

An Assessment of the Curriculum Design Process of
the Total, Quality, and Development Section of the
Texas Department of Transportation

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Chapter 1

Introduction and Statement of Research Purpose

Introduction¹

"Training is the field of activity that focuses on identifying, assuring, and helping develop, through planned learning, the key competencies that enable individuals to perform current or future jobs," (Rothwell 1997, pg. 26). The Texas Department of Transportation's (TxDOT) main objective is to be "a progressive transportation organization recognized and respected around the world for providing safe and reliable transportation systems throughout the state of Texas."² In an attempt to live up to this comprehensive standard, TxDOT has spent the past five years developing a new strategic plan that increases the level of customer service offered to the citizens of Texas. The new TxDOT philosophy states;

Through a diverse and well-trained workforce, we will be open, ethical, responsive, accountable and dedicated to the external and internal customers we serve. Our goal is to provide quality customer service. We value your opinion, and encourage your feedback regarding our services. Our on going objective is to maximize the quality and improve the delivery of products and services provided by the

¹ Historical information about the Total Quality Development Section found in this section was taken from the TxDOT Home Page and structured interviews with TxDOT Trainers (Trainers range in experience from 5 to 15 years).

² This quote was taken directly from the TxDOT Intranet home page.

department. We aim for continuous improvement of the way we do business.³

In the 1940's, TxDOT business practices were described as regimented, closed, strict, conservative, and private⁴. Between the late 1940's and the early 1980's, the majority of the leadership and management of the agency consisted of a workforce with extensive military experience. During this time, much of the agencies workforce were second and third generation TxDOT employees with a military background. In 1994, after receiving an abundance of criticism from the state legislature and other community and civic organizations, the agency began a shift in management philosophy toward a more progressive, open, and diversified philosophy.

After years of discussion and research, the agency decided to focus considerable funds and energy on training, quality and development. The objective of this initiative was to develop, promote, and encourage better customer service internally and externally⁵. This new objective was built on the foundation that a well-organized and well-implemented training program would produce quality workers, and better business practices. This in return should

³ This quote was taken directly from the TxDOT Intranet home page.

⁴ This statement was based on discussions of course participants in TxDOT management courses, and the opinions of interviewed Trainers.

⁵ This objective was noted from experienced Trainers during structured interviews.

develop better employees; thus creating an agency that provided better customer service.

In the early 1980's, TxDOT employees began attending training at the Governor's Center for Management and Development. The Governor's Center was (in the early 1980's) the only training organization designed for and by state agencies. The training was current, well facilitated, and the participants were from a variety of state agencies. This diversity provoked serious conversation about policies and management styles throughout the agencies. As a result, TxDOT managers returned to the department with "new ideas" about how the agency should be managed. Top management was often uncomfortable with these "new ideas". In fact, many top-level directors decided that the agency needed to develop internal training that incorporated their TxDOT philosophy. To achieve this objective, in 1986, the training section of the agency began to develop the following courses⁶:

- Managing People I - A course developed for first line supervisors.
- Managing People II - A course developed for second line supervisors.

⁶ The historical overview of the TQD section during the 1980's was taken from detail accounts given during structured interviews. However, the information regarding the courses developed in 1986 were taken from historical documents filed in the TxDOT storage room.

These courses were designed for internal employees, but the curriculum mirrored courses, which were taught by the Governor's Center. This "TxDOT unique" training proved to be very successful. Course curriculum, however, never changed, and the information became out-dated. Employees began to complain that the courses were unnecessary. The need for an internal training and development section was questioned. To justify internal training, the Training, Quality and Development section (TQD) was forced to develop modern, useful, and well-facilitated courses. These courses were subject to yearly update. As a result, the following courses were developed⁷:

- Management Skills for Successful (MSS) - a course designed for top level managers and supervisors.
- Leadership Skills for Success (LSS) - a course for top-level managers that have taken the Management Skills for Success course.

These courses are continually updated, and each was assigned a program administrator to coordinate the training classes. This new initiative revitalized the reputation of the TQD section, and returned the section to a level of high admiration and respect. Yet, as TxDOT began to shift the focus to improved employee performance, the TQD section

⁷ These course descriptions were taken from historical records on the TQD storage room.

was responsible for developing new courses that met the new needs of the diversified workforce. To do so, TQD needed to identify a process for creating courses that promoted enhanced performance among course participants. Currently, TxDOT is still in search of a model curriculum development design process that can be compared to the current process in order to identify improved methods for curriculum design..

Trainers who currently work for the TQD section best know the increasing need to identify a model process. As a trainer for the Texas Department of Transportation, I am responsible for developing, delivering, and evaluating training courses offered by the agency. In this role, one of my primary task is to successfully evaluate the effectiveness of our management courses. The standard by which these courses are evaluated are, 1) Responses to standardized course evaluations, 2) Additional written responses on course evaluations, 3) Feedback from area training coordinators, and 4) Performance improvement as judged by top-level management.

Donald Kirkpatrick, a well-respected expert in training evaluation suggested in 1959 that there are four levels of evaluation. Each level provides a specific

methodology to determine if a course is effective. Refer to Table 1.1 below⁸.

Table 1.1
Assessment of Management Participation in Level 3 Training Evaluation

Level	Titled	Description	Methodology
Level 1	Reaction	How did the participants react to (like) the training?	Post-training "smile" forms.
Level 2	Learning	To the extent to which participants change attitudes, improve knowledge, or increase skills as a result of the program.	Pre-test and Pro-test, or instructor observation.
Level 3	Behavior	The extent to which participants change attitudes, improve knowledge, or increase skills as a result of the program.	Observation of trainees demonstrating knowledge and skills on the job.
Level 4	Results	What is the return on investment for the organization that occurs because participants attended the program?	Evaluation of increased production, reduced turnover, few complaints, etc.

Phillips, Vivian H. - Applied Research Project - 1996

Based on Kirkpatrick's model, TxDOT utilizes a level four evaluation process. Although the agency utilizes proven methods for course evaluation, there is no formal process for new course development. With a new emphasis on enhanced performance, it is counter-productive for TxDOT to, 1) develop new courses without a proven process, and 2)

⁸ The table format was taken from Phillips, Vivian H. *An Assessment of Management Participation in Level 3 Training Evaluation at the Texas Department of Insurance*. 1996.

evaluate the courses once they have been delivered for a full training year. Although each course has a pilot period to catch corrections or areas that need improvements, a formal process of course development with an emphasis on enhanced performance is vital to the progression of TQD.

Understanding Curriculum Development

The introduction of this research paper used "course development" as a term to describe the process for creating new classes. Webster's Third New International Dictionary defines a course as, "an educational unit consisting of a series of instruction periods dealing with a particular subject (pg. 527)." The definition of curriculum is, "the whole body of courses offered by an educational institution or one of its branches (pg. 552)." Within this research paper, the reference to curriculum development is the logical process for the development of a new course.

When developing new courses within the realms of state government, there are some barriers that prohibit state agencies from utilizing curriculum development models fully. The next section will identify and review some barriers that currently exist.

Barriers for State Government

In efforts to create new courses, and a quality-training department, private sector organizations have developed ideal processes that include the essential steps that should be followed in the creation of a new course. Unfortunately, there are some barriers within governmental agencies that make this process difficult. Private companies can use profit as an indicator of success. State agencies maintain budgets that are linked to political process, not profit. State agency budgets fluctuate for out of control reasons as political leaders change (usually every four years). Private companies have the capability to alter budgets to meet the need of increased profit. To do so, private companies can also adjust strategies, salaries, and strategic plans. State agencies are not capable of adjusting these characteristics, and are often times "stuck" with the strategies, salary tables, and plans that have been determined by elected officials that remain distant from the day-today realities of agencies, and their operational needs. Executives dedicated to company growth lead private companies. State agencies are led by elected officials that are dedicated to public desires and perceptions. Such barriers prohibit state agencies from

developing strategies that have proven to be successful in private companies.

These barriers make it difficult for the TQD section at TxDOT to properly assess the impact of current training courses, and the influence current training classes have on enhanced performance. Without proper assessment of the process used to develop courses, it becomes even more difficult to determine better ways to develop new courses that increase employee performance, and supports employee retention. By identifying an ideal curriculum development process through current research and newly developed practices, the Texas Department of Transportation can create an outline of steps that should be followed for the creation of new courses. This ideal type process can also be used as a guide for assessing current course development. The "ideal" also has the potential to impact improved employee performance.

