THE STATUS OF PROJECT MANAGEMENT IN THE VISUAL COMMUNICATION TECHNOLOGY CURRICULUM AT BOWLING GREEN STATE UNIVERSITY

Michael A. Metzger

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Committee:

Terry Herman, Co-Chair

Donna Trautman, Co-Chair

Jeff Rybak, Member

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ABSTRACT

The discipline of project management can be traced to as early as the building of the pyramids. The need for it in today's workforce is still evident. Completing projects on time while maintaining good quality and keeping the projects under budget is especially important.

In the Visual Communication Technology program at Bowling Green State University, students have multiple projects throughout different classes running concurrently. After graduation, students will also be faced with projects in their future professions. Without the use of project management, the students would have no organized way of finishing projects for class or their future professions on time, under budget, or according to the specifications provided by the faculty member or client. However, with no classes specific to project management in the VCT curriculum, knowing if the students are learning proper project management has been unknown.

For this study, the VCT program was evaluated based on the Project Management Institute's methodology called the Project Management Body of Knowledge. By evaluating the program based on a standardized methodology, learning outcomes of project management currently being taught in the VCT program were discovered. Once the learning outcomes were identified, the benefits of teaching different levels of project management through the different courses in the VCT program were explored. For the conclusion of this project, an action plan was developed to increase the visibility of project management in the VCT program.

DEDICATION

Dedicated to my late mother, who always pushed me to be the best, and do the best I could throughout her life. I would not be who I am today without her constant patience and understanding. To my father, Larry and brother, Dave, who both have showed me how a family can stick together and overcome anything. Also, to Uncle Dan, Aunt Jane, Kate, and Sue for being a second family throughout my life.

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SECTION I. BACKGROUND AND GOALS

General Statement of the Project and Background Information

Project management, while being practiced for centuries, has permeated many industries and become a formal discipline over the last two decades. Perhaps the need to keep projects on time and under budget, while maintaining superior quality, has had many companies implementing project management models and methodologies. Therefore, as undergraduate students enter the workforce, a general knowledge of project management has become essential.

As students within the Visual Communication Technology (VCT) program at Bowling Green State University (BGSU) work on projects as part of their course requirements, the discipline of project management surfaces as an integral part of the curriculum. In order for students to manage their projects within their courses and future professions they need to understand the underlying foundational knowledge and theory of project management. This project used an evaluation tool to explore the actual learning outcomes related to project management within the VCT curriculum at BGSU. Recommendations for additions, revisions, or confirmations to the current curriculum have been made based on the research from this study, thereby giving rise to a status of project management in the VCT curriculum.

From exploring project management sources, it is evident the Project Management Institute (PMI) has become the leader of project management knowledge and information. *A Guide to the Project Management Body of Knowledge (PMBOK Guide)*, published by PMI, was the base methodology this study utilized for comparison of the current curriculum. This study was also completed by using the *PMBOK Guide* methodology to get from the initial phase of starting the project to the final phase of completing it.

Statement of the Problem

Most students within the VCT program at BGSU spend a majority of their classes in a lab environment working on projects. The students' projects are completed both on an individual and team basis with other members of their classes. Both of these project completion methods require a student to use some form of project management to get from the initialization to the completion of a project, which will be essential in their future professions as well. While some classes do touch on project management, a more structured, systematic approach may be needed for the undergraduate students in this major.

Project Objectives

1. Identify learning outcomes related to project management being taught in VCT.
2. Explore the benefits of teaching different models of project management in different courses throughout the VCT program.
3. Develop an action plan to continue implementing, to integrate, or to increase visibility of project management within the VCT program.

Identification and Description of Resources

PMI offers a methodology that was used for the basis of this project called the Project Management Body of Knowledge. Project management software called Microsoft Project 2007 was used to manage this project from start to finish. The help guide and the *Microsoft Project 2007 Bible* assisted the researcher in using the Microsoft Project 2007 software correctly. Professional textbooks and web sites on project management were referenced heavily throughout this project. The final resource was the VCT faculty of BGSU.

Review of Literature

Project Management Overview

Project management has been practiced since early Egyptian times when King Djoser and one of his ministers Imhotep built the first pyramid. After changing the initial plans of a large, square-shaped mostaba four times, the first pyramid was built (Sprague De Camp, 1987). From the pyramids to the American transcontinental railroad system, projects have been a part of human history. The actual disciple of project management was not created until the mid 1900s. "Beginning with the nuclear weapons programs after World War II, specific techniques emerged for planning and managing their enormous budgets and workforce" (Verzuh, 2003, p. 7).

However, traces of project management can go back to the late 1800s with the work of Henry Gantt. Mingus (2002) states the following:

> Gantt developed a system he called "The Task and Bonus System" … In this system he introduced and refined several project management concepts, such as breaking down a process into a series of tasks, performing work to standard estimates on those tasks, and tracking progress against those estimates. He created a new type of chart to track this progress so that it could be verified, as he called it, "at a glance." (p. 4)

Gantt charts became an essential factor in managing the details of work handed off to multiple people, and also how scheduling would be managed (Harvard Business School, 1996, p. 3).

