to *implicitly* imbed principles of adult learning theory into the training, deployment, and assessment of the CTE's trainers, it was determined to make the relationship of adult learning theory to training activities *explicit*. Hence, the Learning Model, with andragogy at its center, is an essential element of the integrated model that undergirds the conceptual and practical framework of the CTE.

However, while andragogy certainly plays a central role in the Learning Model, it is not the only element that determines how training of CTE's trainers will be accomplished. Three related and equally important subjects derive from an understanding of how adults learn. The first speaks to the training "centricity" adopted by trainers (named "learning perspectives"), whether it imitates a typical classroom experience or focuses more on the learner's capabilities. The second issue addresses how best to train CTE's trainers to develop their own training materials in a systematic and consistent manner (named "instructional systems design"). The third topic relates the importance of understanding the abilities and limitations of human cognition when reviewing visual training materials, and how an experienced instructional designer can maximize learning with visual materials by attending to specific rules and guidelines. Each of these topics will be discussed in turn below.

3.1 Adult Learning Theory

The well-understood principles of adult learning theory should be used in the design of all instruction—instructor-led or technology-based—to increase its effectiveness. Adult learning has been given a more scientific name, "andragogy," to contrast it with the most prevalent learning theory used by instructors today, "pedagogy." The theory of andragogy, popularized in the United States by Malcolm Knowles, provides a scientific framework for understanding how to improve the learning environment specifically for adult learners.

Andragogy includes ideas such as an adult's readiness to learn, the role of the learner's experiences, the faculty member as a facilitator of learning, an adult's orientation to learning, and the learner's self concept. By understanding this set of assumptions about how adults learn, the instructor is better prepared to develop and deliver training that is more readily apprehended by adult learners.

The roots of andragogy can be traced back to the 1800s, with a re-appearance in the learning literature in the 1920s. Malcolm Knowles is understood to have heard the term during academic discussions with his international colleagues and used it for the first

time in a 1968 article entitled *Adult Leadership*. From that time on, Knowles became the American champion and principle expert on adult learning theory, or andragogy. Since then many adult educators have studied and improved on the concepts of adult learning theory to bring andragogical principles into the mainstream of adult learning practices.

There are generally six assumptions of andragogy. The elucidation of the six assumptions is beyond the scope of this document, but it is important to establish here that the understanding, training, and application of those six assumptions will take a prominent position in the training curriculum of the CTE and be woven into the fabric of all training of CTE trainers. Some training about andragogy will be obvious—we propose elementary and advanced workshops on the topic. However, the principles of andragogy will more often be reinforced through checklists and assessments of training materials under development, checklists that make explicit the relationship between andragogical principles and the appearance of those principles in the training materials themselves.

3.2 Learning Perspectives

A useful way to think about learning approaches is to consider the directionality of the activities that are taking place as a student interfaces with materials. Research has identified at least four tracks training is currently taking that can be characterized as follows:

1. Techno-centric. This perspective is adopted when an organization discovers a great technology and decides to use it in a meaningful way. Often, the question is asked, "What can this technology do for us?" Alternatively, one might ask, "What problems can we solve with this technology?" (A business problem doesn't have to be identified to ask this question, and seldom is a needs analysis conducted before applying the technology.) Exciting, and sometimes entertaining, training solutions often result, but typically to poorly defined business issues.
2. Teacher-centric. When *Bloom's Taxonomy of the Cognitive Domain* was first published in 1948, the educational community had a tool that formally classified learning behaviors and provided concrete measures for identifying different levels of learning. The apparent benefit of the taxonomy was that teachers could arrange educational objectives in a hierarchy from *less* complex to *more* complex. This approach best describes the teacher-centric approach: the teacher/instructor creates a list of objectives that reflect the domain of knowledge they want their students to learn, and they "figure out" a way to teach it to them. With the advent of new technologies, the focus shifts to determining how to "feed" information to students in creative ways while maintaining the precedence of the teachers'/instructors' needs of presenting the information.
3. Learner-centric. A learner-centric approach to eLearning focuses first on the students, secondly on the teacher (or presentation), and lastly on the technology used to deliver the training. The most important element of any training or knowledge transfer becomes how to match the instructional method to prospective recipients. The question is asked, "What are the best methods for increasing the likelihood that the student will learn the material?" This approach focuses on *learning*, not the technology supporting the learning.

4. Theory-centric. This is admittedly a catch-all category, but is nonetheless useful. In this approach, a practitioner steadfastly adheres to a theoretical viewpoint with which they are familiar—either because this is the *only* theory they know, they were trained as a "disciple" of this theory, or it just feels right to them—and builds their instructional methods around the theory. If the theory permits, they use some combination of instructor-led, self-instructional, and online methods to "train" their constituents. There are many theories from which to choose these days, and this is a very popular approach to choosing an instructional method. Learning theories may be further differentiated by the *domains* they cover (e.g., sales, problem-solving, procedures, reasoning, etc.) or the *concept* they espouse (e.g., anxiety, arousal, memory, schema, etc.).

A primary rule for instructional design is that designers should create a learning experience on the basis of how learners acquire knowledge. Consequently, rather than adopting a technology-centric or instructor-centric design paradigm, our instructional design methodology should be strictly *learner-centric*. Beginning from that perspective, many choices about how training materials should be designed and delivered will have already been made for the trainer because many techniques currently in vogue today are simply not congruent with a learner-centric training perspective. CTE trainers should be schooled in conceptual models that help them assess and match their training materials specifically to map on to a learner-centric perspective.

3.3 Instructional Systems Design

The discipline of instructional design is characterized by a set of principles that describe a multi-step process for explicitly establishing a need to train, followed by understanding the content to be taught, culminating in the creative application of knowledge transfer activities appropriate for the target audience. Generally speaking then, codifying the rules for executing these activities results in the creation of a "system" of instructional design. More precisely, formalizing the steps for developing training materials, and *consistently* and *faithfully* applying those steps to the training development tasks, describes the field of "instructional systems design."

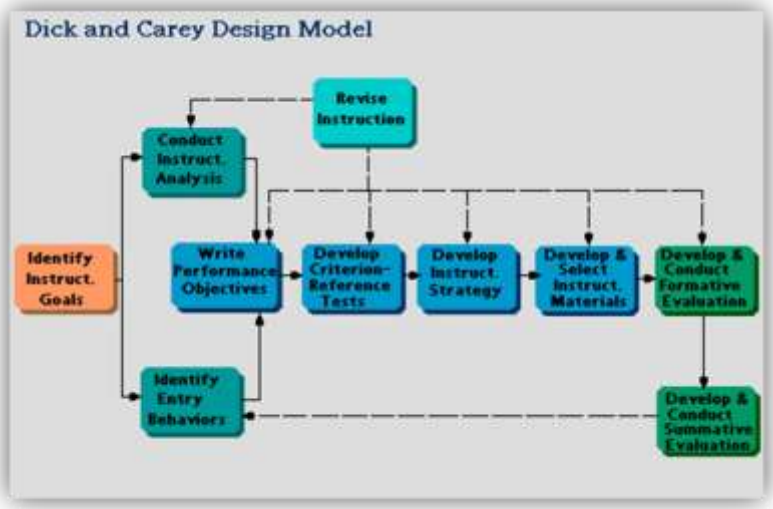
Many design "systems" exist that purport to lead the instructional designer to an effective training solution. Each of these systems has at its core a model that claims to possess the necessary and sufficient ingredients required to produce meaningful and measurable change in the target audience. Indeed, at least five activities or phases can be found to be common across most of these models, namely: (1) analysis, (2) design, (3) development, (4) implementation, and (5) evaluation. This combination of instructional design phases is so common as to warrant being considered a model in its own right named ADDIE (pronounced "ad - ee"), based on the acronym created by the first letters of each of the five activities.

There are at least 32 well-known variations of the ADDIE model that are regularly practiced by the instructional design community. How a practitioner manages these five phases or activities is what differentiates the systems from one another. A small sample of well-known instructional design models is provided below (alphabetized for convenience) as a reference point for justifying the model that we are recommending.

- Dick and Carey Model – The Dick and Carey model prescribes a methodology for designing instruction based on a reductionist model of breaking instruction down

into smaller components. Design and instruction are specifically targeted on the skills and knowledge to be taught and supplies the appropriate conditions for the learning of these outcomes.

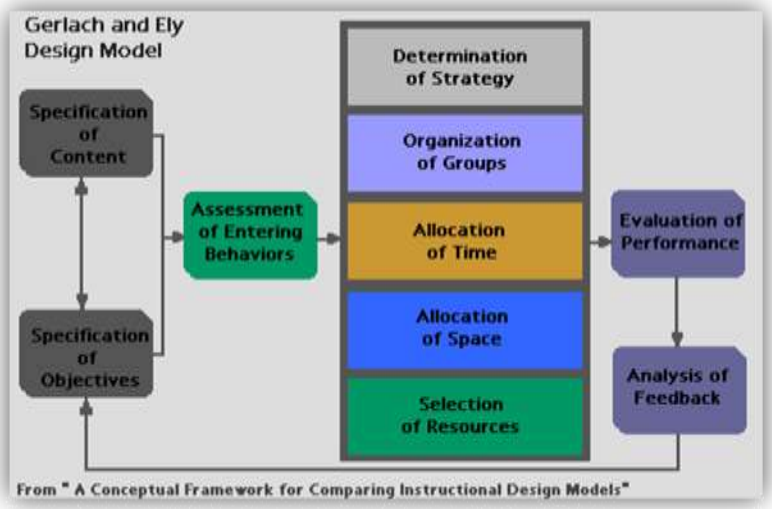
Figure 5



- Robert Gagné's ID Model – Gagné's approach to instructional design is considered a seminal model that has influenced many other design approaches, particularly the Dick and Carey model. Gagné proposed that events of learning and categories of learning outcomes *together* provide a framework for an account of learning conditions.

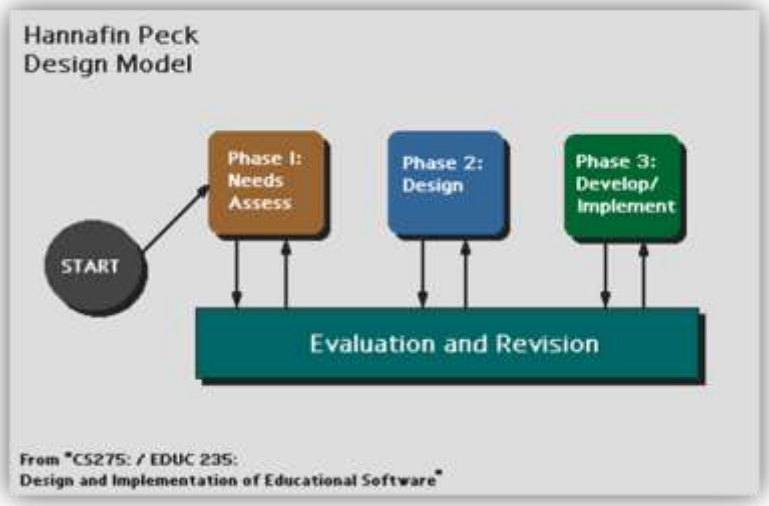
- Gerlach and Ely Design Model – This model has gained popularity in higher education as an excellent, prescriptive approach ideal for novice instructional designers.

Figure 6



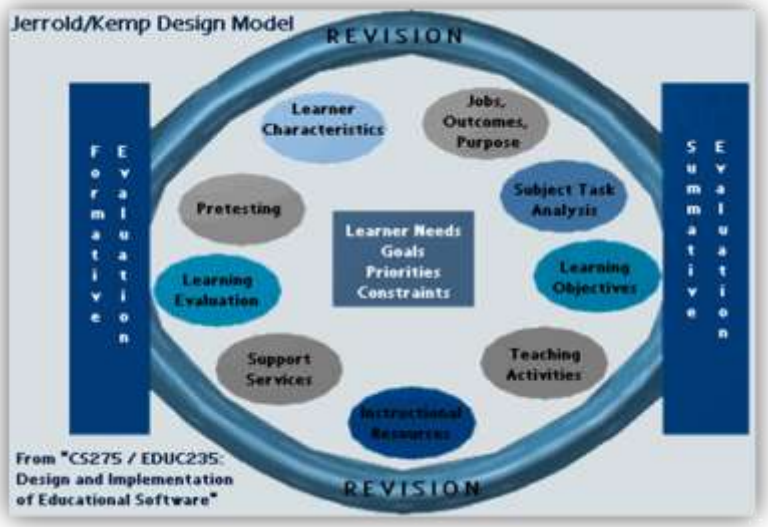
- Hannafin and Peck Design Model – This three-phase model emphasizes recursive evaluation and revision as the instructional designer completes a needs analysis, then designs and develops course content.