Research Purpose

Recent literature (Robinson & Robinson 1998; Rothwell & Kazanas 1998; Kirkpatrick 1994) suggests that a well-organized and developed curriculum design process is the foundation of a well-implemented training program. As TxDOT continues to promote enhanced performance through training, identifying a successful process for the creation

of new courses is essential. The purpose of this research paper is to identify the elements of a practical ideal type curriculum development process. Using the "ideal" curriculum development process as a guide, the TxDOT curriculum format is assessed.

Organization of Research

The research setting is developed in Chapter II. Both the structure of the TQM section, and the current process for curriculum design at TxDOT are explained.

Chapter III identifies the practical ideal type curriculum design process based on the literature. This chapter identifies frequently used steps to the process, and identifies proven effective. This chapter also organizes the ideal concepts into an orderly step-by-step process.

Chapter IV reviews the research methodology used in the research. The chapter offers an explanation of how data was collected.

Chapter V provides the assessment of the current process for curriculum design. This chapter chronicles the steps of the ideal type process, and explains how TxDOT meets, exceeds, or falls below the ideal standards for curriculum design development.

Chapter VI discusses the research findings, and summarizes conclusions drawn from the ideal type comparison to current practices. This chapter summarizes conclusions from the analysis, and offers suggestions for improvement. This chapter also describes the limitations of the research.

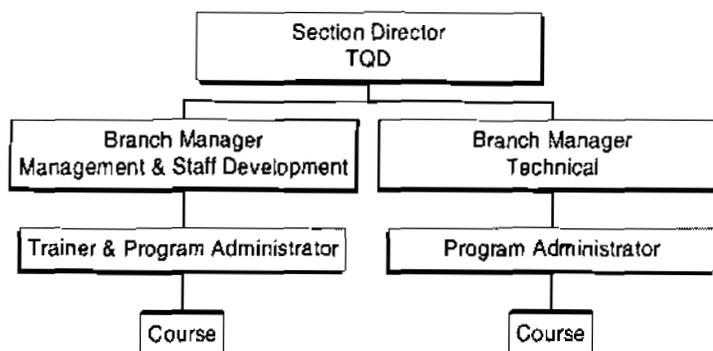
Chapter 2 Setting Chapter

Introduction

The purpose of this chapter is to describe the structure of the Total Quality Development (TQD) section, the current process for workflow, and the process for new course development. Under the supervision of a Section Director, the TQD Section is divided into two branches, 1) The Management and Staff Development Branch (MSD), and 2) The Technical Branch⁹. Figure 2.1 displays the current workflow for the section. The following sections review the primary roles for each section branch¹⁰.

Figure 2.1

Total, Quality and Development Work Flow



⁹ This information is based on the current organizational structure of the TQD section.

¹⁰ Figure 2.1 is an original chart developed by the author based on the current set-up of the section (7/23/01).

Branch Roles and Responsibilities¹¹

The MSD branch is responsible for all non-technical training. This training includes:

- Policy Courses
- Management Courses
- Personal Development Courses

The Technical Branch is responsible for coordinating training courses in the following areas (these courses are taught by contracted companies. Technical Trainers are responsible for coordinating and scheduling the classes.):

- Construction
- Design
- Safety

The focus of this paper is the MSD branch. The MSD Trainers work under the supervision of the Branch Manager. The MSD Trainers are responsible for instructing all of the courses taught within the branch. In addition to this responsibility, each Trainer must also do the following:

- Participate on a revision team each summer to evaluate the success of a particular course, and make the necessary updates to the course curriculum.
- Participate as a team member on a new course design project.

In addition to these roles, experienced trainers are promoted to a Program Administrator (PA)¹². A Program Administrator is responsible for the scheduling, supplies, and coordination of a particular course. At the end of the training year (July), the Program Administrator is responsible for reviewing the course curriculum, and make any needed updates or corrections.

New Course Design Process¹³

Currently, a team of trainers come together for the development of new courses. Once the Branch Manager and the Section Director have determined a need, the new course development team researches, and develops a course. After the course has been developed, the Section Director takes the new course to the Standard Committee of Training (SCOT) committee. The committee decides if the course is needed,

¹¹ The Branch Roles and Responsibilities Section is based on the current organizational structure of the TQD section as defined by the TxDOT Human Resources manual.

¹² This information is based on the job requirements as stated in the Classification section of the TxDOT Hiring Policy.

and determines if the proposed curriculum is acceptable for instruction. When the SCOT committee approves a course, the Branch Manager assigns the course to a Program Administrator. Table 2.1 describes the responsibilities of a Program Administrator's with new course.

**Table 2.1
New Course Responsibilities¹⁴**

Responsibility	Explanation of Duty
Pilot the course to evaluate the course design.	This process allows the Program Administrator (PA) to test the course before offering the course statewide.
Revise the course content if necessary.	If the pilot class offers suggestions for improvements, revisions to the final course manual are made.
Develop an Instructor Manual.	Manual provides special notes to instructors on presentation pointers, and key facts.
Develop a Continuity Book.	Book provides information about the course, how it was developed, and revisions. It is a history of the course designed to assist new PA's.
Create cover graphics for the course manual.	Create a eye-catching cover.
Order necessary videos and class props.	The PA is responsible for ordering supplies, and maintaining all special equipment need for the course.
Submit manuals for duplication.	Copy the books.
Distribute instructor manuals to Trainers.	Trainers should review the manual before the meeting.

¹³ The New Course Design Process is based on the process currently used by TQD trainers. This unofficial process is the generally accepted process, however, it is not found in the TxDOT policy.

¹⁴ Table 2.1 is an overview of the informal process currently used by TQD trainers, and is not based on any official policy.

Schedule a meeting with Trainers to review course design, and Instructor notes.	A brief orientation to instructors about the class, and the objectives.
Create a Check List of items needed to instruct the course.	The Checklist assists the PA in packing efficiently for the course.
Review course evaluation from participants at the end of each class, and submit a closeout report to the Branch Manager.	At the end of each class, participants are asked to fill out an evaluation. The PA reviews the responses and inputs additional comments in the closeout report.
Review evaluation results at the end of the year to determine needed changes.	The yearly evaluation responses should offer excellent feedback for needed changes and updates.
Revise the course manual at the end of the training year.	These updates should provide focus and justification for revisions.
Begin the process again beginning at developing new graphics for the manual cover.	Every year, the cover should change, and the process should begin again.

In the next chapter, the practical ideal type curriculum process is developed. Subsequently (in Chapter 4) the effectiveness of the currently used curriculum design process is assessed (evaluated from the first step of the current process, to the evaluation of the course at the end of the first training year).

Chapter 3

Ideal Curriculum Development Process

Introduction

This research paper uses a practical ideal type conceptual framework. Through the research, this chapter summarizes the essential categories in an ideal curriculum format. It is important to understand that this framework is designed for an ideal type curriculum design format for agency courses. This chapter identifies the research in the order in which the ideal categories were developed, and systematically reviews the step-by-step process for developing courses within a training program. The ideal categories include¹⁵:

- Setting a Mission Statement & a Goal
- Determining the Needs for Classes
- Establishing Performance Objectives for Classes
- Developing Course Content
- Delivering Instruction Effectively
- Coordinating the Program
- Evaluating the Program

This ideal process will be compared to the process currently used by TxDOT in Chapter 6.

¹⁵ This list is an overview of the ideal categories discussed in this chapter. References for each section are identified throughout the text.

Setting a Mission Statement and a Goal¹⁶

Within a curriculum development process, individual courses should be created following a consistent formatted process. Before a program administrator can create a new course, **the mission of the section and the ultimate goal must be established.** The mission and the goal can be determined for the entire section, and all courses developed can use this information as a guide. However, because the mission and the goal of the section are the most critical step in the process for creating new courses, it is the first step in the ideal type process.

Internal training programs should always be a direct reflection of the overall mission and goal of the organization. Some make the mistake in believing that there is no difference between goals, missions, and performance objectives. George Morrissey (1976, pg.96) notes that there is a difference between setting goals and a mission, and developing objectives. Goals and missions are continuing and nonspecific in nature. A mission and a goal establish what kinds of work will be performed. Objectives add substance, measurability and direction. For example, if the mission of an organization is to one day have an entire company with employees that could all

sing well, and the goal of the organization was to train all employees to sing better; then all of the training classes in this organization would promote singing as a part of the curriculum. The performance objectives would promote specific singing activities, but each training course should promote better singers, thereby supporting the ultimate mission and goal of the company.

The process for developing goals and objectives is clear, but one must keep in mind that goals cannot be established without a clear understanding of the process currently performed by the people in the job (Robinson and Robinson, pg. 20). This simply means that before goals and objectives are established, management must analyze the current practices of the employees within an organization. If in the same example, all employees within the company had no formal singing background, it would be counterproductive to set such an unreasonable mission or goal. When management understands the current practices of an organization, a mission and a goal can be established. Once a goal and a mission have been established, it is necessary to 1) determine the specific needs of the employees before creating course performance objectives, and 2) **determine key result areas**. Determining key result areas link critical performance standards to the course

¹⁶ Sources used in this section included McLagan & Nel, 1995; Morrissey, 1976; Robinson & Robinson,

objectives. In the same example, the key indicators for the singing class would be an employee learning specific musical notes in order to finally learn to sing an entire piece of music. Learning to sing the music would link to the performance objectives, and ultimately to the mission and goals.

Determining the Need for Classes

Determining the needs of an organization requires management to evaluate the specific training needs of employees based on the overall mission and goal of the organization. Determining the needs of employees takes into account the current skill level of employees, and compares that to the desired results expected.

In order to **access the current design process**, one must look at two key factors - 1) the internal drivers that are used to measure the operation, and the external drivers that are used to measure the customer use to measure the organization (Kirkpatrick, 1994, preface x). The internal review identifies the currently used indicators that measure the productivity and effectiveness of the organization. The external review identifies customer expectations. These key factors help to streamline the focus of the training.

As an organization begins to focus on what is really needed in a training course, it becomes increasingly important to align the needs of the organization with the need to develop the course. There are **three levels of performance alignment**¹⁷ that assist in making the connection between the overall needs of an organization, and the specific needs of a particular course. These levels include:

- Organizational Level
- Process Level
- Job/Performer Level

The organizational level depicts the organization in its attempt to take in various employee inputs, and develop or produce a valuable output to the identified customers. Put simply, the organizational level takes into consideration the input and opinions from employees, and utilizes this input to create the course. For example, the organizational level asks the employees what they want, like or need in a training class. Information from this level enables management to better understand the opinions of the employees, and assimilate these opinions into the formatting of the course.

¹⁷ This information came directly from Robinson, Dana G.; Robinson, James C. *Moving from Training to Performance*. 1998

The process level determines the series of steps that must be developed and adhered to in order to develop key outcomes. If the goal of the course is to teach the participants how to sing, then the process level takes into consideration what systematic order of instruction would work to accomplish the ultimate goal.

The Job/Performer level organizes the outputs, and determines the methods necessary to implement the necessary functions. This level considers the outcome of the first two levels, and completes the finishing touches to what ultimately becomes the official course outline.

This three level system begins with a goal and a mission. This method, 1) researches the wants and opinions of employees; 2) creates a logical order for material that should be included into the course; and 3) combines the information into an outline for a course. Once the outline is developed, performance objectives are the next step in the ideal process.

This type of process helps in **determining and identifying gaps** between the mission and the opinions of the employees, and the ultimate results needed from training. Identifying gaps occurs when a trainer can access the actual performance of course participants to the desired performance based on set objectives. Such gaps in

performance assist trainers in emphasizing performance objectives that require more attention.

This three level performance alignment process is very important to determining the needs of a particular course, however, the final area that should be analyzed when determining the need for a training course is identifying unproductive training practices in the current system (Shandler, 1996, pg. 80).

This process helps to **determine current practices that have proven to be ineffective** to the objectives of the training department. It is a waste of time to continue to create new courses with objectives and goals that are out-dated, unnecessary, and ineffective. One of the biggest criticisms¹⁸ to training programs today is their inability to address the real needs of an organization, and to produce quality outcomes. Today's training programs must be more focussed on the bigger picture¹⁹. Course developers must align the content of the course to the needs of the organization. Also, course developers must proactively address the broader business re-engineering needs of the organization, focus on high performance strategies, and be identified as agent for change. These factors all fit into the larger step of understanding and determining the needs

¹⁸ This comment is based on general discussions within professionals in the field of Training as perceived by the author.

of an organization. With this foundation, performance objectives can be developed.

Establishing Performance Objectives for Classes²⁰

Setting performance objectives is probably one of the most critical steps in curriculum design. Without valid clear-cut objectives, the remaining steps are meaningless (Morrisey, 1976, pg. 96). Objectives should be specific, measurable, attainable, relevant, and time-based²¹. Objectives should be specific, and only address one area of evaluation. The objective must also be measurable, and a method of evaluation should be easily determined. The objective should be realistic and attainable, and relevant to the overall goal of the course. Finally, objectives have a defined time period in which the objective should be mastered, and such objectives are always in alignment with the mission and goals of the organization.

One of the most difficult task during this stage is actually learning how to write quality objectives. Objectives should always focus on key result areas (Morrisey, 1976, pg.97). When establishing performance objectives, it is also important to **focus of enhanced performance** (techniques necessary to promote an increased

¹⁹ Sources used in this section included Kirkpatrick, 1994; Robinson & Robinson, 1998; Rothwell, 1997; and Shandler, 1996.

²⁰ Sources used in this section included Shandler, 1996; Robinson & Robinson, 1998; Rothwell & Kazanas, 1998.

²¹ This information is from the Management Skills for Success Manuel used for instruction at the Texas Department of Transportation.

level of skill in a particular area). To successfully focus on performance, the training section must insure focus on enhance human performance in support of the organizations mission and goals. This requires the organization to align the needs of the employees, the performance needs of the organization as a whole, the learning needs, and the needs of the work environment. Although these steps are most likely determined during the *Determining Needs* phase, it is in the development of objectives stage that they are closely analyzed.

It is also important to remember that the performance objectives are the roadmaps for the participants during training courses. **These objectives should be presented to participants at the beginning of training classes** to offer some guidance as to what are the primary areas of instruction for a course. Therefore, these objectives should be brief, clear, and focus on the specific area being taught and evaluated. Well written performance objectives also help to streamline the priorities of course developer ultimately decide to include in course content.

Developing Course Content²²

Course content is the meat of any training program. In an ideal curriculum development process, the course content is the most recognizable sign of a quality training course. The content of course can only be developed when performance objectives have been created. The content of the course is the written extension of the objectives, needs of the employees, and the goals and mission of the organization.

The ultimate goal of a parent is to provide for a child. If the child becomes hungry, the goal of the parent would be to feed the child. During this process, the parent would determine what the child needed to eat in order to stay healthy, and ask the child for input into what the child would like to eat. Once the parent understands what the child has a desire to eat, and what the child needs, the parent begins to prepare a meal. This meal will ultimately satisfy the child's hunger, and aid in the child's healthy development. This scenario is similar to the ideal process. The ultimate mission of the parent was to provide for the child. The immediate goal was to eliminate the child's hunger. To accomplish this task, the parent assessed the child needed for nourishment, and

listened to the child's wants. The objective was to create a meal that would satisfy the hunger, and the need for nourishment. In this example, the content of the food cooked would be the natural outcome of the process. Course content is the natural outgrowth of performance objectives.

Donald Shandler (1996, pg. 79) emphasized the need **link performance initiatives to training goals**. Shandler's term "performance initiative" refers to the ability to begin or follow through with a plan that focussed on enhanced performance. Shandler's usage of initiatives is closely related to the term objective. Used here, Shandler's point of view adds substance to the idea that there must be a clear connection between performance objectives and the ultimate goal and purpose of a training class. It is essential that this linkage be seen clearly in the content of the course.

For **public sector organizations** such as TxDOT, the mission and goals of the Human Resource Department determine the focus of the courses developed within the TQD section. Although the Human Resources mission and goals directly reflect the mission of the agency, the needs, concerns, and dynamics of public sector organizations make developing course content more complex. Morrisey (1976,

²¹ Although all sources are not directly quoted, the sources used in this section include, Morrisey, 1976;

preface) emphasized this need to understand the unique circumstances within the public sector organization in attempts to develop quality results. Understanding this uniqueness in the creation of new courses will assist course developers in recognizing barriers and key issues that affect training. Because these barriers exist, it is important to review them every time a new course is developed²³.