Figure 7



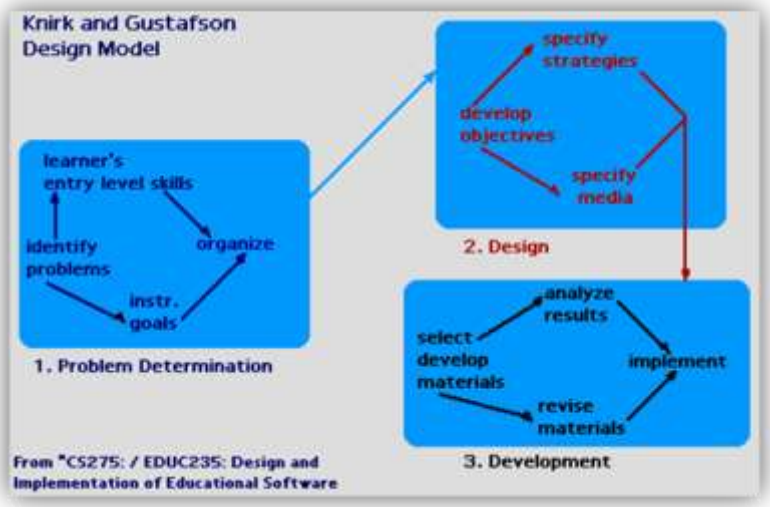
- Kemp, Morrison, and Ross – This model advocates an iterative, 9-step, holistic approach to instructional design. Virtually all factors in the learning environment are taken into consideration including subject analysis, learner characteristics, learning objectives, resources support services, and evaluation.

Figure 8



- Knirk and Gustafson Design Model – This three-stage design model includes problem determination, design, and development. Each stage has specific tasks and activities.

Figure 9



- Minimalism – The Minimalist theory of J.M. Carroll is an ideal framework for the design of instruction, especially training materials for computer users. It emphasizes the necessity to build on the learner's experience. The theory suggests that: (1) all learning tasks should be meaningful and self-contained activities; (2) learners should be given realistic projects as quickly as possible; (3) instructor should permit self-directed reasoning and improvising by increasing the number of active learning activities; (4) training materials and activities should provide for error recognition and recovery; and (5) there should be a close linkage between the training and actual system.

- Rapid Prototyping – Rapid prototyping models involve learners and/or subject matter experts (SMEs) interacting with prototypes and instructional designers in a continuous review/revision cycle. Developing a prototype is the practical first step, while front-end analysis is generally reduced or converted into an on-going, interactive process between subject-matter, objectives, and materials.

Complicating the choice of which instructional design model to employ are the various *theories* that undergird the models. A quick digression to distinguish a "theory" from a "model" will serve the reader well at this point in our discussion.

A theory provides a general explanation for observations made over time. It explains and attempts to predict behavior; however, it can never be established beyond all doubt. Theories are often modified when new evidence is introduced to contradict them. Sometimes a theory may be widely accepted for a long period of time and later disproved.

A model is a mental picture that helps us understand something we cannot see or experience directly. Models help us to make sense of complexity and so offers its user a means of comprehending an otherwise incomprehensible problem. An instructional design model gives structure and meaning to an instructional design problem, enabling a designer to negotiate a design task with a semblance of conscious understanding. Models help us to visualize a problem and break it down into discrete, manageable units.

The discipline of instructional design has its share of theories and models that attempt to explain the processes involved in learning. All theories are representations or attempts to detail a complex process. As such, theories and models are open to much debate, discussion and disagreement. We've described several design *models* above. The table below represents a *partial* list of the overwhelming number of learning *theories* currently available to instructional designers, and is included to guide a reader interested in conducting additional research on their own.

Table 1

ACT (J. Anderson)	Double Loop Learning (C. Argyris)	Model Centered Instruction and Design Layering (A. Gibbons)
Adult Learning Theory (P. Cross)	Drive Reduction Theory (C. Hull)	Modes of Learning (D. Rumelhart & D. Norman)
Algo-Heuristic Theory (L. Landa)	Dual Coding Theory (A. Paivio)	Multiple Intelligences (H. Gardner)
Andragogy (M. Knowles)	Elaboration Theory (C. Reigeluth)	Operant Conditioning (B.F. Skinner)
Anchored Instruction (J. Bransford & the CTGV)	Experiential Learning (C. Rogers)	Originality (I. Maltzman)
Aptitude-Treatment Interaction (L. Cronbach & R. Snow)	Functional Context Theory (T. Sticht)	Phenomenonography (F. Marton & N. Entwistle)
Attribution Theory (B. Weiner)	Genetic Epistemology (J. Piaget)	Repair Theory (K. VanLehn)
Cognitive Dissonance Theory (L. Festinger)	Gestalt Theory (M. Wertheimer)	Script Theory (R. Schank)
Cognitive Flexibility Theory (R. Spiro)	GOMS (Card, Moran & Newell)	Sign Theory (E. Tolman)
Cognitive Load Theory (J. Sweller)	GPS (A. Newell & H. Simon)	Situated Learning (J. Lave)
Component Display Theory (M.D. Merrill)	Information Pickup Theory (J.J. Gibson)	Social Development (L. Vygotsky)
Conditions of Learning (R. Gagné)	Information Processing Theory (G.A. Miller)	Social Learning Theory (A. Bandura)
Connectionism (E. Thorndike)	Lateral Thinking (E. DeBono)	Stimulus Sampling Theory (W. Estes)
Constructivist Theory (J. Bruner)	Levels of Processing (Craik & Lockhart)	Structural Learning Theory (J. Scandura)
Contiguity Theory (E. Guthrie)	Mathematical Learning Theory (R.C. Atkinson)	Structure of Intellect (J. Guilford)
Criterion Referenced Instruction (R. Mager)	Mathematical Problem-Solving (A. Schoenfeld)	Subsumption Theory (D. Ausubel)
		Triarchic Theory (R. Sternberg)

Three *supra* learning theories have come to dominate the instructional design field and have been widely studied and applied to the development of training material. They are: behaviorism, cognitivism, and constructivism.

- Behaviorism is based on observable changes in behavior. It focuses on a new behavioral pattern being repeated until it becomes fully automatic. The theory of behaviorism concentrates on the study of overt behaviors that can be observed and measured. It views the mind as a "black box" in the sense that response to stimulus

can be observed quantitatively, *totally ignoring the possibility of thought processes occurring in the mind*.

- Cognitivism is based on the thought processes behind the behavior. Cognitive theorists recognize that much learning involves associations established through contiguity and repetition. They also acknowledge the importance of reinforcement, although they stress its role in providing feedback about the correctness of responses over its role as a motivator. However, even while accepting such behavioristic concepts as "reinforcement," cognitive theorists view learning as involving the acquisition or reorganization of the cognitive structures through which humans process and store information.
- Constructivism is based on the premise that we all construct our own perspective of the world, through individual experiences and schema. Constructivism focuses on preparing the learner to problem-solve in ambiguous situations. Constructivists believe that learners construct their own reality or at least interpret it based upon their perceptions of experiences, so an individual's knowledge is a function of one's prior experiences, mental structures, and beliefs that are used to interpret objects and events. Learning becomes a personal interpretation of the world based on an active process in which meaning is developed on the basis of experience.

A combination of cognitivist and constructivist theories tend to dominate the popular instructional models that have been adopted by many organizations today.

It is precisely because of the vast selection of learning theories and instructional design models available to trainers today that we prescribe the use of a systematic model for design, development, and delivery of training over the adoption of a specific theory or model. While the generic ADDIE model is often the model of choice for instructional designers committed to remaining a-theoretical, we believe a hybrid model known as the Course Development System (CDS) should be the system of choice for the CTE. The CDS contains the recognized five steps or phases of the ADDIE model but arranges the phase components in a manner that is more practical and reflects more accurately the normative experience of a typical instructional designer.

The CDS consolidates proven instructional design procedures in the form of primers, templates, worksheets, and checklists. If an instructional designer *only* uses the CDS, they will by default develop good training. The CDS is designed to be entirely self-contained. Individual activities and elements may be used independently to supplement current knowledge about instructional design, or the CDS process may be worked from beginning to end (recommended). The CDS represents "best practices" for good instructional design, good science, and good design procedures.

A major working assumption under which the CDS was developed was that an efficient instructional design process should minimize the design time investment of an instructional designer. Many fine examples of instructional aides exist in the public domain. It is the intent of the CDS to provide useful templates, worksheets, and examples of work product—the tools of an instructional designer—*in a single document*. Instructional designers are encouraged to imitate the examples contained in the CDS because the tools have been used successfully and are appropriate for the kinds of tasks in which instructional designers typically engage. However, no attempt is made to constrain an instructional designer or prevent them from creatively applying effective instructional design skills they already possess. Rather, the CDS methodology should

complement what the current instructional designer is already doing well while reminding them of tools and procedures that ensure they are employing a "complete" approach to instructional design.

Consistent with our description of an instructional systems design above, the CDS guidelines use and promote a systematic approach to training, many elements of which large training organizations already use because of their logic, simplicity, and practicality. By design, a systematic approach to training should

- group and organize training functions into logical and manageable steps;
- have built-in checkpoints so that an organization can measure whether its training is effective in accomplishing its goals or if it is making efficient use of its time and resources;
- result in cost-effective, practical training that directly supports the work performed by employees.

As noted above, there are many different models for developing training in a systematic way. However, most models contain *at least* the following five steps or components.

1. Front-end analysis
2. Course design
3. Development of training materials
4. Delivery of training
5. Evaluation of training

The CDS incorporates elements of these five steps as "phases" in its methodology and structural content but uses them in a more pragmatic way than most methodologies.

For example, the table below compares the common "ADDIE" model (Analysis, Design, Development, Implementation, and Evaluation) for designing training with the CDS methodology. The ADDIE model is inferior to the CDS because it advocates for activities that often are not executed by training departments due to scarce resources, lack of instructional design expertise, or limited development time. The CDS methodology is focused on the most important—and minimally required—instructional design activities needed to deliver targeted, useful, and practical training.

Table 2 below compares and contrasts the ADDIE steps with the CDS phases:

Table 2

ADDIE STEPS	CDS PHASES	COMMENTS
Analysis • Needs Analysis • Task Analysis • Evaluation Strategy	Needs Assessment (NA)	The NA activity is elevated to the level of a phase. Activities that are typically not done by a training department are not included.
Design • Learning Objectives • Learning Styles • Motivation	Learning Objectives (LO)	LOs are elevated to the level of a phase because of the critical role they play in the development of the training materials.

ADDIE STEPS	CDS PHASES	COMMENTS
	Test and Quizzes	Development of the assessments is accomplished immediately after—and tied directly to—the LOs. (Materials are then developed with the assessment criteria explicitly called out.)
Development • Methods & Media • Case Studies • Role Plays • Course Materials	Materials Development	Focus is placed on complete analysis and understanding of the type of material being trained. A practical taxonomy of content type directs the materials development.
Implementation • Presentation Skills • Discussion Skills • Group Dynamics	Course Deployment	Focus is on the activities required to deploy the course effectively and efficiently.
Evaluation • Reaction • Learning • Transfer • Impact	Program Evaluation	In addition to Kirkpatrick's four-level evaluation methodology, consideration is given to estimating break-even costs of training.

The CDS methodology with its accompanying templates and worksheets is designed as a tool that training practitioners can adapt to their own needs. By conforming to the CDS methodology, training practitioners can manage training better by agreeing to use the best standards for training design and practices, ensuring consistency and standardization across all corporate training activities.

The key characteristics of the CDS are that the methodology is:

- Programmatic (uses step-by-step approach)
- Scalable (designers can use some or all of the steps/templates)
- Practical (support documents may be immediately applied)
- Template-based (most data collection activities are supported by standardized forms or job aids)

The CDS is not a substitute for comprehensive training in any of these important topics. Many reputable, advanced education courses are available in schools across the nation. However, such an education track is simply not feasible, nor is it easily accessible to members of a typical training department. The CDS represents a "necessary and sufficient" approach to excellence in developing training. The recommendations contained in this CDS represent the minimally required instructional design activities that will result in a meaningful and effective training experience for the typical corporate eLearning student.

3.4 Visual Design

The most ubiquitous elements in training materials are, without a question, graphics that supplement didactic text. Consequently, any learning model that does not address the issue of how to best design graphics (a term used loosely to describe any picture,

photo, diagram, schematic, or drawing) is incomplete at best, and irresponsible at worse. While graphic design is not typically associated with learning models, we believe that research clearly argues for an association between the effective use of visual training elements and the efficiency of knowledge transfer.

Design is about the arrangement of shapes on a background pallet. Put multiple artists together and give them a number of common shapes to place on a pallet and you will be presented with as many different designs as there are artists. However, some designs will be more memorable and meaningful than others. Cognitive scientists have studied the relationship of purposeful manipulation of shapes and memory and have developed rules and rubrics to guide designers. A designer of instructional materials would be remiss not to include the study of graphic design as part of a complete model for learning.

The application of the elements of graphic design to training materials has been shown to have a significant impact on the efficacy of the training. Fortunately, the art and science of graphic design is well established. Like other topics on our integrated model, we have adopted a graphic design model that is comprehensive yet easy to learn and apply, and one that lends itself very nicely to a concise curriculum that can be compressed to a single workshop or multiple workshops.

Graphic design has become such a central part of our Post-modern visual language that it has developed into a carrier of meaning at least as significant as the words and images it is presenting. –Keith Robertson in *Looking Closer: Critical Writings on Graphic Design.*

The visual design model we recommend for creating supporting training graphics for any knowledge transfer purpose combines the visual design procedures of Clark and Mayer with a traditional graphic arts design model built on seven distinct design components: unity, gestalt, space, dominance, hierarchy, balance, and color. The combined models can be easily described and presented with examples that reinforce their unique characteristics and contribution to learning in the context of graphics employed in PowerPoint slides, job aids, handouts, Participant's Guides, etc. These components are not too complex for an average student of instructional design to quickly understand and apply. We will recommend a simple but focused curriculum that has been tested successfully with corporate and industrial trainers and shown to be very effective in changing how trainers design graphics to support didactic text or pair existing graphics with training material.

Because typography plays an important and supplemental role in the presentation and understanding of visual training components, we will introduce the science of typography (i.e., use of typefaces, fonts and spacing, leading, etc.) as part of the graphic design curriculum. Trainers can expect to learn the *fundamentals* of typography and begin immediately applying foundational principles to the design of every document they write that contains written script.

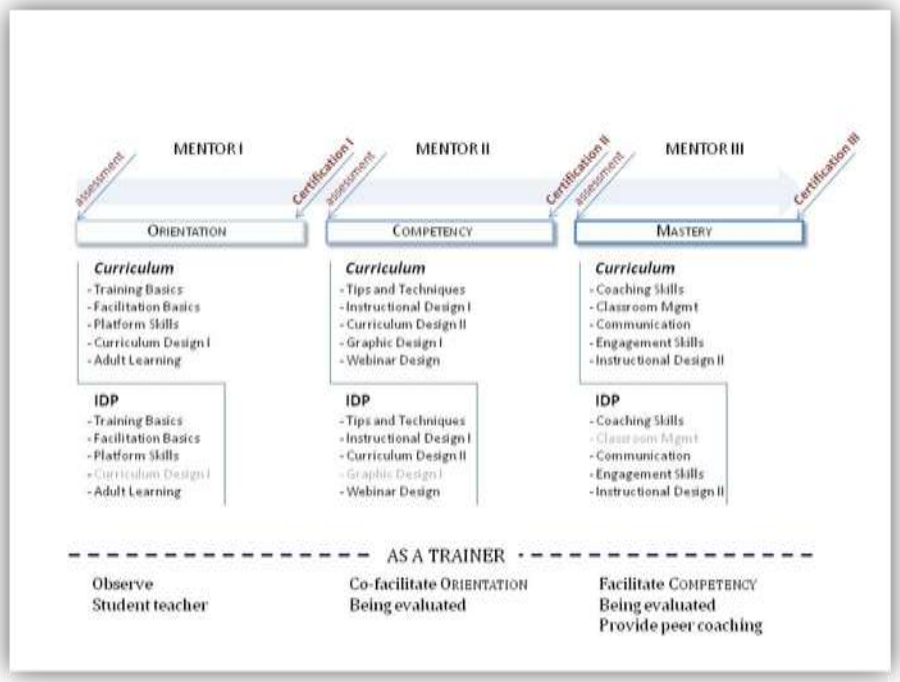
4 THE TRAINING MODEL

If the Learning Model represents the "head" of the CTE, the Training Model is the "heart" of the CTE program, especially the trainer life cycle. The basic concept of the Training Model is simple and one-dimensional: a CTE trainer will demonstrate a set of core competencies as they progress from novice to expert through three distinct training phases. The journey to be certified as a master trainer is codified in a well-articulated set of activities in which all trainers are expected to participate completely, be evaluated against, and demonstrate competency in. While the individual courses and activities are tailored to individual trainers in the form of an individualized development plan (IDP), they are part of a recognized set of skills and activities that, when taken as a whole, represent the core competencies of a master trainer. The trainer life cycle explicitly lays out the curricula in which trainers matriculating through the CTE's program participate.

4.1 Trainer Life Cycle

The trainer life cycle is depicted in Figure 10. It consists of three distinct periods of study in a trainer's matriculation at the CTE. The first period of study is characterized as the Orientation period. The trainer enters the period by completing an entry-level assessment. Based on the results of the assessment, an individualized development plan (or IDP) is created for the trainer that outlines the courses the trainer will take during that period of their training. After completing the customized curriculum for the Orientation period, the trainer is given a certification assessment to demonstrate their understanding of the skills and knowledge associated with that training.

Figure 10



When the trainer is ready to begin the second level of training—the Competency period—they complete a second assessment to demonstrate their readiness. Based on

that assessment, they are once again provided an IDP for that period of study. After successfully completing the course work in the Competency phase, they are given a certification assessment to show understanding of that phase's material.

This set of activities is once again repeated in the final level of training, the Mastery period. However, upon completion of the course work in this phase, successful performance on the certification assessment results in classification of Master Trainer.

The trainer life cycle also includes activities than can best be described as a "practicum" for trainers, activities that are instructional-oriented including observing, student teaching, co-facilitating workshops (at a level lower than their current level), being critically evaluated, and providing peer coaching. Trainers will sign up for these practicum-based activities and be expected to complete them to the satisfaction of their mentors.

4.2 IDP

Creating an individualized development plan for every trainer ensures that the trainer's prior training experience is leveraged when they enter the CTE's program. After reviewing the results of the respective assessment with their mentor (to be discussed below), they can jointly—with their mentor—review the curriculum for that phase of training (i.e., Orientation, Competency, or Mastery) and objectively decide which courses to complete to ensure successful completion of the certification exam for that training phase.

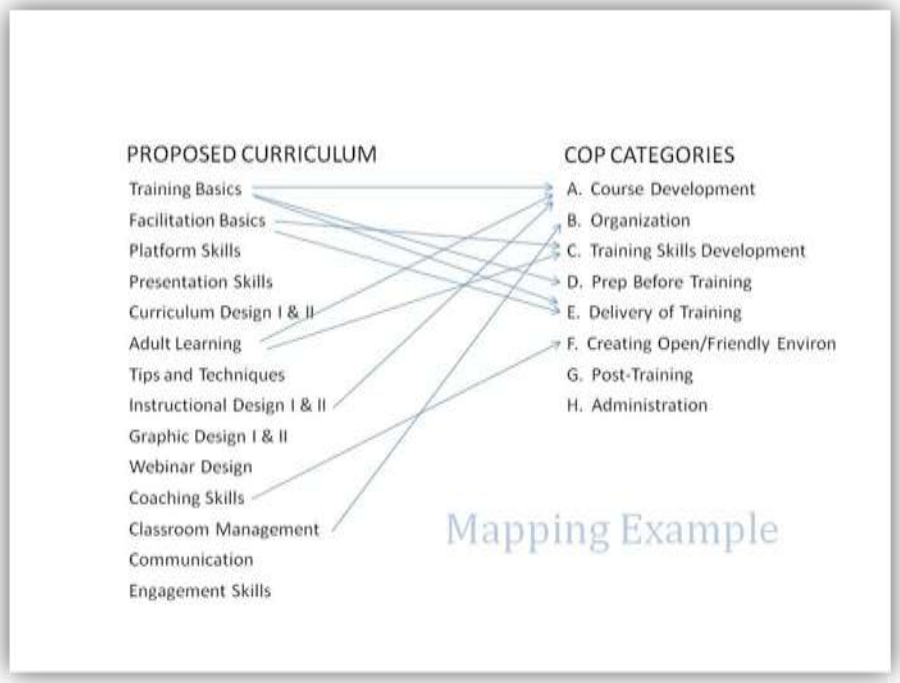
The contents of the IDP should include a listing of the specific courses the trainer should complete as well as ancillary "smart" goals (i.e., specific, measurable, achievable, results-oriented, and time-bound) that will help them grow professionally in each phase of their training.

4.3 Curriculum

The trainer life cycle and the individualized development plan build on, and are dependent upon the existence of an established training curriculum. As noted above, each of the three periods or phases of training—Orientation, Competency, and Mastery—will each have their own specific curricula. The more advanced curricula will of course build on the previous curricula, in some cases completing the training started at an earlier stage in the training.

Several possible curricula are presented below to cover the three training phases. These curricula are based on training industry best practices and represent our expectation of a system of minimum curricula. The *Customized Occupational Profile (COP)* developed jointly by the NSMFI staff and the facilitators from The Pennsylvania State University was considered in the development of the curricula. The proposed curricula map onto the COP completely with no COP category unmapped. Figure 11 shows a sample of the proposed curricula and how easily the proposed curricula cover the COP categories.

Figure 11



Three different curricula are outlined below with potential delivery methods. The *specific* contents of each course will have to be outlined during the curriculum development phase of this project, but the names of the courses should suffice to characterize the purpose of the training.

ORIENTATION CURRICULUM

	DELIVERED VIA				
	eLearning	Class	Podcast	Blog	Learning Moments
Training Basics		✓	✓	✓	
Facilitation Basics		✓	✓	✓	
Platform Skills	✓	✓			
Curriculum Design I	✓		✓		
Adult Learning	✓				✓

COMPETENCY CURRICULUM

	DELIVERED VIA				
	eLearning	Class	Podcast	Blog	Learning Moments
Tips and Techniques		✓	✓	✓	
Instructional Design I	✓	✓			
Graphic Design I	✓		✓		
Curriculum Design II		✓	✓	✓	
Webinar Design	✓				✓
Evaluation Principles					

	DELIVERED VIA				
Designing Facilitator Guides	✓			✓	✓
Designing Participant Guides	✓			✓	✓

MASTERY CURRICULUM

	DELIVERED VIA				
	eLearning	Class	Podcast	Blog	Learning Moments
Coaching Skills	✓		✓	✓	
Classroom Mgmt		✓	✓	✓	
Communication	✓				
Engagement Skills	✓		✓		
Instructional Design II	✓			✓	✓

4.4 Mentor

The discussion of the trainer life cycle has made multiple references to a "mentor" as an integral part of a trainer's success. Indeed, it is inconceivable that a trainer could successfully navigate the CTE's curricula and activities without the assistance of a knowledgeable and invested partner. That role is contemplated to be filled by a CTE mentor, either a NFSMI staff member or an assigned professional, who can participate meaningfully with the trainer as a coach throughout the training program.

The role of the mentor will be a traditional role: meet with the trainer at regular intervals to guide the trainer in making decisions about curriculum choices, offer support and advice about training activities, provide objective feedback to the trainer about their progress against stated goals and timelines, and generally guide them through the administrative activities that are part and parcel of matriculation in a training program.

We contemplate the need for the development of mentor "guidelines" as well as a mentor assessment instrument, the former to standardize mentoring activities, the latter to serve as a measure of competency to serve as a mentor.

4.5 Personal Log

A professional yet personal journey such as the one described in the training life cycle will result in a myriad of opportunities for a trainer to grow professionally and personally. Introduce a mentor into the equation and you have an incredible opportunity for a trainer to benefit from introspection and constructive advice. Because of the richness of the opportunities for growth, we recommend the use of journaling as a way to chronicle the training journey. In addition to the obvious benefits that accrue to a trainer as they memorialize their experiences at the CTE, a personal log or journal provides a discussion catalyst for the trainer and mentor, capturing in real time the trainer's successes and failures and providing opportunities for meaningful discourse. It also offers the CTE a rich source of information to be used (on a voluntary basis, of course) in their program evaluation.