The goals of any good performance based training program are to assist the participants in advancing up the levels of performance. Since each student comes with different performance skills, the goal is not to push each student leave at a peak performance level; rather, every student should leave a course performing at least on step above the level they entered the course at. To motivate performance, courses are structured to encourage participant involvement, and emphasize student participation. Participation helps re-emphasize performance objectives through action and practice. This helps create a **link between training and enhanced performance.**

Needs and objectives are prime factors for course developers to consider when determining subject content. The key question to developing course content is - What

Shandler, 1996; Townsend & Gebhardt, 1992; Kirkpatrick, 1994; Kushel 1994.

topics should be presented to meet the needs, and accomplish the objectives (Kirkpatrick, 1994, pg. 11)? The ultimate responsibility for improved performance students (Kushel, 1994, pg. 8). Nevertheless, the student's willingness to work toward the goal should be encouraged through well-developed course content.

Delivering Instruction Effectively²⁴

Once a course has been developed, it is important to determine methods of delivery that will enhance the course design. Delivery issues to consider include: 1) the best schedule to teach, and 2) the ideal participants (Kirkpatrick, 1994, pg. 13).

Determining what is **the best day and time** for the course assist in creating the perfect atmosphere for training. For example, beginning a class at 1:00 p.m. that has significant technical information is a bad idea. Right after lunch, people are tired, and become easily bored with lectures and technical speeches. On the other hand, an interactive class with games and team projects may work well at 1:00 p.m. while lively games a 7:00 a.m. may be ineffective. Courses are scheduled in ways that take into account course content and activity.

²³ Barriers for State agencies are reviewed in Chapter 1.

²⁴ Sources used in this section include Kirkpatrick, 1994; Rothwell & Kazanas. 1998.

Selecting the right participants ensures that the target audience is attending the course. An entry-level worker would not benefit from a top-level management course. As a course is developed, course content should be guided by an understanding of the ideal participants and their needs. When selecting participants for a program, four decisions need to be made ((Kirkpatrick, 1994, pg.11)):

1. Who can benefit from the training?
2. What programs are required by law or by government edict?
3. Should the training be voluntary or compulsory?
4. Should the participants be segregated by level in the organization, or should two or more levels be included in the same class?

This information is important in the discussion of delivery because it is vital to reach the people who most need or want the information being presented.

Selecting the instructor is critical to the success of the program. The subject matter content should be tailored to fit instructor's skill level (Kirkpatrick, 1994, pg. 13). The skill level needed to successfully present the information should determine instructors.

There are a variety of **instructional methods** that can be used for delivery of information. Table 3.1 reviews the current types of presentation methods commonly used in the public and private sector, and how often they are used in today's training courses.

Table 3.1

Current Trends on the Usage of Delivery Options for Trainers

Type of Method Used	Percentage of Time used
Video tapes	92%
Lectures	90%
One-on-One Instruction	82%
Games/Simulations	63%
Case Studies	57%
Audiotapes	50%
Slides	49%
Role-plays	49%
Self-Assessment	49%
Computer-based training	48%

Source - Kirkpatrick, 1994

Each of the methods listed in Table 3.1 are proven and acceptable methods used in modern training. When evaluating delivery methods, course developers should choose a variety of methods that keep the course interesting, motivating, and productive. Once the delivery methods are chosen, the course should be complete. The next step in the ideal process is coordinating the course. When coordinating a particular course for a specified period of time, the course becomes a program. A program is

defined as the constant offering of a particular course over a full fiscal period.

Coordinating the Program

Coordinating the program involves the **logistics** of where a course is taught, the **scheduling of instructors**, the **distribution of special information** needed to be given to the participant in order to successfully complete the course. Examples of Program Administrators responsibilities include: 1) Providing copies of maps to nearby restaurants for participants during the lunch time, 2) Providing reference material that supports the objectives of the class, and 3) Informing the participants of restroom and break room locations.

Two problematic extremes can occur during the coordination of programs; 1) Insufficient information is given to the participant, and 2) too much information is given to the participant (Kirkpatrick, 1994 pg. 15). For example of this would be if the instructor failed to let participants know the schedule, a direction to break rooms or restrooms, and never allow time for breaks. Too much information would occur if the instructor walked each student to the restroom, or called break every ten minutes to keep participants from becoming tired.

Program Coordination ensures adequate information is given to participants to encourage proper implementation of the course objectives. When new courses are developed, it is important that coordination expectations be made clear.

Evaluation

Evaluation is the last stage that is critical to a well-developed curriculum design format. As stated in the Introduction, there are four levels of training evaluation:

Level 1. Reaction - As the world implies, evaluation at this level measures how participants react to the program.

Level 2. Learning - Here evaluation measures the extent to which change in behavior has occurred because the participants attended the training program.

Level 3. - Behavior - Here, evaluation measures the extent to which change in behavior has occurred because the participants attended the training program.

Level 4. Results - Here, evaluation measures the final results that occurred because the participants attended the program. Level four evaluation is the most effective.

Evaluations are done for three reasons (Kirkpatrick, 1994, pg. 20):

1. To justify the existence of the training department by showing how it contributes to the organization's objectives and goals.
2. To decide whether to continue or discontinue training programs.
3. To gain information on how to improve future training programs.

Ideally, evaluations should be done for all three reasons. Even when there is no immediate need to justify training, or discontinue training, courses should be evaluated to insure that each course is still needed, and training is effective, and not counter productive.

The evaluation process is determined at the time the course is developed. **Evaluation indicators** should be incorporated into the course content, and continuously analyzed throughout the duration of the course. Methods of evaluation include survey, oral, interviews, games, or open feedback request.

Evaluation results should provide the key input that allows administrators to judge the success of the course to meet the performance objectives. If performance objectives

have been successfully met, there is a clear linkage to the goals and mission of the organization.

Summary of Conceptual Framework

This research paper uses a practical ideal type conceptual framework. Recent literature (Robinson & Robinson 1998; Rothwell & Kazanas 1998, Kirkpatrick 1994) suggests that a well-developed curriculum design format is the foundation of a well-implemented training program. Table 3.2 summarizes the essential categories in an ideal curriculum process, and connects them to the relevant literature. This framework is designed as an ideal curriculum format for agency courses within the TQD training program.

Setting a Mission Statement and a Goal is the first step in the curriculum design process. Clearly defined organizational missions and goals provide a clear direction for individual courses. The mission and the goal can be determined for the entire section, and all courses developed can use this information as a guide. Once a mission and a goal have been established, it is necessary to **determine key areas of result**²⁵. This refers to the key areas that must produce clearly identifiable results that support the overall objectives of the organization.

²⁵ Statement taken from Morrissey, 1976.

Once the goals and objectives have been set, and the organizational structure has been analyzed, it is then appropriate to follow a series of steps and stages that will ensure a well designed course. These steps include 1) **determining the needs** of classes by accessing the currently used design process, utilizing the three levels of performance alignment, building models of effectiveness within each course to better identify performance gaps, and an evaluation of current training practices that are unproductive; 2) **establishing performance objectives for classes** that focuses on performance initiatives, and presents objectives at the beginning of each course; 3) **developing course content** through a linkage of course objectives and the agencies mission understanding the special concerns of public sector training programs; 4) **delivering the information effectively** through trained and qualified instructors. This step also includes **identifying the best time, and the most appropriate course schedule, identifying course participants and instructors,** in addition to **course materials** and possible **methods of delivery**. These steps are defined differently by different researchers, however, these steps are all included in the discussion of the key elements to effective curriculum design.

Once these steps have been followed, it becomes increasingly important to maintain the course to insure progression and effectiveness²⁶. To accomplish this, Program Administrators must plan the **logistics** of each course, **schedule instructors**, and insure that **the adequate information is available for distribution** to each participant in the course. These task are all apart of **coordinating the course**.

The final step in an ideal curriculum design is evaluation of the program²⁷. The evaluation stage identifies indicators that should be incorporated into course content to easily identify areas that need improvement. The results from these indicators, and formal end-of-course evaluations are used to make future improvements to the curriculum. Table 3.2 summarizes the ideal process discussed above. This table also links each ideal element to the literature.

Chapter 4 will review the methodology used to compare this ideal process to the one currently used by the TQD section at TxDOT.

²⁶ General discussion taken from Rothwell & Kanazas, 1998.