A personal log can either be kept in a journal or stored electronically. The manner in which it is kept is unimportant. What *is* important is that the trainer finds value in memorializing their training experiences as they retrospectively explore their growth and advancement as trainers through the CTE program.

4.6 Trainer Contract

As a way to garner commitment from a potential trainer, and as a tool for accurately and comprehensively explaining the entire CTE experience, we strongly recommend drafting a "trainer contract" to be provided to the trainer and the trainer's organization upon entry into the CTE program.

The "contract" should invite commitment to each aspect of the training experience including completion of the three phases within a certain period of time, embracing the mentor model inherent to the CTE program, and participating in practicum activities through the CTE or the trainer's own organization. The contract should be reviewed periodically by the trainer and the trainer's mentor to realign the trainer's professional training goals to the CTE's vision and mission.

5 THE ASSESSMENT MODEL

Assessments are typically employed as a unique and distinct part of a comprehensive program to evaluate the effectiveness of a training program or online course. Assessments are ubiquitous and robust, and they may be used to support the overall mission of assessing knowledge or skill mastery in any training program. Assessments should be an integral part of any instructional design model because they are effective tools for assessing participants' mastery of material presented in an online session. Assessments, correctly done, also support the organization's need to understand the return on the investment of training.

Additional benefits accrue to the organization by creatively using assessments as part of the training above and beyond the traditional measurement of knowledge transfer. Some of these benefits are that assessments

- create self-awareness on the part of the participant towards their own behavior or attitudes towards a training program,
- relax participants prior to starting training,
- personalize the training by exposing strengths and weaknesses of participants' knowledge base,
- determine additional training and development needs,
- familiarize participants with the expectations of the training,
- provide participants with a personalized and objective report of learning,
- provide a starting point for additional coaching between participant-associates or the instructor and participants,
- to appraise the nature of the change in company culture or course expectations over time, and
- to corroborate information participants already have about their knowledge base.

Evaluation is a process/procedure that should permeate the entire instructional design process, but we most often think of it as a task to complete at the end of the process or at the end of the delivery of the training. Evaluation is a tool to assess the value and effectiveness of the training program, the results of the training, and if the objectives of the training were met. Evaluation is most often accomplished following the delivery of the training giving valuable feedback on the delivery, participant materials, relevance, whether objectives were met, learning that occurred, as well as the effect and impact of the training.

Methods of evaluation may include questionnaires, surveys, interviews, observations, testing (pre/post), and business results analysis. Each methodology can provide effective feedback if designed and executed appropriately.

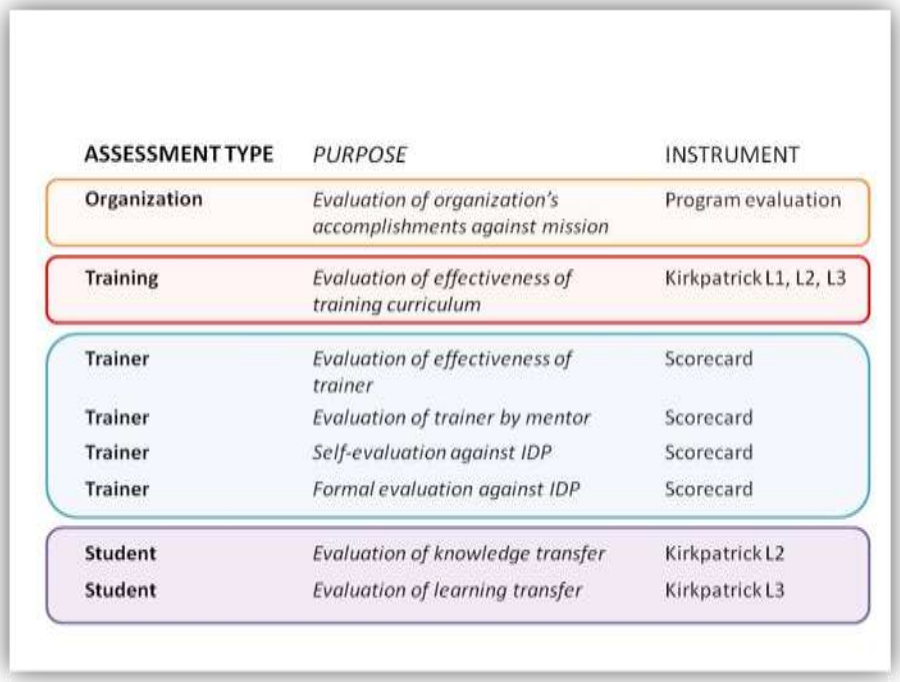
There are two general categories of evaluation: formative and summative. Formative evaluation refers to the judging of the value of the program while it is in progress and thus it focuses on the process. This category of evaluation is most appropriate for evaluating the parts of the program–learning materials, facilitator effectiveness, exercises, etc.–and combining these pieces of data into an overall evaluation.

Summative evaluation focuses on the outcomes of the training program and is usually done at the end of the training or even a time lag after the training. This might include evaluating the

business impact of the training program, i.e., cost reduction or revenue generation resulting from the training.

We propose four different types of evaluation, from macro to micro levels of evaluation of organizational success. We begin with evaluation at the organizational level which typically entails applying classic program evaluation measures. However, at the organizational level, we recommend measuring *three* different aspects of the organizational mission: (1) classic program evaluation, (2) evaluation of the success of deploying the curriculum, and (3) measures of ongoing sustainability or support (not contemplated or discussed in earlier project meetings). Each of these types of evaluation is discussed further below. A general way to depict the various evaluation levels and related instruments is shown in Figure 12 below.

Figure 12



ASSESSMENT TYPE	*PURPOSE*	INSTRUMENT
Organization	*Evaluation of organization's accomplishments against mission*	Program evaluation
Training	*Evaluation of effectiveness of training curriculum*	Kirkpatrick L1, L2, L3
Trainer	*Evaluation of effectiveness of trainer*	Scorecard
Trainer	*Evaluation of trainer by mentor*	Scorecard
Trainer	*Self-evaluation against IDP*	Scorecard
Trainer	*Formal evaluation against IDP*	Scorecard
Student	*Evaluation of knowledge transfer*	Kirkpatrick L2
Student	*Evaluation of learning transfer*	Kirkpatrick L3

Next, we suggest designing and measuring the effectiveness of the training. We recommend adopting the popular and well-documented Kirkpatrick model for training evaluation, and employing the first three levels of the Kirkpatrick model which are "reaction," "learning," and "transfer" (described in detail in section 5.2).

As we've discussed above in the Trainer Model, the focus of the CTE will be to train trainers. Hence, we believe there is a critical need to put into place a comprehensive evaluation system for measuring the effectiveness of the trainers themselves using a multi-stage certification process.

Finally, we would be remiss to ignore the final recipient of the training, what we are calling the "student." We think a measurement tool for evaluating the learning that takes place at the student level should be developed. Similar to the philosophy of the macro-level training evaluation, we suggest adopting Levels 2 and 3 of the Kirkpatrick evaluation model (LEARNING and TRANSFER, respectively) and developing tools which can be provided to trainers in the field

to conduct their own evaluation. We will encourage the field trainers to provide the CTE with their results, but we can't insist on or compel the sharing of regional or local results.

5.1 Organization Evaluation

Organizational evaluation as described here differs from classic program evaluation in that while assessing some of the typical categories of events and activities, it assumes a more direct evaluation of the organization's actual services as well as support to the trainers who participate in the organization's programs. We recommend the following types of evaluation at the "organizational" level:

Table 3

EVALUATION TYPE	PURPOSE
Program Evaluation	Evaluate progress of CTE against vision and mission
Deployment Evaluation	Evaluate effectiveness of types of training deployment (e.g., technologies matched to content type)
Support Evaluation	*Of Resources* – availability and effectiveness of resources *Of Mentor* – evaluation of the mentor model as a significant contributor to the growth and professional development of the CTE trainer

5.2 Training Evaluation

There are several systems for evaluating training programs. One of the most widely used is the Kirkpatrick Model. Using Kirkpatrick's Four-Level Evaluation Model ensures a full range of feedback in validating the training content, delivery, objectives, and effectiveness. It also provides the developer the information needed to "fine tune" and revise the training if necessary. As the levels of measurement increase, so does the complexity of the evaluation methodology as well as the relevance of the feedback.

It is contemplated that each training intervention provided by the CTE will have a system of measurement set up so that it can be evaluated at any level of measurement based on the policy needs of the CTE.

Examples of three of the four levels of the Kirkpatrick model are described below. The fourth level, IMPACT, measure the contribution of training to organizational effectiveness. Because impact is influenced by many other factors in addition to training activities, we will not attempt to measure training effectiveness at the fourth level.

5.2.1 Kirkpatrick Level 1

The first level of evaluation is called REACTION. It measures participant satisfaction while the course is ongoing or upon its completion. This is the most common form of evaluation, and as the name implies, measures how the learners react to the training. This level is most often measured by the use of a questionnaire or survey immediately following the completion of the training. It should be noted that this level of measurement strictly gathers information regarding the participant's perception of the program and not necessarily the effectiveness of the program. However, Level One evaluation is important because it focuses on characteristics of the training presentation that impact

participants' interest, attention, and motivation, which are critical to the success of any training. Below is a partial example of a Level One evaluation.

Workshop Reaction Survey

Please rate your level of agreement with the following statements using the following scale:

1=Strongly Disagree **2**=Disagree **3**=Agree **4**=Strongly Agree

1. The workshop met all of its stated objectives.	1	2	3	4
2. Overall, I was satisfied with this workshop.	1	2	3	4

5.2.2 Kirkpatrick Level 2

The second level of training evaluation is called LEARNING. The Learning level asks the question: Did the participants learn anything? Measuring learning may often include knowledge testing, both pre- and post-training to isolate what was known prior to the program and what knowledge was presumably gained during the training program. This measurement allows the trainer to validate the learning objectives while simultaneously assessing the participant.

A performance-based example of a Level Two evaluation would be to have a training participant demonstrate a behavior before a workshop while the trainer evaluates the performance using a checklist to ensure all key criteria are completed satisfactorily. The same performance task by the training participant after the workshop—using the same checklist—would objectively measure the gain in performance, and by inference, knowledge.

5.2.3 Kirkpatrick Level 3

Level three evaluation, named TRANSFER, focuses on the evaluation of behavior change and should be done shortly after the participant returns to the work environment. This level involves testing participants' capability to perform the learned skills in their normal job environment. Typical evaluation applications of this level include observation—formal (i.e., role play) or informal (i.e., on the job observation)—or the administration of a questionnaire after the participant has had ample opportunity to implement the learning on the job. Below is a partial example of a post-training follow-up survey which would focus on the effectiveness of the training in changing behavior on the job.

Transfer Survey

Please rate your level of agreement with the following statements using the following scale:

1=Strongly Disagree **2**=Disagree **3**=Agree **4**=Strongly Agree

1. I have applied the skills and knowledge from the training in my job	1	2	3	4
2. The skills and knowledge obtained in the training have had a direct effect on my performance	1	2	3	4
...				
...				
...				
10. Please explain or provide examples on how this training has impacted you or your organization's performance.				

5.3 Trainer Evaluation

The core idea is to manage a trainer's development in CTE's program centers around the understanding and application of the Trainer Life Cycle (see section 4.6), but especially the differentiation of trainers' entry level skills. The assignment to an Orientation-, Competency-, or Mastery-level curriculum can only be accomplished if there are reliable assessment instruments available to evaluate trainers' skills.

When evaluated objectively with instruments that have face validity and construct validity, trainers should understand their placements into one of these three levels of curricula. Table 4 below describes the three levels of assessment provided to trainers as they enter and satisfactorily complete each of the three phases of training.

Table 4

PHASE	ENTRY ASSESSMENT REQUIREMENTS	COMPLETION REQUIREMENTS
Orientation	*L-1 Assessment* – Provides information about current knowledge of training skills and abilities required at an entry training level. Results are used to develop IDP and determine which of the standardized courses in the Orientation curriculum are required.	*L-1 Certification* – Demonstrates successful completion of Orientation phase and allows trainer to take L-2 Assessment.
Competency	*L-2 Assessment* – Provides evidence of successful completion of the Orientation-level coursework and provides information for developing IDP.	*L-2 Certification* – Demonstrates successful completion of Competency phase and allows trainer to take L-2 Assessment.
Mastery	*L-3 Assessment* – Results demonstrate understanding and successful completion of Competency-level	*L-3 Certification* – Certifies trainer as "Master Trainer."

	training and provides guidelines for developing IDP.	

5.3.1 Techniques Evaluation

Certain skills that have nothing to do with education have become essential to instructors, and the practice of those skills has a measurable impact on efficacy of training. Three skills in particular are managing classrooms, creating and maintaining a coaching relationship, and making presentations.

5.3.2 Classroom Management Skills

All instructors and teachers work in an environment where they are dealing with different personalities and different levels of exposure to the training topic. The combination of those characteristics can result in a challenging teaching or training environment. Managing classrooms is a taught skill set—there is nothing "natural" about how to respond to the different attitudes that students bring to a training session.

The curriculum contemplates a course on classroom management skills. However, rather than just assessing a trainer's knowledge, skills, and abilities one time, i.e., during the L1–3 assessments, we recommend ongoing assessment of their classroom management skills with a dedicated instrument that is designed as part of the CTE assessment program.

5.3.3 Coaching Skills

Coaching skills improve with coaching opportunities. And while there will be a coaching skills workshop in the standard CTE trainer curriculum, coaching is a skill set that needs constant attention and feedback if improvement is expected.

We recommend the development of a dedicated instrument that focuses on improvement over time of baseline skills that a trainer brings with them to the CTE, whether they enter the program as the orientation, competency, or mastery level.

5.3.4 Presentation Skills

One of the biggest complaints by workshop participants (usually in a Kirkpatrick Level-1 REACTION form) is that instructors are not effective presenters. Instructors' knowledge or enthusiasm for the topic is seldom suspect—it is almost always a result of the instructors' lack of understanding of the science and art of presenting.

Even though there is a great deal of variation in "best practices" in presenting, the fundamentals are well understood. After the Presentation Skills coursework is completed (part of the CTE curriculum), we recommend an ongoing assessment of the trainers' skills with respect to presentations. A standardized checklist of best practices can easily be constructed and used by trainers and their mentors during the trainers' tenure in the CTE program.

5.3.5 Score Cards

The concept of score cards embodies the notion that meaningful and significant measurements about a particular topic, subject, or person can be simplified and consolidated onto a single, one-page document. We envision multiple score cards that are easily managed by CTE—as in a database—and by individual recipients of the evaluations.

Score cards can convey different types of information, but they all offer as a common denominator a "dashboard" look so that numerical information (i.e., scores or measurements) is easily viewed and understood with minimum ancillary text.

Six scorecards are contemplated and are summarized by their function in the table below. "Working names" are given but are not expected to survive the process of developing the final versions of the score cards.

Table 5

	WORKING NAME	QUICK REFERENCE	PURPOSE
1	*Mentor-Trainer*	By mentor about trainer	Provides the mentor an opportunity to generally rate the trainer on progress of mentoring/coaching progress.
2	*Trainer-CTE*	By trainers about CTE	Provides the trainer an opportunity to give feedback to CTE about their learning experiences.
3	*IDP*	Formal IDP	Formalizes the trainer's Individualized Development Plan against the CTE curriculum. This will be the main tool used by the mentor and CTE to evaluate the ongoing progress of the trainer and execute policy decisions about the trainer remaining or continuing in the CTE's training program.
4	*IDP-Self*	IDP self-evaluation	Provides the trainer a tool to measure their own progress against the CTE program; should be shared with their mentor to provide a discussion point or reference for the mentor to evaluate the trainer's self-perception against goals and progress.
5	*IDP-Mentor*	Mentor about IDP	Provides the mentor a tool to give confidential feedback to the CTE about the trainer's progress including recommendations for additional support or supplemental coaching.

	WORKING NAME	QUICK REFERENCE	PURPOSE
6	*Trainer*	Trainer effectiveness	Provides the trainer standardized feedback (via a checklist) about their training performance during any student training they deliver as part of their program. This tool may also be used as a free-standing feedback tool by trainers in their working environments with the purpose of sharing the results with their CTE mentor as a personal coaching opportunity.

5.4 Student Evaluation

Although CTE trainers won't necessarily be responsible for ascertaining the amount of knowledge transfer that takes place in the workplace (i.e., from their nutrition-based workshops), it seems prudent to provide them a toolbox of assessment instruments that they can use in their respective work environments to evaluate their students' learning.

Building on the Kirkpatrick evaluation model, we propose developing REACTION, LEARNING and TRANSFER evaluation templates that can be quickly customized for any type of training conducted by CTE trainers. The templates will reside in a template library accessible to all CTE-certified trainers and will be paired with a samples library that shows interested trainers how other trainers have used and customized the templates.

6 THE DEPLOYMENT MODEL

Learning environments should have a place

- for learner expression (blog),
- for content interaction.
- to interact with other learners (discussion forum),
- to dialogue with an instructor (e-mail, VoIP),
- to dialogue with experts, and
- for storing learning artifacts (digital library).

These requirements are best fulfilled by adopting a *technology-assisted training* framework. The following deployment methods are recommended for adoption by the CTE as means and methods by which CTE trainers can enhance their training experiences. Costs of deploying these technologies are not included, rather this list is intended to serve as a starting point for a discussion about the scope of the CTE vis-à-vis being recognized as a technology center for training.

6.1 Ask the Expert

This describes a feedback mechanism by which trainers can submit questions to a subject-matter expert in any topic that is trained at the CTE. E-mail is often the conduit of choice for the question-answer interaction, but websites with a dedicated "Ask the Expert" column are also popular and well received.

6.2 Blog

Moderated blogs are very robust and can serve multiple purposes simultaneously. For example, trainers can blog their experiences and offer solutions to vexing issues they encounter in the training program. Likewise, CTE staff instructors can anticipate issues by blogging their own instructional encounters and providing solutions to issues that multiple trainers encounter. Blogs can also point trainers to other CTE-approved resources outside of the NFSMI organization.

6.3 eLearning

We are discussing eLearning here simply as a modality for distributing or deploying training. Much discussion has been centered on the philosophy, purpose, appropriateness, effectiveness, and technology associated with eLearning, but none of those topics fall within the scope of this discussion. It will be assumed that NFSMI has accepted the common wisdom in the literature about the appropriateness of eLearning as a training modality for their audience, has its own learning management system (LMS) on which to design and deliver eLearning courses, and has accepted the conventional wisdom with respect to the benefits of eLearning. Consequently, it is assumed that there is no question that eLearning will be an important part of the total training solution of the CTE.

We will restrict our discussion to the question about what proportion of the total training provided by the CTE to its constituents will be designed for deployment in NFSMI's LMS. This will be an important consideration because of the cost and effort of

training CTE curriculum developers in the use of NFSMI's authoring systems and their LMS. As discussed in the Learning Model section above, best practices dictate the use of instructional systems design for the development of all training material, so the only new issue here would be the relative proportion of training deployed via NFSMI's LMS versus other deployment methodologies.

Irrespective of the actual amount of eLearning provided by the CTE, it is contemplated that a library of job aids will be created to simplify and standardize the migration of instructional material to an eLearning environment. This will preclude the necessity of relying only on a single eLearning vendor to develop eLearning-based training. It will also allow the CTE to train instructional designers in the processes necessary to maintain and update materials that are deployed on the LMS.

6.4 E-mail Training

Short, dedicated, "spaced" e-mail-originated training sessions are becoming very popular in eLearning circles because of their proven efficacy in enhancing memory. After designing a specific curriculum, a CTE staff instruction would send regularly scheduled e-mails containing no more than five minutes of training to a subscription list of registered trainers. This is a very effective way to reinforce previous training or engage in purposeful "recurrency" training.

6.5 Instructor-Led Workshops

The CTE has a great deal of familiarity with instructor-led (IL) workshop and so, little has to be said about using IL workshops to deploy training. However, because the economies of training cannot be realized in a predominantly IL-based training organization, IL workshops should only be entertained when the material can't be trained in a more efficient manner, or when an instructor is an essential element of the training methodology (i.e., coached interactions or tutoring). Assumptions about IL dependencies should be challenged when a new course is developed because technology can, and has, replaced many of the traditional IL methodologies in the training industry. For example, role playing was once considered strictly in the domain of IL workshops. However, inexpensive digital video capabilities—and new understanding of the cognitive mechanisms of effective role modeling—have resulted in new, scenario-based video role modeling simulations being deployed in Web-based training.

6.6 Learning Moments

Learning Moments represents a relatively new "push" concept whereby specific key points from training curricula are introduced to students via a brief video or audio asset attached to a subscriber-trainer's e-mail. At a specific period of time following the Learning Moment being sent out, an equally brief assessment is pushed to subscriber-trainers to determine whether they consumed the learning asset and how well they learned the learning content.

6.7 Podcast

The impact of podcasts as a training deployment method cannot be underestimated in the current training environment at institutions of higher learning and for-profit organizations. Digital natives—those learners who are included in the last two generations to enter the workplace, labeled "Gen Xers" and "Millennials"—are *insisting* on convenience and portability for training instances. Consequently, cell phones, iPods,

MP3 players, to name a few electronic devises, are becoming important tools for the deployment of "initial" learning and recurrent learning. Fortunately, the costs associated with creating new podcasts and migrating existing learning (e.g., eLearning) to a podcast format has decreased significantly of recent. Website podcasting management tools are ubiquitous and affordable, removing all barriers to immediate adoption of podcasting as a necessary tool in the learning suite.

6.8 Video Library

The importance of developing and maintaining a general resource library will be discussed in section 7.2 below, but the concept of developing a *video* library begs additional consideration in its own right because it possesses a distinct level of requirements. Because the creation of video learning assets has become ridiculously affordable in the last couple of years, more and more training organizations are moving much of their training into video libraries. Some of the targeted training is appropriate for video deployment—some training isn't. That decision should be made as a function of analyzing the actual training content and determining how best to deliver the training in the context of adult learning principles. However, it should be assumed that CTE trainers are going to benefit from accessing much of their training through a library of coursework that is designed expressly for distribution via video, or simply captured on video and made available for review by trainers who have already taken a specific course.

A separate consideration is the maintenance of the video library: what goes into the library, how the materials are cataloged, what measure of relevancy is placed on the training, content, and how can the CTE ensure the security of the training material.

6.9 Wiki

User-provided and -managed information is a part of education and training; there is no escaping that fact. The question is, how can the CTE benefit from its trainers contributing to the corpus of knowledge about training, especially *after* joining and participating in training as a member of the CTE training community?

We strongly recommend that the CTE become an early adopter of wiki technology and use, and make participation in wiki activities a meaningful part of the CTE trainer experience and culture. In addition to contributing to a community mentality of CTE trainers, wiki contributions, approval, and management significantly increase users' knowledge base about the wiki topics. Setting up a wiki is relatively simple; policies and practices surrounding the use of the wiki are more complex, but reasonably manageable with direction from experienced wiki users.

7 CTE GOVERNANCE AND MANAGEMENT CONSIDERATIONS

As the integrated model was being developed, it became obvious to the OWS researchers that a complete CTE "solution" could not be offered to the NFSMI project team if organizational components were not included in this discussion. That is, while the models that have been recommended will indeed meet the CTE's needs of a comprehensive training and evaluation framework, governance and maintenance of the CTE itself will play an important role in the overall success of the CTE's vision and mission.

The following general subsections explore issues directly associated with managing the CTE, its programs, and its partners. The appropriateness of the questions raised in the following subsections should be considered separately from approval of the integrated model.

7.1 Standards and Oversight

The first organizational consideration is one of how to establish and manage the strict standards that will need to be set by the CTE as it evolves. Standards will provide direction for managing the quality of the CTE's programs and implementation, and ultimately, provide a clear framework for creating certification guidelines. After the CTE has matriculated the first of its trainers, those same standards will need to be validated *ad hoc* to ensure they are appropriate and meaningful and contribute to the ongoing success and maintenance of the CTE. Examples of categories for standards include (1) recruiting and retaining, (2) training and supervision of trainers, (3) leadership and management practices, and (4) monitoring and evaluating programs.

In order to establish and maintain standards, the CTE will require oversight in the form of designated persons or committees. The committees can be formed by CTE staff, or they can be comprised of volunteer members from strategic training partner organizations. Continuity of participation will be an important criterion in selecting oversight committee members to ensure consistency of standards.

7.2 Services and Offerings

A key question for the CTE is what services and offerings will characterize the CTE? Will the CTE be known *only* for its training of trainers through its trainer life cycle model, or will it also provide trainer development services to a broader audience? Perhaps even act as a for-profit entity to support the costs of maintaining the CTE? Examples of potential services follow.