²⁷ General discussion taken from Kirkpatrick 1994, and Shandler 1996

Table 3.2: Conceptual Framework for a Practical Ideal Type Curriculum Design Process

Category and Ideal Type Concepts	Source
<p><u>Setting a Mission Statement & a Goal</u></p> <ul style="list-style-type: none"> • Defining Roles and Missions • Determining Key Result Areas 	<p>McLagan & Nel, 1995 Morrisey, 1976 Robinson & Robinson, 1998</p>
<p><u>Determining the Needs for Classes</u></p> <ul style="list-style-type: none"> • Access to Current Design Process • The Three Levels of Alignment • Building Models and Defining Gaps • Evaluate Current Unproductive Training Practices 	<p>Kirkpatrick, 1994 Robinson & Robinson, 1998 Rothwell, 1997 Shandler, 1996</p>
<p><u>Establishing Performance Objectives for Classes</u></p> <ul style="list-style-type: none"> • A Focus on Performance • Moving Toward a Performance-Focussed Organization • Performance Objectives at the beginning of the class. 	<p>Shandler, 1996 Robinson & Robinson, 1998 Rothwell & Kazanas, 1998</p>
<p><u>Developing Course Content</u></p> <ul style="list-style-type: none"> • Linking Training to Performance • Identifying Special Public Sector Concerns 	<p>Morrisey, 1976 Shandler, 1996 Townsend & Gebhardt, 1992 Kirkpatrick, 1994 Kushel, 1994</p>
<p><u>Delivering Instruction Effectively</u></p> <ul style="list-style-type: none"> • Determining the Best Time and the Most Appropriate Schedule • Selecting Participants • Selecting Instructors • Selecting and preparing Materials and Methods of Delivery 	<p>Kirkpatrick, 1994 Rothwell & Kazanas, 1998</p>
<p><u>Coordinating the Program</u></p> <ul style="list-style-type: none"> • Logistics • Schedule of Instruction • Distribution of Adequate Information 	<p>Kirkpatrick, 1994 Robinson & Robinson, 1998 Rothwell & Kazanas, 1998</p>
<p><u>Evaluating the Program</u></p> <ul style="list-style-type: none"> • Evaluation Indicators • Evaluation Results Used 	<p>Kirkpatrick, 1994 Shandler, 1996</p>

Chapter 4 Methodology

Introduction

The purpose of this chapter is to review the basic research design used for this case study, and outline the data collection strategy employed. This study was guided by the collection of data used to develop the practical ideal type process discussed in Chapter 3 (See Table 4.1 for the ways data and evidence collection techniques were linked to ideal elements of the process). Once developed, the ideal process was compared to the current process used by TxDOT. Gathering evidence to determine whether the TxDOT process was in compliance with the "ideal" process required many different sources of data and data collection techniques. Therefore, this study utilized the following techniques:

Case Study²⁸

A case study is an examination of a single individual, group, or society. Its chief purpose is description (Babbie, 1998, pg. 260), and it is especially appropriate for topics for which, "attitudes and behaviors can best be understood within their natural setting (Babbie, 1992, pg.286). This research paper is a case study on TxDOT's

²⁸ The information used in this section came directly from the authors noted throughout the text. However, the organization of this section was taken from the Applied Research paper of Vivian H. Phillips in 1996.

curriculum development process. Within the case study, separate methodologies are used. These methodologies included Document Analysis, Structured Interviews, and Participant Observation. The triangulation of these methods assisted in comparing the current process used by TxDOT to the ideal process.

Document Analysis

Document analysis research is appropriate for studying historical communications of an organization (Phillips, 1996, pg. 46). The consistency of document analysis (i.e. names, dates, and facts), provides strength in the research (Yin, 1994, pg.80)²⁹. Within each ideal type concept, document analysis is used to adequately understand the history, current status, and future objectives of the agency. This is accomplished by analyzing the agencies' website, the internal Intranet site, departmental procedures, and current management course manuals. These resources were the foundation of the empirical investigation. Also, complete access to the department's strategic plan and history helped to compare past practices, and sometimes provided a justification for the current practices. Document analysis offered the strongest technique or method of research due to its accurate

overview of the agency and its objectives. Document analysis was appropriate for use of in this study because it is often most useful when studying trends or comparing records (Babbie, 1992, pg.343).

Although Document analysis is a viable method in research, many people have been critical of the potential overreliance on documents in case study research (Yin, 1994, pg. 82). Robert Yin (1994, pg.82) suggest that, "This is probably because the casual investigator may mistake certain kinds of documents for those containing unmitigated truth (like proposals, programs, or projects)." It is important to recognize that some written documents were written for a particular audience for a particular purpose (Yin, 1994, pg.82). Within the realms of this research, the most important weakness of document analysis is its inability to take into account the human thought and feelings that contributed to past policies and curriculum processes. A scholar's failure to interact with those who developed past objectives and curriculum processes may result in biased analysis built purely on written record.

Interviews³⁰

To alleviate some of the weaknesses of document analysis, and to provide corroboratory evidence, interviews were

²⁹ Cited quote was taken from Vivian Phillips Applied Research Project (1996).

conducted. These interviews included three branch managers, and three TxDOT employees. Interviews were conducted to obtain a personal perspective on the development of the currently used curriculum development process. Each interviewee was informed well in advance, and each interviewee was aware of the topic, and the line of questioning before the interview. Interviews are one of the most important sources of case study research (Yin, 1994, pg.84). This case study used open-ended questions to help get respondents to give more information about their opinions, and the facts from their perspective.

Case study interviews are always subject to bias, poor recall, and poor or inaccurate articulation. In this case study, the weakness to the structured interviews was the biases and personal opinions that were given by respondents. The interview questions were based on the outstanding questions that were evident after researching the topic. These employees provided with me with a variety of personal perspectives, and a wealth of information about the historical events that made a tremendous impact on the current practices of the training section. Even though this information was useful, all of the interviews were

³⁰ The information used in this section was taken from Yin, Robert, Case Study Research, 1994 pg. 84-85.

used as verbal perspectives that were helped to interpret the current curriculum design process.

Participant Observation³¹

"Participant-observation is a special mode of observation in which you are not merely a passive observer. Instead, you may assume a variety of roles within a case study situation and may actually participate in the events being studied (Yin, 1994, pg. 87)." As a Training Specialist for TxDOT, the author of this study has five years training experience (two of these years were with TxDOT). As a specialist in the field of training, the author used participant observation as a method to interpret the current curriculum development process, and its impact on improved performance. Yin (1994, pg.88) suggests that participant observation can be used effectively in more everyday settings, such as an organization or other small groups. Based on this literature, participant observation was an appropriate method for this research question. However, Yin (1994, pg. 89) also suggest that participant observations can be biased, and while it can help be the right approach, it can also threaten the credibility of the entire research paper if used incorrectly. Participant observation strengthened

³¹ The information used in this section was taken from Yin, Robert, Case Study Research, 1994 pg. 87-88.

the validity of much of the research in this case study, however, it possibly contributed information that was more opinion based, and not fact based. Table 4.1 operationalizes the conceptual framework developed in this section.

Table 4.1: Operationalizing the Conceptual Framework

Category and Ideal Type Concepts	Research Methods	Evidence
<u>Setting a Mission Statement & a Goal</u> <ul style="list-style-type: none"> • Defining Roles and Missions • Determining Key Result Areas 	<ul style="list-style-type: none"> • Document Analysis • Interview 	<ul style="list-style-type: none"> • Analysis of the Agency Strategic Plan • Interview responses from experienced employees.
<u>Determining the Needs for Classes</u> <ul style="list-style-type: none"> • Access to Current Design Process • The Three Levels of Alignment • Building Models and Defining Gaps • Evaluate Current Unproductive Training Practices 	<ul style="list-style-type: none"> • Document Analysis • Interview 	<ul style="list-style-type: none"> • Analysis of the current management course curriculum through documents and interviews. • Analysis of the past course manuals to evaluate the focus on stated objectives.
<u>Establishing Performance Objectives for Classes</u> <ul style="list-style-type: none"> • A Focus on Performance • Moving Toward a Performance-Focussed Organization • Performance Objectives at the Beginning of the class 	<ul style="list-style-type: none"> • Document Analysis • Interview • Participant Observation 	<ul style="list-style-type: none"> • Analysis of department initiatives. • Analysis of current management course curriculum. • Review of the current course objectives, and their impact on enhanced performance. • Opinions about current course objectives. • Personal observation of the current process for curriculum design.
<u>Developing Course Content</u> <ul style="list-style-type: none"> • Linking Training to Performance • Identifying Special Public Sector Concerns 	<ul style="list-style-type: none"> • Document Analysis • Structured Interview • Personal Observation 	<ul style="list-style-type: none"> • Analysis of current management course curriculum. • Analysis of evaluations from management courses.
<u>Delivering Instruction Effectively</u> <ul style="list-style-type: none"> • Determining the Best Time and the Most Appropriate schedule • Selecting Participants • Selecting Instructors • Selecting and Preparing Materials and Methods of Delivery 	<ul style="list-style-type: none"> • Document Analysis • Structured Interview • Personal Observation 	<ul style="list-style-type: none"> • Analysis of current management course curriculum. • Personal analysis of current practices.
<u>Coordinating the Program</u> <ul style="list-style-type: none"> • Logistics • Schedule of Instruction • Distribution of Adequate Information 	<ul style="list-style-type: none"> • Document Analysis • Structured Interview • Personal Observation 	<ul style="list-style-type: none"> • Analysis of current departmental guidelines. • Analysis of current coordination of programs.
<u>Evaluating the Program</u> <ul style="list-style-type: none"> • Evaluation Indicators • Evaluation Results Used 	<ul style="list-style-type: none"> • Document Analysis • Structured Interview • Personal Observation 	<ul style="list-style-type: none"> • Evaluation of departmental guidelines. • Analysis of departmental evaluation results.