7.2.1 Stand-Alone Workshops

Stand-alone workshops taught by recognized experts are highly sought after in the training industry. The CTE will quickly develop credibility as a training organization both as a function of its relationship with other organizations in the nutrition training industry and because of its affiliation with the NFSMI and University of Mississippi. Specialized workshops based on the CTE's train-the-trainer curricula could be easily adapted to any trainer practitioners, placing the CTE at the forefront of the professional training community.

7.2.2 Position Papers

As the CTE gains experience with its own programs, it will likely want to document its progress and development both for specific evaluation purposes and to provide formative evaluation feedback to CTE staff for modifying programs. A conscious effort to organize information and document it for public consumption would result in the possibility of sharing invaluable research findings within the educational community as well as the corporate training industry. Effort should be made to publish non-proprietary, internal evaluation results in training journals and trade magazines while developing a library of position papers on every aspect of the CTE.

7.2.3 Multilingual Products

A decision should be made as early as possible about the extent to which the CTE will serve multilingual audiences. An early decision will help the CTE determine which ethnic audiences would benefit most from multilingual training products and shape how the CTE can partner with established translation houses to accomplish translation at a minimum cost.

7.2.4 Coaching/Tutoring

CTE staff and selected volunteers will develop invaluable experience acting as mentors in the trainer life cycle model. That experience could be memorialized and shared with others in a structured fashion as separate coaching or tutoring workshops. Other training organizations would benefit from the mentors' collective wisdom and experience, developed in the context of a training community of excellence. At a minimum, CTE mentors should be required to systematically document their experiences so that those experiences can be analyzed later for improving the trainer life cycle program.

7.2.5 Technology Assistance

The CTE staff will quickly become experts in training technologies as they experiment with various methods for delivering their training workshops and products. This raises the question as to whether they would be willing to provide leadership in technology-assisted training for other similar training organizations or corporate training departments. Such a service could prove valuable because it creates a free exchange of information about the experiences of training organizations with various technologies, placing the CTE at the center of the discussion—with the most to gain from the information exchange.

7.3 Clearinghouse Concept

There exists a unique opportunity for the CTE to position itself as a "conduit" for information it learns about itself and the training industry as it develops and matures. In other words, the CTE could adopt a clearinghouse philosophy early in its development and act as a broker to other training organization for information it collects through research or experience over subsequent years. The obvious benefit to the CTE would be that it would quickly develop a reputation for being a community of practice and a first-source center for training information.

If the CTE were to accept the responsibility of a operating as a clearinghouse for training research and information, it would need to quickly resolve several logistical and policy issues such as how to structure and organize new information, how to make the information available, and how to ensure that contributed information is reliable and appropriate. The following specific issues would have to be resolved before a clearinghouse concept could be adopted.

7.3.1 Library Structure

How could the information be stored and shared with minimum impact and intervention on the part of the CTE staff? Conceivably, once the training industry became aware of the CTE's library of information, the logistical burden for managing the library could become onerous for the small CTE staff. Ideally, material could be stored and retrieved electronically with little or no oversight on the part of the CTE.

7.3.2 Content Categorization

In order to facilitate locating relevant material, the library would have to develop or adopt an intuitive taxonomy for classifying or tagging content. That taxonomy should have some parallel in the training industry or be so radically intuitive that the training industry begins imitating the CTE with respect to cataloging training information.

7.3.3 Availability of CTE Products

A policy-based decision will need to be made early in the development of a resource library about which materials are available and to whom. It may not be prudent to release all CTE-owned training materials to all requestors, especially if it is the intention of the CTE to copyright any new and innovative training techniques or processes. Clear policies about which materials should be allowed to circulate in the public domain will need to be established.

7.3.4 Resourcing for Materials

Another early, policy-based decision should center on what constitutes an appropriate source for training materials, ideas, or guidance. While there are numerous credible sources that can provide scientific guidance for training and trainer development, there are far more *non-credible* sources in the public domain—and in the literature—masquerading as centers of expertise about training. The CTE staff will need to develop specific criteria for inclusion and clear decision-making rules to safeguard the CTE's library of resources.

7.3.5 Material Updating Procedures

Having populated a library with relevant training resources and content, the CTE staff will need to ensure the material *remains* relevant. This can only be accomplished by ensuring that a periodic review of extant resources is conducted, resulting in the discarding of out-of-date material or its replacement with more current material. Again, specific policies should be established to remove the subjectivity of interpreting the relevance of library material.

7.4 Governance

An early discussion about the governance of the CTE revealed that it is contemplated that the CTE will be governed by NFSMI staff, at least initially. Until such time as this plan is no longer feasible, and for sake of this discussion, the following topics are constrained by the assumption that the CTE staff is a subset of the NFSMI staff. Notwithstanding that assumption, the following issues are not clearly resolved and bear additional discussion and resolution.

7.4.1 Leadership Structure

What exactly is the leadership structure of the CTE? Will there be an executive director? An associate director? Will staff trainers have leadership roles as well as training roles? What are the criteria for each level of management? Are there explicit core competencies that should be in evidence at each level of management? How will the leadership be evaluated?

7.4.2 Organizational Structure

Can an organizational chart be created based on the assumptions of how the leadership team will be formed? What is the span of control of the management team? What form will the organization take, function-based or form-based?

7.4.3 CTE Team Member Training

What leadership model will be adopted as a training basis for CTE team members? How will the CTE staff be trained? What kinds of assessments will be conducted on the CTE team members? The CTE training staff will be expected to have a superior level of knowledge when compared to the participants' knowledge base. It shouldn't be assumed that the NFSMI staff members who will assume roles of responsibility at the CTE can themselves be considered "masters" in all levels of training represented by the CTE curricula. Assessments should be conducted as early as possible so that CTE staff can be trained to criteria in all CTE training topics.

7.4.4 Mentor Pool

According to the trainer life cycle model, mentors will potentially play an essential role in the experiences of trainers matriculating through the program. This places a heavy burden on the CTE to adequately populate the mentor pool with qualified, experienced mentors. What are the criteria for mentors? If the mentor pool is not sufficiently large to provide all incoming trainers mentors, how can the pool be quickly staffed? What is the right model for developing mentors as coaches?

7.4.5 Succession Planning

Accepting that all organizations experience attrition in their lifetime, it seems reasonable to think ahead to a succession plan for CTE senior management team members. While an organizational chart will need to be developed before a succession plan can be crafted, it is nonetheless not too early to begin considering how to find replacements for every key member of the CTE.

Irrespective of how many of the CTE's training products and services can be automated and delivered without staff involvement, the staff will play a pivotal role in the maintenance and support of the CTE. Given the anticipated small size of the CTE staff, the loss of one key team member would have a deleterious effect on the workings of the organization. Early attention to succession planning will reduce the CTE's vulnerability to paralysis should a key team member leave.

7.5 Networking and Outsourcing

NFSMI has successfully worked with other professional organizations in the past to support their various training initiatives, and they contemplate following this collaborative model for developing a network to support the CTE. Networking with other organizations is essential for increasing the relative "bench strength" of the CTE's expertise in the learning sciences because it is unlikely that the NFSMI will be able to support all of the programs it wishes to disseminate through the CTE with its current staffing model. Outsourcing some of the management, development, and delivery of training elements is a very viable mechanism to adopt early in the planning stages of the CTE structure.

There are several very thorny issues associated with networking and outsourcing. Some of these topics have been discussed internally by the NFSMI team but understandably remain unresolved at this point in time. They are included in this document below as discussion points, with the expectation that they will be resolved during the planning phase for the curricula development as they will shape policy around how networking and outsourcing will be conducted.

7.5.1 Professional Organizations

Professional organizations are constantly on the look-out for other organizations with which they can affiliate. The CTE will be an attractive entity to partner with because of the NFSMI's many current educational and professional associations. Care should be taken when developing affiliations to carefully define the nature of the future professional relationship so that the CTE can be assured a symbiotic partnership will result. The CTE will ultimately develop comprehensive curricula that other training organizations will want to emulate—some by simply imitating what the CTE is doing without offering services or a knowledge exchange. While the CTE has as a core value the desire to share its (current and future) cumulative knowledge, wholesale appropriation of the CTE's knowledge base should be avoided because it will result in the dilution of the perceived value of the CTE's offerings.

7.5.2 Net-Based Associations

As virtual organizations become more prolific and gain widespread acceptance as centers of excellence, the CTE should consider developing a committee to identify and vet relevant net-based educational learning associations to share knowledge, practices, and programs. Affiliations with net-based associations will also provide a potential pool of trainers, mentors, and researchers. The beginning of such a list is included in the section of this document entitled Relevant Associations.

7.5.3 Funding

The question of funding is included here only as a placeholder for a future discussion, and to ensure that the topic is not overlooked. While funding issues are beyond the scope of this project per se, it is relevant in the sense that other issues have been identified herein that could conceivably impact funding models such as fees that could be collected under the auspices of the CTE as a clearinghouse.

7.5.4 Remuneration

Again, while technically beyond the scope of this PHASE I deliverable, the question of remuneration is included here to encourage the NFSMI staff to consider creative staffing and support models based on the CTE's ability to generate income by selling its training services. While it has been previously established that the CTE team will initially consist of paid NFSMI staff, paid "volunteers" present a very attractive alternative for building the CTE staff.

7.5.5 Records Maintenance

It is often the case that recordkeeping practices vary as a function of whether the target of the record is in the actual employ of an organization or has some other relationship to the organization. As the CTE matures, it will serve the organization well to systematically collect and organize all information it has available about affiliations, partnerships, volunteers, and collaborative relationships so that a meaningful research database can be constructed. Such a database will help guide the CTE in objective decision making, as well as provide it with a rich pool from which formative and summative evaluations may be conducted as part of the CTE's assessment practices.

7.6 Policy Issues

The policy issues that are listed below are common to any training organization that offers a certificate as an acknowledgement of the attainment of advanced knowledge in a specific domain. They are included here for future discussion and resolution.

7.6.1 Continuing Education Units (CEUs)

Will the CTE offer continuing education units (CEUs) or credits for successful completion of coursework? If so, which coursework and how many CEUs? Which associations will accept the CTE's CEUs as evidence of continuing education?

7.6.2 Fees

If fees can be collected for attending or participating in the CTE's workshops, classes, eLearning, or other training experiences, how will the fees be set? Can a Web-based enterprise engine be used to collect fees? Can the fees be used to offset the costs of running the CTE?

7.6.3 Certification Renewal

Assuming some version of certification will be offered through the CTE to trainer participants, how will the CTE ensure the training remains current in the face of an ever-changing and improving discipline? Will past participants be provided an opportunity to complete recurrency training (i.e., an abbreviated version of the original training) to keep certificates current? Who will manage the renewal? Will participating agencies accept a renewal with the same level of confidence as an original certification process?

7.6.4 Records Maintenance

As soon as the CTE opens its doors for business, they will immediately face an issue of how best to manage participants' records. Recordkeeping will be of paramount importance to participants because of the potential for advancement resulting from additional training in their profession. Because of the great value placed on accurate records, a burden will be placed on the CTE to develop processes to effectively manage all trainer-related records such as profiles, individualized development plans, records of course completion and assessments. An early decision will have to be made about the manner in which records are stored (i.e., paper or electronically) and whether participants will have free and unfettered access to their own records versus requesting transcripts.

7.6.5 Equivalent Education

Because the profiles of CTE participants will vary, some with little training experience and some with years of training, undoubtedly the question will arise as to how an experienced participant entering the CTE's trainer program can "waive" some of the coursework based on their past training experiences. Consequently, it will be important to develop clear and unambiguous criteria that can be used by new participants' mentors in determining appropriate individualized development plans.

7.6.6 Registration

An important logistical issue that should be considered prior to the opening of the CTE is that of managing registrations for the CTE's programs. If the registration process can be automated, considerable administrative time can be saved on the part of the CTE staff. Presumably, the CTE can expect to see an early rush on the part of nutrition professionals to request training. Resolving the administrative issues around registration will quickly unencumber the CTE staff, allowing them to focus on more important activities.

8 BENCHMARKING RESULTS

The purpose of a benchmark study is to find out what other organizations in a similar situation are doing with regard to a specific topic (or topics). Benchmarking takes the study administrators through a process that will, if done properly, lead to discovery of best demonstrated practices for the topic(s) being researched. While benchmarking can be a time-consuming and resource-heavy undertaking, it is important primary research that can serve as a guide for others with similar goals as the benchmark participants.

The National Food Service Management Institute (NFSMI) partnered with OrgWide Services, LLC to conduct a benchmark study to aid in the design of the CTE. The purpose of the study was to find out how other organizations train adults, or, more specifically, how other organizations train adults to train other adults (train-the-trainer). OWS used the results of the study as a guide in developing the model around which the CTE will be built. Therefore, the study results have immediate application.

Additionally, the CTE will be able to use the study results again when it applies for the Baldrige National Quality Award (BNQA) as the BNQA requires, within several criteria categories, applicants to benchmark against industry standards and/or similar activities of organizations that may operate outside of the educational community.

While considering its unique goals and perspective, OWS tailored the criterion used to create the list of potential benchmark participants specifically for the CTE. In summary, the criterion is that a potential benchmark participant fit in one of the following categories: (1) has a "train-the-trainer" program, (2) has a Master's, Ph.D., or Ed.D. program in adult education, or (3) is a BNQA Winner, especially those in the education category.

OWS created a list of 43 potential participants to target for the study. Of the 43 potential participants, six participated.

8.1 Methodology

The Survey and Testing Services (STS) department of OWS headed the benchmarking project. Potential participants were selected for inclusion in the study based on the following criteria:

- has a "train-the-trainer" program,
- has a Master's, Ph.D., or Ed.D. program in adult education, or
- is a BNQA Winner, especially those in the education category.

These criteria resulted in the development of a list of 43 potential participants.

After searching public records and making investigative phone calls to determine the appropriate decision makers in these organizations, each was contacted and invited to participate in a 30-minute telephone interview.

Twelve organizations agreed to participate.

Introductory telephone interviews were conducted.

Six organizations with the following characteristics participated:

1	For-Profit
2	Not-For-Profit
2	Higher Education Instituted
1	Primary/Secondary School*

*a former BNQA Winner

8.2 Summary of Results

The results have been summarized by question below. The first tables provide various statistics that reflect mean response scores or counts (labeled). When appropriate to clarify a response, verbatim responses have been included.

Q1: Do you have (1) a dedicated training department that delivers training across the organization, (2) training done in the various business units by experts from those business units, or (3) both?

Response Options	Response
Dedicated Training Department	67%
Training is done in business units	0%
Both	33%

Q2: What percentage of the training you deliver is developed in-house? Off the shelf?

Response Options	Response
In-house	89%
Off-the-shelf	11%
100% In-House	67%

Q3: Have you ever used a network of external (professional) trainers to deliver your training? Was it successful?

Response Options	Response
Yes	67%
Always successful	75%*
Sometimes successful	25%*
Never successful	0%*
No	33%

*Percent taken from those who answered "yes"

Q4: Generally speaking, what percentage of your training is delivered via: Instructor-Led, eLearning (Computer-based on-site, Computer-based distance learning), or Blended?

Response Options	Response
Instructor-led	56%
eLearning	17%
Blended	27%

Q5: Which of these other technologies do you use to deliver training? (Respondent could select more than one category.)

Response Options	Response
Video	67%
Job Aids	50%
Blogs	33%
Podcasts	33%
Performance support systems	17%
Pushed e-mails	17%
White papers	17%
SOPs	17%
Webinar	17%

Q6: Do you recognize or subscribe to any particular learning theories or learning models as a basis for the training that you develop in-house? [Give examples.]

Verbatim Responses	Count
ADDIE	1
National Staff Development Counsel	1
Adult Learner Model	1
Kirkpatrick's Four Levels of Evaluation	1
David Kolb's Learning Styles	1
Kolb's Theory of Experimental Learning	1
Knowles Andragogy	1
Senge Theory	1
Theories of Motivation and Participation	1
Characteristics of Adult Learners	1
Adult Development and Learning	1
Spirituality in Higher Education	1
Tisdell, Mayhew, and Lange	1
Freire's work related to cultures	1

Q7: What emphasis do you place on the understanding or application of adult learning theory for the development of your training?

Response Options	Response
Significant emphasis	83%
Some emphasis	
Little emphasis	
No emphasis	
No answer	17%

Q8: How would you characterize your development of trainers?

Response Options	Count*
Non-SMEs using a specialized curriculum	1
SMEs using a specialized curriculum	2
They are SMEs and develop training skills on-the-job	2
They are SMEs and work with another trainer	2

*One organization indicated their approach is 40% "They are SMEs and develop training skills on-the-job" and 60%" They are SMEs and work with another trainer."

Q9: How do you select potential trainers?

Response Options	Count*
Internal—most knowledgeable	4
Internal—training department	3
Internal—they volunteer	4
External hires	2

*Most organizations used more than one option to select potential trainers.

Q10: Which of the major training organizations do you belong to or participate with? [ASTD, eLearning Guild, local university]

Verbatim Responses	Count
ASTD	2
Canadian Society Training and Development	1
Local University	1

Q11: Do you have a favorite curriculum you would recommend for training trainers?

Responses Given	Response
Our own	100%
Somebody else's	0%

Q12: In the past, what has been the most effective way you have found to train trainers?

Verbatim Responses
Example: Instructional Design for New Designers course gives clients the tools to start from scratch. We use a "1/3 instruction; 2/3 practice" formula, which is very important and clients are asked to do the same at work. The designing of the training is the most critical - teaching the design aspect.
Following our own model – provide face-to-face time, and then we practice, and we monitor it and watch and provide feedback and coaching. Instructional Facilitator model – some trainers have used the model for six years, but they still have ongoing support. For other leaders, though, it's once a month. Longevity that assists in continuity piece. Not a lot of turnover (within the core of leaders, there is a 2/3 of people who have been there, core has deep memory and history and toolbox to fall back on).
The best way to train trainers for us has been face to face in a demonstration of models and a hands-on practice and critique of student's use of models. Albeit this is an accredited university course, it's not delivered in the typical university manner, and that has been our success.
Classroom, interactive, objective based, best practice
On-site training
No answer

Q13: How do you typically assess the effectiveness of your trainers?

Response Options	Response
Formal evaluation system	100%
Informal evaluation system	0%
No evaluation system	0%

Q14: Do you certify your trainers before they are allowed to deliver training? [Informal or formal]

Response Options	Response
Formal certification system	50%
Informal certification system	16.3%
Part formal and part information certification system	16.3%
No certification system	16.3%

Q15: Do trainers get evaluated by students?

Response Options	Response
Yes	83%
No	0%
Un-interpretable response	17%

Q15: Follow-up: How are the evaluations used to develop the trainers?

Verbatim Responses	Count*
Reviewed immediately	4
Reviewed periodically	2
Used to create growth plan	2
Un-interpretable response	*1*

*Some organizations review the evaluation forms immediately after a training session as well as during a periodic review (annually, quarterly, etc.).

Q16: How many training/seat hours a year does your organization deliver?

Responses Given	Count
1,000 hours	2
Don't know	4

Q17: How many students/learners a year does your organization service?

Range of Responses Given	Count
>10,000	1
9,999 – 500	2
<500	2
Don't know	1

Q18: What percentage of your training is mandatory? Voluntary (i.e., for personal or professional development)? (Percent given is mandatory)

Response Options	Response
Mandatory	82%
Voluntary	18%

Q19: How many dedicated trainers would you say you have?

Range of Responses Given	Count
<40	4
41-100	1
>100	1

Q20: If you had to design the program all over again, what would you do different?

Verbatim Responses
Somebody is in training and has some knowledge, designs programs for lowest learner – some say the program could have been shorter
Would have insured that comm. Or skill sets they provided IF was provided to assistant principals and principals (maybe in condensed fashion). Left gaps in other leadership areas. Better approach to evaluation to IF allowing a larger portion to be principal drive, site-based driven. In beginning, it was created and implemented, and they were learning as they went, so a lot of focus was on model of coaching and understanding systems approach. A lot of people were gifted in implementing and didn't do as good of a job as building foundational knowledge in andragogy and listening skills.
A 2010 needs assessment would show that we could be more knowledgeable about current instructional technology.
I would place equal emphasis on classroom and Internet-based deliverables. In addition to conventional classroom training, I would include education online (streaming education).
We are constantly re-designing because of the changes in technology. Our programs are going online at this time. We are constantly re-evaluating and we are in a constant state of change.
We would not do anything different than what we have decided to do (i.e., going thru the institute).

Q21: What would you do the same?

Verbatim Responses
Everything else
Maintain 1 to 7 ratio, continue adult-learning focus, continuous improvement model; build in-house capacity and expertise; definitely use IF Model again; Develop and use their own materials. Help people understand how all pieces of initiative help each other, it doesn't feel so overwhelming – continue that focus
One of the strengths of our program is a rigorous commitment to our model. There are too many "train a trainer" programs that simply expose the reader instead of actually showing them how to do.
I would do just about the same. We are very blessed to have a program of excellence.
I would hold up the standards just as we have always done. There seems to be a push and trend to reduce the number of hours to get degrees, and we do see reduced expectations to get a degree, however we have held to our high standards.
Everything

9 SUMMARY

This summary document began with a brief overview of the 2004 initiatives that resulted in a decision to develop a center for training excellence. The summary then discussed the results of a comprehensive literature review OWS conducted about the learning sciences, culminating in the recommendation that the CTE adopt an "integrated model" consisting of four sub-models. Individually, these sub-models are important in their own right, and are well-researched and well-accepted in the training industry today. Building on what are already understood to be foundational principles in the learning sciences, we have developed a customized, omnibus model for the NFSMI to use in designing the CTE's curricula. It is our professional belief that this combination of interdependent models will provide the CTE with the greatest probability of success in achieving their vision to "provide meaningful and dynamic learning experiences that empower professionals to serve the needs of child nutrition programs across America."

However, a scientifically-based curriculum cannot stand on its own without proper support. To that end, we have gone beyond simply recommending a curriculum model and explored and articulated what we understand to be key issues associated with the ongoing maintenance of the CTE organization. The NFSMI staff has been encouraged to consider governance and organizational management questions that will have a direct impact on the longevity of the CTE as well as its credibility in professional circles. Issues about services and offerings have been raised to challenge the NFSMI staff to consider the possible scope of the CTE's reach and impact in future years. Policy challenges have also been introduced to invite early resolution of key issues that will impact later development and direction of the CTE.

We conclude this summary document by sharing resources that have proven to be useful in providing this guidance and that have helped shape our recommendations. Much in the same way that we potentially benefit in an economy that has become global, the CTE will want to quickly establish strategic relationships with the "global" learning community to benefit from the collective knowledge and experiences other organizations have gleaned from their own developmental journeys.

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RESOURCES

Resource	Overview
Book: *The Trainer's Handbook, Updated Edition*, Pfeiffer, Karen Lawson	The Trainer's Handbook walks readers step-by-step through the training process and contains tips on assessing the needs of participants, keeping training learner-centered, incorporating activities into training, selecting audiovisual aids, and closing sessions creatively. As practical as it is instructive, the guide is filled with worksheets, checklists, and assessments--reproducible on the accompanying CD-ROM--that are designed to be flexible so trainers can plan their own paths to success. New content shows trainers how to train successfully in a down economy, as well a new Instructor's Guide.
Book: T*rain-the-Trainer: Facilitator's Guide*, Pfeiffer, Karen Lawson	The demand for training often exceeds the available resources. That's when organizations turn to their subject matter experts. These employees often have no training experience, but they have valuable information to share with their co-workers. The Train-the-Trainer workshop is the helping hand that no new trainer can do without. The Facilitator's Guide gives you the tips, tools, checklists, and guidelines you need to conduct an effective, interactive train-the-trainer program. You'll teach new trainers how to * conduct a needs assessment, * identify their training style, * design their instructional plan, * use active training techniques, * deliver their training, * evaluate their training . . . and much more!
Book: *The Trainer's Journey to Competence: Tools, Assessments and Models,* Pfeiffer, Jean Barbazette	The Trainer's Journey to Competence draws on Jean Barbazette's thirty-five years of experience in training trainers. The book serves as both a useful source of career advice for those in the training field, and as a starting point for creating a role-specific professional development plan. Professional trainers can use this resource to assess their knowledge, skills, and attitudes and use this information to create an individual development plan. The book can be equally helpful when creating internal training certification programs for organizations. The Trainer's Journey to Competence is filled with numerous assessment tools for benchmarking current competencies and identifying gaps in knowledge and core skills. The book also includes a companion CD-ROM that is filled with checklists, tools, forms, and templates that can be easily customized to address particular situations.
Book: *The Art of Great Training Delivery: Strategy, Tools and Tactics,* Pfeiffer, Jean Barbazette	This is a new book in The Skilled Trainer series that provides practical guidance for those who've had some exposure to training and would like to take their career to the next level. This book is intended to help beginning trainers move their training and facilitation skills to the next level. It offers practical advice--and dozens of examples--on selecting and using a variety of training methods to create the best learning experience and improve learner retention.