Chapter 5

Summary of Results

Introduction

This chapter presents the results of the case study. A document analysis was conducted to compare the ideal type curriculum development process established in Chapter 3, to the process currently used by the TQD section at TxDOT. A narrative is given for each ideal concept to further explain the strengths, weaknesses, of the currently used curriculum development process. Once a clear comparison is established, this chapter offers justifications for the current process, and suggestions for improvement. The ideal type categories are used to frame the outline of the analysis.

Setting a Mission Statement and a Goal

The ideal process stated that the first step to developing curriculum was establishing a mission statement and goals. The goal of the Total Quality Development section is to provide quality training that focuses on enhanced performance, and support the overall mission of the agency (which is to provide safe and reliable transportation of people and goods). Although the agency mission has no direct impact of the curriculum development

process, TQD is responsible for providing TxDOT employees with the tools necessary to work more productively in a fair, safe, and productive environment³². Although the goal of the section is not written in the Human Resources manual, this is the goal set by the Section Director.

The management courses currently offered by the TQD section adhere to the goals of the department, the goals of the agency, and the overall mission of the agency (See Table 5.1). For example, the "Interviewing and Hiring" course is designed to instruct managers and supervisors on how to correctly follow the agency hiring process. The department requires that all managers and supervisors take this course before they are permitted to hire employees. This course supports the agency in insuring all supervisors and managers are following hiring procedures set by the agency.

The TQD section objectives provide a foundation for the development of a quality curriculum. Hence, key result areas such as knowledge of hiring procedures are easily identified (See Table 5.1). In addition, essential indicators of effectiveness can be determined in the beginning stages of the curriculum development process.

³² This information was taken from personal observation.

Table 5.1: Setting a Mission Statement and a Goal Results: Summary of Results

Category and Ideal Type Concepts	Findings
<u>Setting a Mission Statement & a Goal</u>	
<ul style="list-style-type: none">• Are the Roles and Missions of the section clearly defined?	<u>Always</u> Sometimes Never
<ul style="list-style-type: none">• Can Key Result Areas be determined?	<u>Always</u> Sometimes Never

Determining the Needs for Classes³³

Unfortunately, interviews revealed that there is no formal process for determining the need for a new course (See Table 5.2). On the other hand, the three levels performance alignment (Organizational - employee input, Process - developing a series of steps, and Job/Performer - determines methods of implementation) stated in the ideal process is found within the TxDOT informal process (See Table 5.2).

Trainers note classroom comments from students that suggest new courses, and program administrators note the comments written on course evaluations. These two factors are taken into consideration when determining what new courses need to be developed. Any top-level manager can argue for a new course.

When a suggestion is made (by a Trainer, a Training coordinator, or a top-level manager), a proposal must be presented to the Standing Committee on Training, which determines if the course is necessary.

³³ This section is based on personal observation by the author.

After approval, the course is added to the needs survey sent to all district and divisions in May (this survey includes all technical contracted courses, and the courses offered through TQD. The document is sent through email, and only certain administrators have access to it. The printed results are over 200 pages). The district training coordinators complete the survey, thus informing the training section about the classes needed by each district or division. Student projections are made as are decisions about the best month to offer the course.

If the survey shows a need for a suggested new course, a training team is formed, and they create the course. Although this process works effectively, there is no real opportunity for input from every day employees. All of the decisions are made by upper-level employees responsible for reporting. The section has failed to identify this lack of involvement from everyday workers, and therefore fails to improve on the unproductive training practices within the current system. The section appears too uninterested in adding random employees in the conduction of the needs survey.

Once a decision has been made to develop a new course, the *qualified* training committee³⁴ does an excellent job in

³⁴ Qualified trainers are trainers who have completed the Out of Agency course requirements set in the performance evaluation of all new Training Specialist.

defining the gaps between the current level³⁵ of performance in comparison to the desired level of performance, but it should be questioned whether or not the course is really needed in the beginning (See Table 5.2). The repercussion of this results in courses with low attendance, high rates of no shows, and canceled classes. This suggest that the current design process has not been truly accessed, and performance gaps are cannot be clearly identified. Table 5.2 overviews the results of the comparison of the ideal concepts of determining the needs for classes.

Table 5.2: Determining the Needs for Classes Results: Summary of Results

Category and Ideal Type Concept	Results
<u>Determining the Needs for Classes</u>	
• Can the Current Design Process be accessed?	<u>Always</u> Sometimes Never
• Does the current process utilize the Three Levels of Alignment?	<u>Always</u> Sometimes Never
• Using the current process, can course Models be built to help Define Gaps?	Always Sometimes <u>Never</u>
• Does the agency evaluate unproductive training practices?	Always Sometimes <u>Never</u>

Establishing Performance Objectives for Classes

The TQD section course developers are skilled at the art of writing clear objectives that are performance based³⁶. All new trainers are required to attend out of agency training courses on curriculum development, and they

³⁵ Current levels of performance are determined by the SCOT committee based on the discussions that provoked the need for the new course.

³⁶ Skill level is based on a Trainers ability to write objectives that meet the criteria set by mandatory Out of Agency courses.

are all required to work on at least two revision teams in the course of a year. The results developed for management courses are clear, measurable, and the method of evaluation is also clear. The objectives established for management courses are also very brief, and to the point, and they summarize the key learning concepts of the course. To insure enhanced performance, objectives in the department are tested, and interventions are in place to reassure instructors that the objectives are clear and measurable. For example, the performance objectives written for the newest mandatory training class for Managers was so clearly written, that the development team (a team of trainers assigned to develop the curriculum for a course) was able to quickly produce curriculum that directly related to the objectives. During the pilot stage of the course (the stage where courses are tested in sample classes before the final manual is approved), respondents noted how clear the expectations were, and how easy the manual was to follow. These objectives clearly define the desired result with an emphasis on better performance. This focus on performance has helped the TQD section continuously move toward a more performance-focussed curriculum development process.

The final ideal concept is introducing the objectives to participants at the beginning of the course. TQD

Trainers do an excellent job at this step³⁷. All Trainers are required to state the objectives before each new course segment. If this is not done, Trainers will receive negative feedback on evaluations from the Section Manager. Table 5.3 overviews how the results of the comparison between the ideal process for establishing objectives for classes.

Table 5.3: Establishing Performance Objectives for Classes: Summary of Results

Category and Ideal Type Concepts	Results
Establishing Performance Objectives for Classes	Always Sometimes Never
• Is there a Focus on Performance?	Always Sometimes Never
• Are there Performance Improvement Interventions?	Always Sometimes Never
• Is the section Moving Toward a Performance-Focussed Organization?	Always Sometimes Never

Developing Course Content

As stated in the ideal process, course content is the meat of any training program³⁸. When developing course content, trainers must develop course content that links the training objectives to performance indicators. Trainers must also identify any barriers that may come as a result of state agency limitations. Barriers such as budgeting, time, and the participants varied levels of education are all taken into consideration when developing

³⁷ This information is based on personal observation.

³⁸ This statement came from general discussions of the authors listed on page 26.

TxDOT courses. Some of the content is mandated by state law, and needs little to no developing.

In TQD, there is a linkage from training to performance³⁹, however, not all trainers are skilled to develop courses that create this link. For example, the newest mandatory course was noted⁴⁰ for its excellent format and clearly stated objectives. Yet, as the course was developed many on the development team did not agree on the final course format. Trainers with the least experience wanted to include components that did not link to any specific objective, or any desired performance indicator. Even though the final course was a success, time was lost due to the lack of experience of some of the Trainers. These same Trainers were also oblivious to public sector concerns (i.e. limited budgets, high turnover, and understaffing). Table 5.4 reviews the results of the ideal type comparison to the process currently used at TxDOT.

Table 5.4: Developing Course Content Results: Summary of Results

Category and Ideal Type Concepts	Results		
<u>Developing Course Content</u>			
• Is there a Linkage from Training to Performance?	<u>Always</u>	Sometimes	Never
• Can Trainers Identifying Special Public Sector Concerns?	Always	<u>Sometimes</u>	Never

³⁹ This information is based on personal observation.

⁴⁰ This information was based on feedback received on course evaluations.

Delivering Instruction Effectively

The TQD chooses the time and schedule of courses based on the best time for the participants. This is done by deciding the most appropriate, feasible, and convenient time for the participants. Based on interviews, and a review of course agendas, classes never:

- Begin on Monday morning,
- End on Friday afternoon,
- Are scheduled during weeks that include holidays.

Each course taught in TQD is designed for specific participants⁴¹. For example, all mandatory courses are for managers and supervisors only. These courses designed to provide key information to management. Catering the class to just administrators allows the participants to feel more comfortable discussing subjects that are commonly withheld from non-administrators. This careful attention to detail helps TQD maintain courses that promote enhanced performance through networking and positive interaction.

Instructors are essential to the success of a course. The instructor's knowledge of the subject matter, attitude, preparedness, and delivery style are the factors that make or break a good instructor. Participants must be able to

⁴¹ This information is based on the review of current TxDOT Management Course Manuals.

understand and trust the instructor. TxDOT instructors are sent through a rigorous interviewing process that includes two interviews, and the creation of a course manual on an assigned topic⁴². As a result, most trainers come to the section with a wealth of experience in writing, and delivery. However, with the retention problems that often occur in state agencies⁴³, TxDOT sometimes gets desperate for new trainers. Old trainers get promotions, better jobs, or leave because of the intense travel schedule. Management is left needing a replacement to meet the travel demand.

Many of the important characteristics needed in a good trainer are ignored to fill an immediate demand⁴⁴. As a result, many trainers come to the department with some strong skills, and some very weak skills. Some trainers are not effective communicators, and are unable to think quickly, improvise, or adjust to classroom challenges. Some trainers are great presenters, but lack serious writing skills⁴⁵.

Another problem with the selection of instructors is the trainers that were transferred to the section before

⁴² This information was taken from the hiring process for Training Specialist in the TQD section at TxDOT.

⁴³ Retention is a problem for TxDOT, and it has been a hot subject within training courses offered in the districts.

⁴⁴ This statement was taken from interviews.

⁴⁵ This statement was taken from interviews.

effective screening techniques were in place. Some of these trainers have tremendous experience with the department, but lack any of the necessary skills to be a good trainer. These trainers are willing to travel, but are unwilling to learn any of the necessary techniques that will improve their skills in writing or presentation. This diversity of trainers causes a great deal of tension and controversy within the department, and minimize the effectiveness of the team (the section of trainers working together to instruct TxDOT employees.

As a result, some trainers are unwilling to teach and travel with other trainers. Cliques develop, and the participants suffer. The diversity of the agency should be apparent in the training staff. Yet, often times, trainers teach with other trainers based on traits they have in common. For example, two older White male trainers with similar years of experience will travel together before a young Hispanic female will agree to travel with one of these gentlemen. Another example would be a trainer with good delivery skills unwilling to travel with a trainer with bad delivery skills in fear that the bad trainer will provoke more negative comments on the course evaluation. When it is time to create course development teams, all of these factors prohibit some teams from working well

together. These circumstances are a direct result of bad selections of trainers (or bad hiring of trainers).

With increased budgets, the section is now able to choose a variety of methods for delivery that are fun, exciting, and are beneficial to the learning experience. These methods of delivery include new classrooms with remote controls, surround sound, and built-in participant computers. Table 5.5 reviews the results of the ideal type comparison to the process currently used at TxDOT.

Table 5.5: Delivering Instruction Effectively Results: Summary of Results

Category and Ideal Type Concept	Results		
<u>Delivering Instruction Effectively</u>			
• Is the section determining the Best Time and Most Appropriate Schedule?	<u>Always</u>	Sometimes	Never
• Is the section selecting the right Participants?	<u>Always</u>	Sometimes	Never
• Is the section selecting the right Instructors?	Always	<u>Sometimes</u>	Never
• Is the section Preparing Materials and Good Methods of Delivery?	<u>Always</u>	Sometimes	Never

Coordinating the Program

TxDOT courses are coordinated very well. Trainers are always prepared with additional information to make the class comfortable and enjoyable⁴⁶. The course logistics are all included in the major duty functions of all Program Administrator's (PA's). Therefore, each Trainer is evaluated on their ability to coordinate the logistics that come with each of the management courses. Another major responsibility listed in the PA roles is the scheduling of

instructors. This means that PA's are responsible for insuring that someone is available to teach each course, and the instructor has all special information that must be distributed. Table 5.4 reviews the results of the ideal type comparison of coordinating the program, to the process currently used at TxDOT.

Table 5.6: Coordinating the Program Results: Summary of the Results

Category and Ideal Type Concept	Results
<u>Coordinating the Program</u>	
• Are the course Logistics Handled?	<u>Always</u> Sometimes Never
• Is someone handling the Instructor Schedules?	<u>Always</u> Sometimes Never
• Is Important Information Being Distributed to Participants?	<u>Always</u> Sometimes Never

Evaluation of the Program

As stated in Chapter 1, TxDOT utilizes a level 4 training evaluation format. This means that TxDOT evaluates reaction, learning, behavior, and results to determine the success of the course. As a result, the section can identify indicators that will help to continuously evaluate the success of courses, justify the existence of courses, and show how it contributes to the organization's objectives and goals. The section can also properly evaluate whether or not courses should be updated or discontinued. Using the results, the section can also evaluate areas of improvement.

⁴⁶ This information was taken from interviews.

Although the system of evaluation is set-up well, the section needs work on utilizing the results of the survey. In the two years that I have worked in the section, I have been a member of three revision teams. At no time during the revisions did we review the feedback from the evaluations, or use that information to make changes. The written responses were forgotten unless a team member sought to use particular comments to push personal agenda's. I interviewed the employee responsible for calculating the evaluation responses. This employee presented me with statistical reports that provided no real pertinent information. These reports were filed, and available only by request. I asked what happened to written responses, and I was told that the Program Administrator was responsible for reviewing the written comments before submitting the evaluations for review. Yet, as a program administrator, I have never been ask to provide a report on written responses on evaluations, nor have any of the revision teams ever presented this information during revision time. So what are the evaluations for? What purpose does the written comments serve to the overall goal of the department? The evaluations are written well, but nothing is really done with the information. Table 5.7 reviews the results of the

ideal type comparison to the process currently used at TxDOT.

Table 5.7: Evaluating the Program Results: Summary of Results

Category and Ideal Type Concept	Results		
<u>Evaluating the Program</u>			
<ul style="list-style-type: none"> • Does the section have Indicators to assist in Evaluating courses? 	<u>Always</u>	Sometimes	Never
<ul style="list-style-type: none"> • Are Evaluation Results used? 	Always	Sometimes	<u>Never</u>

Chapter 6

Conclusion

The main purpose of this study was to identify the elements of a practical ideal type curriculum development process, and access the current format used by TxDOT in light of the ideal process. The study described the characteristics consistent with the ideal curriculum design process, and collected literature and on the current system used by TxDOT. This chapter offers conclusions to the study, and recommendations for improved curriculum design. Table 6.1 summarizes the results as presented in the previous chapter. The ideal type categories are used to frame the outline of the recommendations⁴⁷.