Resource	Overview
Books: *Train-the-Trainer – Instructor's Guide* and *Train-the-Trainer – Course Book,* Human Resource Development Press, Penny Ittner & Alex Douds	The proven workshop for teaching non-professional trainers to develop and conduct effective training is back. Train-the-Trainer Workshop, 3rd Edition, is thoroughly revised and updated, making it the most complete and valuable book of its kind available today. This powerful workshop will help you bring your managers, team leaders, and other non-trainers quickly up-to-speed in the basic skills required to develop and conduct training–confidently, competently, and with ease. Participants will learn how to: identify new ways training can be used in their jobs; clearly understand how adults learn so they can teach others; analyze training requirements—the first step in successful training; develop learning objectives that provide the direction for the rest of their training; select the most appropriate training methods; develop and use training aids the right way; create lesson plans; use basic facilitation skills; increase participation; conduct training using their lesson plans; evaluate training; and transfer newly-acquired training skills to the work setting.
Book/Binder: *Adult Learning Principles Workshop – Instructor Guide and Participant Course Book,* Human Resource Development Press, Sharon Fisher	Adult Learning Principles is a comprehensive training course exhibiting the highest standards of instructional design and available only as a licensed curriculum. It is a fully customizable, trainer-led curriculum and carries full reproduction rights. Now you can re-create a course developed at 20 times your cost, developed to the highest standards of instructional design. All materials are included for trainer-led sessions including approaches to accommodate different learning styles and exercises on topics like knowledge retention. TOC: Introduction, Course Purpose & Objectives, Individual Learning Objectives, How Adults Learn (Physical Factors, Emotional Factors, Intellectual Factors), How to Use Adult Learning Principles: Learning Activity, Course Summary, Self-Assessment, Course Evaluation, Course Development Sources
Book: *Train the Trainer, Volume 1: Foundations and Delivery,* ASTD, Editor: Cat Russo	Volume 1 gives you the basics you need to get started. You'll hear from the experts how to set up the best learning environments. Plus, you'll get dozens of presentation techniques you can use tomorrow! This collection is the first step for anyone who wants to get started in training today. TOC: Basic Training for Trainers, Training and Learning Styles, The Transfer of Training, Good Learning Environments, Facilities Planning, How to Teach SMEs to Train, Make Every Presentation a Winner, Ice Breakers, 10 Great Games, More Great Games, Simulation and Role Play, Coaching and Feedback
Book: T*rain the Trainer, Volume 2: Instructional Design & Implementation*, ASTD, Editor: Cat Russo	In Volume 2, you'll gain an understanding of instructional design and learn how to develop the curriculum. You'll get a firm foundation in conducting needs analysis, design and development, and identifying key objectives. Plus, you'll learn how to develop effective job aids. TOC: Project Management, How to Budget Training, Basics of ISD, Needs Analysis, How to Conduct a Mini Needs Analysis, Task Analysis, Course Design & Analysis, Lesson Design & Analysis, Behavioral Objectives, Instructional Objectives, Training Manuals, Effective Job Aids

Resource	Overview
Book: *Train the Trainer, Volume 3: Training Programs*, ASTD, Editor: Cat Russo	If you have read Volume 1 and Volume 2 of this title and have designed your curriculum, you're ready to "go live." Volume 3 is filled with examples of a variety of basic training and workplace learning programs that you can use. You'll get the detailed descriptions, along with insider tips, you need to follow to ensure that your next training program or workshop is a success! TOC: How to Facilitate, Effective Workshops, Orientation Programs, Mentoring, Succession Planning, Change Management, On-the-Job Training, Supervisory Training, Call Center Training, Sexual Harassment, Customer Service, Management, Strategic Planning
Book: *Train the Trainer, Volume 4: Measurement & Evaluation*, ASTD, Editor: Cat Russo	Train the Trainer is a four-volume collection, containing the best and most popular issues about the training process--from instructional design to ethics to evaluation. Train the Trainer, Volume 4, offers readers details on evaluation essentials, establishing evaluation criteria, understanding various test types and styles, how to measure training on-the-job, capturing behavior in the workplace, and demonstrating how training affects the bottom line. This volume includes the following 15 issues: Essentials for Evaluation; Evaluating eLearning; Four Levels of Evaluation; Level 1 Evaluation: Reaction and Planned Action; Level 2 Evaluation: Learning; Level 3 Evaluation: Application; Level 4 Evaluation: Business Results; Level 5 Evaluation: Mastering ROI Link; Training to Your Bottom Line; How to Collect Data; Evaluation Data: Planning; and Use Surveys from Start to Finish Using Electronic Surveys; How to Conduct Focus Groups Testing for Learning Outcomes
Book: *Train the Trainer, Volume 5: Applying Technology to Learning,* ASTD, Editor: Cat Russo	In this volume, you'll see how you can effectively use today's technology to better accomplish workplace learning. You'll gain an understanding of how eLearning, web-based training and intranets can facilitate different aspects of workplace learning in your organization. TOC: Effective Distance Learning, Learning Technologies, Intranets, Needs Assessment for eLearning, Evaluating Off-the-Shelf CBT Software, Implementing WBT, Training Telecommuters, EPSS, Job-Oriented Computer Software Training, Delivering Quick-Response IBT/CBT Training, Evaluating eLearning

Resource	Overview
Curriculum: *Train-the-Trainer Course material*, Corporate Training Manuals. com	Just like humankind, trainers take all shapes and sizes. There are professional trainers, people who do a bit of training as part of their job, and people who get tossed into the classroom with little preparation or warning. This train-the-trainer workshop will give all types of trainers tools to help them create and deliver exciting, engaging, compelling workshops that will keep their trainees coming back for more. Module One: Getting Started Module Two: Understanding Training and Facilitation Module Three: Gathering Materials Module Four: Creating a Lesson Plan Module Five: Choosing Activities Module Six: Preparing for the Workshop Module Seven: Getting off on the Right Foot Module Eight: Delivery Tips and Tricks Module Nine: Keeping it Interactive Module Ten: Dealing with Difficult Participants Module Eleven: Tackling Tough Topics Module Twelve: Wrapping Up

RELEVANT ASSOCIATIONS

There are trade associations for every industry; the training industry is no exception. Trade associations serve a specific purpose, which is to advance the industry or focus area they support. A few of the ways in which they accomplish this purpose is through research, member networking, and professional development.

The Center of Training Excellence (CTE) would greatly benefit from taking advantage of the membership privileges offered by the associations in the list below. There are also free resources available in the area of education and learning. A few of these resources are also included in the list below.

Finally, the CTE should consider partnering with the local University of Memphis. A partnership between these two organizations would be mutually beneficial as they both share a similar goal: to train and formally educate adults to train other adults. In particular, the CTE will benefit from the University's expertise in the area of adult education. OWS would be delighted to introduce the staff of NFSMI to our colleagues at the University of Memphis.

ASSOCIATIONS

American Society for Training and Development (ASTD)	Mission: To be a world-wide leader in workplace learning and performance. Membership Benefits: access to industry news and trends, professional development opportunities, opportunities to network with peers and other workplace learning professionals, access to industry data and research tools
American Society for Quality	Vision: By making quality a global priority, an organization imperative, and a personal ethic, the American Society for Quality becomes the community for everyone who seeks quality concepts, technology, and tools to improve themselves and their world. This organization assists in administering the BNQA under contract to NIST. Membership Benefits: Quality Progress magazine—print and online; one Forum or Division membership; one Section membership; ASQ Weekly e-newsletter; e-Salary Survey access; ASQ quality topic articles; ASQ Library access and support; ASQ Quality News Today—daily newsfeed; Web-based ASQ information; leisure and affinity benefits; ability to upgrade to senior or fellow; member rates on books, standards, training, certifications, journals, Forums, Divisions, and Sections

The American Distance Education Consortium	The driving vision behind The American Distance Education Consortium (ADEC)is the extension of educational content and opportunity beyond the traditional boundaries of the university walls, to serving not only on-campus students but lifelong learners, broader domestic and international communities, under-served populations, and even K-12 schools and the corporate/business community. Through ADEC, members engage in a teaching and learning model that epitomizes a university without walls that is open, accessible, and flexible. The model seeks to provide instructional delivery and/or access anywhere, anytime, and to virtually anyone who seeks it. Primary emphasis is placed on educational and informational programs and services that fall within the traditional areas of competitive advantage for land-grant institutions. Specifically, this includes programs related to food and agriculture; nutrition and health; environment and natural resources; community and economic development; and children, youth, and families.
United States Distance Learning Association	Mission – supporting the development and application of distance learning; focuses on all legislation impacting the Distance learning community and its varied constituencies. The learning communities that USDLA addresses are: pre-K-12, higher education, continuing education, corporate training, military and government training, home schooling, and telemedicine. In addition, USDLA is also focused on national and international technology-based Distance Learning. Individual Membership Benefits: Individual membership certificate; monthly e-delivery of USDLA Journal; e-delivery of USDLA news alerts; quarterly e-delivery of USDLA Newsletter; discounts for all USDLA-sponsored events including Conferences, National Policy Forums, and Distance Learning Meetings; benefits of national legislative representation from USDLA; member discounts for USDLA products and services including offerings from USDLA Premium Sponsors Non-Profit Membership Benefits: Three (3) individual memberships - one primary and two auxiliaries; individual membership certificates; non-profit membership plaque (available upon request); organization name, city and state on the USDLA website For-Profit page; organization listing on USDLA brochure; access to one-time use of USDLA electronic mail list for USDLA approved application; monthly e-delivery of USDLA Journal; e-delivery of USDLA news alerts; quarterly e-delivery of USDLA Newsletter; discounts for all USDLA-sponsored events including Conferences, National Policy Forums, and Distance Learning Meetings; benefits of national legislative representation from USDLA; member discounts for USDLA products and services including offerings from USDLA Premium Sponsors
Association for Educational Communications and Technology	The Association for Educational Communications and Technology (AECT) is a professional association of thousands of educators and others whose activities are directed toward improving instruction through technology. The Association has become a major organization for those actively involved in the designing of instruction and a systematic approach to learning. It provides an international forum for the exchange and dissemination of ideas for its members and for larger audiences; it is the national and international spokesperson for the improvement of instruction; and, it is the most recognized association of information concerning a wide range of instructional and educational technology.

The eLearning Guild	As a member-driven organization, the Guild produces conferences, online events, e-books, research reports, and Learning Solutions Magazine—all devoted to the idea that the people who know the most about making eLearning successful are the people who produce eLearning every day in corporate, government, and academic settings. Our goal is to create a place where eLearning professionals can share their knowledge, expertise, and ideas to build a better industry—and better learning experiences—for everyone.
Association for the Advancement of Computing in Education	The Association for the Advancement of Computing in Education (AACE) is an international, non-profit educational organization. The Association's purpose is to advance the knowledge, theory, and quality of teaching and learning at all levels with information technology. This purpose is accomplished through the encouragement of scholarly inquiry related to technology in education and the dissemination of research results and their applications through AACE sponsored publications, conferences, and other opportunities for professional growth. AACE members have the opportunity to participate in topical and regional divisions/societies/chapters, high quality peer-reviewed publications, and conferences. Join with fellow professionals from around the world to share knowledge and ideas on research, development, and applications in information technology and education. AACE's membership includes researchers, developers, and practitioners in schools, colleges, and universities; administrators, policy decision-makers, professional trainers, adult educators, and other specialists in education, industry, and government with an interest in advancing knowledge and learning with information technology in education.

ORGANIZATIONS

University of Memphis	The University of Memphis has an Ed.D. program in Adult Education, and, given the sterling reputation of the program, quality of the curriculum, and the U of M's close proximity to NFSMI, it would benefit the CTE to partner with the University of Memphis. Program Overview: The concentration in Adult Education is designed for individuals seeking doctoral-level preparation for leadership roles in corporate, community, and postsecondary education settings.

OTHER RESOURCES

The Distance Education Clearinghouse	The Distance Education Clearinghouse is a comprehensive and widely-recognized website bringing together distance education information from Wisconsin, national, and international sources. New information and resources are being added to the Distance Education Clearinghouse on a continual basis. Our mission is to produce a quality, highly-maintained and frequently-updated website that provides a wide range of information about distance education and related resources.
The Wellspring	This page contains links to organizations, schools, and other general entities involved in distance learning and/or web-based education.
The Masie Center	Available resources in the area of eLearning and education.

[Report ends here.]