Table 6.1 Research Recommendations

Category and Ideal Type	Results	Recommendations
<u>Setting a Mission Statement & a Goal</u> <ul style="list-style-type: none"> • Are the Roles and Missions of the section clearly defined? • Can Key Result Areas be determined? 	<u>Always</u> Sometimes Never <u>Always</u> Sometimes Never	<ul style="list-style-type: none"> • They should continue to encourage training to support the mission and goals.
<u>Determining the Needs for Classes</u> <ul style="list-style-type: none"> • Can the Current Design Process be accessed? • Does the current process utilize the Three Levels of Alignment? • Using the current process, can course Models be built to help Define Gaps? • Does the agency evaluate unproductive training practices? 	<u>Always</u> Sometimes Never <u>Always</u> Sometimes Never Always Sometimes <u>Never</u> Always Sometimes <u>Never</u>	<ul style="list-style-type: none"> • The TQD section needs to develop a formal process for determining the need for a new course. • Within the new formal process, the section must include ideal models that help to identify gaps in the curriculum. • The TQD section needs to closely evaluate unproductive training practices.
<u>Establishing Performance Objectives for Classes</u> <ul style="list-style-type: none"> • Is there a Focus on Performance? • Are there Performance Improvement Interventions? • Is the section Moving Toward a Performance-Focussed Organization? 	<u>Always</u> Sometimes Never <u>Always</u> Sometimes Never <u>Always</u> Sometimes Never	<ul style="list-style-type: none"> • The agency should continue to encourage enhanced performance through a formal curriculum design process.
<u>Developing Course Content</u> <ul style="list-style-type: none"> • Is there a Linkage from Training to Performance? • Can Trainers Identify Special Public Sector Concerns? 	Always Sometimes Never Always <u>Sometimes</u> Never	<ul style="list-style-type: none"> • New Trainers should be trained on the special concerns of public sector organizations before they are assigned to development teams.
<u>Delivering Instruction Effectively</u> <ul style="list-style-type: none"> • Is the section determining the Best Time and Most Appropriate Schedule? • Is the section selecting the right Participants? • Is the section selecting the right Instructors? • Is the section Preparing Materials and Good Methods of Delivery? 	<u>Always</u> Sometimes Never <u>Always</u> Sometimes Never Always <u>Sometimes</u> Never <u>Always</u> Sometimes Never	<ul style="list-style-type: none"> • The section should maintain the highest level of expectations when hiring new Trainers.
<u>Coordinating the Program</u> <ul style="list-style-type: none"> • Are the course Logistics Handled? • Is someone handling the Instructor Schedules? • Is Important Information Being Distributed to Participants? 	<u>Always</u> Sometimes Never <u>Always</u> Sometimes Never <u>Always</u> Sometimes Never	<ul style="list-style-type: none"> • No Recommendations
<u>Evaluating the Program</u> <ul style="list-style-type: none"> • Does the section have Indicators to assist in Evaluating courses? • Are Evaluation Results used? 	<u>Always</u> Sometimes Never Always Sometimes <u>Never</u>	<ul style="list-style-type: none"> • The TQD section should utilize course evaluations as a tool to improve management courses.

⁴⁷ The format for the paragraph was taken from the Applied Research Project of Rudy Cardoza, 2001,

Summary

As the Texas Department of Transportation continues to promote enhanced performance through training, this case study researched an ideal curriculum design process and compared the ideal process to the one currently used by TQD. This study revealed that TxDOT's design process was closely related to the ideal process, but some changes are needed in order for the currently used process to meet 100% of the ideal concepts. Developing a formal process for curriculum design will:

- Bring uniformity to the process.
- Ensure that courses are always linked to section goals.
- Ensure that ideal performance models can be developed to properly identify gaps in the curriculum that need to be corrected.
- Continually encourage enhanced performance within all course curriculum.

In order to properly deliver the courses, the ideal comparison revealed a need for the section to maintain high levels of standards when hiring new Trainers, and provide

additional training to new instructors on the special concerns of public sector organizations. When courses are completed, the section needs to utilize the evaluation results to maintain continuous improvement of management courses.

For future research, it would be beneficial to survey district and division Training Coordinators to determine if the TQD courses are in alignment to the needs of TxDOT employees. It would also be beneficial for researchers to examine the trends of premiere companies to determine if the ideal curriculum design process has changed in order to strengthen the results of designed training courses.

Table 6.2 reviews the overall summary of this case study, and reviews the rating given to each ideal type category.

Table 6.2 Overall Conclusions

Ideal Type Category	Rating Based on the Practical Ideal Type
Setting a Mission Statement and a Goal	<p><u>Strong</u></p> <p>Satisfactory</p> <p>Needs Improvement</p>
Determining the Needs for Classes	<p>Strong</p> <p>Satisfactory</p> <p><u>Needs Improvement</u></p>
Establishing Performance Objectives for Classes	<p><u>Strong</u></p> <p>Satisfactory</p> <p>Needs Improvement</p>
Developing Course Content	<p>Strong</p> <p><u>Satisfactory</u></p> <p>Needs Improvement</p>
Delivering Instruction Effectively	<p>Strong</p> <p><u>Satisfactory</u></p> <p>Needs Improvement</p>
Coordinating the Program	<p><u>Strong</u></p> <p>Satisfactory</p> <p>Needs Improvement</p>
Evaluating the Program	<p>Strong</p> <p>Satisfactory</p> <p><u>Needs Improvement</u></p>

Appendix A: Bibliography

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Appendix B: Interview Questions and Responses

Note: Six TxDOT employees were interviewed. Three of the respondents were Trainers, and three were Managers. To protect the confidentiality of the interviewees, the listed are in random order. The experience level of the respondents ranged from two years to 20 years. As a result, some respondents had no knowledge of certain questions. The responses were taken in shorthand.

1) Describe the early TxDOT business practices?

Respondent 1 - In the 1940's, business processes were very regimented. The management was strict, little flexibility, closed, conservative, private. In 1994, NAACP and other groups publicly ridiculed the agency for discriminatory hiring practices. Agency Developed 2-94 system.

Respondent 2 - Very military driven. Disciplined, focussed, and low tolerant.

Respondent 3 - No response

Respondent 4 - No response

Respondent 5 - From what I know, they were pretty good. People just did their job, and everything was fine. I am not sure I understand exactly what you want to know.

Respondent 6 - no comment

2) When did the agency begin to focus on training?

Respondent 1 - Around 1980.

Respondent 2 - No answer.

Respondent 3 - No answer

Respondent 4 - When the agency began to change its strategic plan, and focus more on quality management, employee retention, and better performance.

Respondent 5 - No Answer

Respondent 6 - I am not sure.

3) What were the objectives of the early TQD program?

Respondent 1 - This is not official or anything, but I think the real objective was to produce better managers and supervisors, and improve the way they interacted and treated employees.

Respondent 2 - I think the purpose was to encourage better customer service for the citizens of Texas.

Respondent 3 - No response

Respondent 4 - I think the agency wanted to develop internal training to promote agency ideas.

Respondent 5 - No Response

Respondent 6 - No response

4) Describe how the Total, Quality, Development division was developed.

Respondent 1 - In early 1980's, employees were attending Governor's center. IT was the only training around for state agencies. Good training, but TxDOT employees were listening to what was being done in other agencies, and bringing back new ideas. Management hated that, and wanted to keep training in-house. In 1985, they

came up with Managing People I and Managing People II. These courses were a copy of the Governor's center courses. They were o.k., but later we needed courses more in line with our agency. People were beginning to say that our training was a waste of money. Had to do something great to keep the department.

Respondent 2 - I was transferred from the computer training section, and my feedback in minimal. I think the agency began with the mission of developing courses that were well facilitated, and up-to-date.

Respondent 3 - No response

Respondent 4 - No response

Respondent 5 - No response

Respondent 6 - No response

5) What concerns (if any) do you have with the current hiring process?

Respondent 1 - No response

Respondent 2 - I think the process was good for some of us, but for others, it was rushed, and it lacked any true indicators to prove the person chosen actually had the skills to do the job.

Respondent 3 - The process is used sometimes, and then sometimes its not. I have seen a lot of good trainers choser, but sometimes, the process doesn't do squat.

Respondent 4 - It is a good process if it is used properly. And with the turnover lately, I don't think it has been used well at all.

Respondent 5 - I think the process is very effective. The job simulation is a helpful tool to identify quality presentation skills. The Knowledge Skills and Ability section are really useful in weeding out top performers.

Respondent 6 - I think the process could use a little fixin. IT needs to require more public sector experience. Private sector folk don't really understand the problems and obstacles of state government.

6) What is your opinion of the productivity of trainers, and their ability to coordinate training courses effectively?

Respondent 1 - They seem to do be doing a great job.

Respondent 2 - They are very effective, our classes are very well coordinated.

Respondent 3 - Trainers to good job on making classes comfortable and enjoyable.

Respondent 4 - I think our classes are very well prepared. Each PA follows through on the necessary logistics in order to make each class a success.

Respondent 5 - No response.

Respondent 6 - I think out trainers are very good at coordinating courses.