During the 1950s, two more strategies on project planning were developed to control the risk of going over schedule. The strategies, Program Evaluation and Review Technique (PERT) and Critical Path Method (CPM), became mainly used in the space program and military defense (Mingus, 2002). During the mid-1960s through the mid-1980s, project management continued to grow and mature, but was still vastly unknown and only taught on a limited basis in some

engineering schools. Today, "powerful competitive pressures to manage and reduce product cycle time are increasing, … As a result, industries as diverse as computer manufacturing, consulting services, pharmaceuticals, photography, and natural resource management have aggressively implemented project management" (Harvard Business School, 1996, p. 3).

Project Management Institute

In 1969, an international trade organization for project managers called PMI was formed (Project Management Institute, 2009). PMI started as a small group of project managers mainly in the construction and engineering fields. "By the mid-1990's, membership had grown to 12,000; less than a decade later, by the end of 2000, membership had exploded to over 70,000 worldwide" (Mingus, 2002 p. 6). PMI has currently grown to over 265,000 members worldwide (Project Management Institute, 2009).

PMI has taken the field of project management to a new level by creating standards of practice for project managers that continue growing daily. PMI developed a Project Management Body of Knowledge and *A Guide to the Project Management Body of Knowledge (PMBOK Guide)* to gather all project management information into one worldwide standard. With the first white paper version being released in 1987, PMI helped identify the most common accepted practices in project management and arranged them into project functional areas. The guide was updated and expanded in 1996, and in 2000, was updated again. The third edition of the *PMBOK Guide* was released in 2004 with a significant overhaul that included the addition of five new processes of project management. The biggest changes were the expansion of the closing process and also the addition of the project Work Breakdown Structures (WBS), which have replaced PERT and CPM charts. PMI released the fourth edition of the *PMBOK Guide* at the end of the 2008 calendar year, correcting many of the redundancies between the processes,

standardizing inputs and outputs, and also implementing a global approach for documenting the inputs and outputs (Project Management Institute, 2008).

PMI has also allowed project managers at the professional level to get certified through the organization. Project Management Professional (PMP) certification is now widely known and recognized in the field. "As of the year-end 2000, there were more than 27,000 holders of the PMP certification" (Mingus, 2002, p. 7). According to the Project Management Institute (2008), PMI also has four other recognized certifications: CAPM Certified Associate in Project Management (CAPM), Program Management Professional (PgMP), PMI Risk Management Professional (PMI-RMP), and PMI Scheduling Professional (PMI-SP).

A Guide to the Project Management Body of Knowledge

The *PMBOK Guide*, while still a well-structured methodology, is only a guide to PMI's actual Project Management Body of Knowledge, which like the entire field of project management, continues to grow. In the current edition of the *PMBOK Guide*, which will be used for the basis of this project, PMI has structured their methodology into five process groups: initiation, planning, development, monitoring and controlling, and closing. Within these five process groups are 42 processes that run throughout a project's life cycle. PMI has also organized the 42 processes into nine knowledge areas: project integration, scope, time, cost, quality, human resource, communications, risk, and procurement management. As shown in Appendix A, each of the 42 processes within the nine knowledge areas can be broken down further into inputs for the process to begin, tools and techniques needed for the process to be completed, and outputs from the process being finished (Project Management Institute, 2008).

The *PMBOK Guide* explains how a project team must "select appropriate processes required to meet the project objectives" (Project Management Institute, 2008, p. 37), as not all 42

processes will have a need in every project. These processes maintain the overall scope of a project by using a WBS. Beyond processes, the *PMBOK Guide* also states other needs a project team must have. Those being: application area knowledge, standards and regulations, general management knowledge and skills, interpersonal skills, and the ability to understand the project environment (Kanabar, 2008).

Application areas can range from technical elements such as engineering, to management specializations or industry groups. A project team utilizes standards and regulations to follow guidelines and rules set by a recognized body, and to meet requirements set in place by the government. The ability for a project team to adjust to physical, cultural and social, and international and political environments is also necessary. General management knowledge skills range from sales and marketing, to financial management, to manufacturing, as well as health and safety practices. Interpersonal skills are a necessity as communication in a project is crucial. Leadership, motivation, problem solving skills, and the ability to negotiate and influence an organization are all facets of interpersonal skills. Also, the *PMBOK Guide* brings program management, portfolio management, subprojects, and the Project Management Office (PMO) into a project management context, which arranges several associated projects in a hierarchy to achieve a strategic plan (Project Management Institute, 2008).

The *PMBOK Guide* differs from other methodologies as it bases much of the project life cycle around the project stakeholders. According to Kanabar (2008), "stakeholders have varying levels of authority, and their influence changes over time" (p. 102). Formal stakeholders for a project are the customer, the parent organization, and also the project team. Informal stakeholders are the end users and any others affected by the outcome of a project. However, one of the most important stakeholders is the project sponsor, who provides the financial

resources to make the project happen. Because the stakeholders are so important to a project, it is essential for project managers to strive to meet the stakeholders' needs (Project Management Institute, 2008).

Project Management Office

The PMO is "an organizational body or entity assigned various responsibilities related to the centralized and coordinated management of those projects under its domain" (Project Management Institute, 2008, p. 11). A PMO, sometimes referred to as the project office or program office, manages projects, programs, and combinations of both. Projects within the PMO are usually unrelated, other than the fact they are being managed together. According to Kanabar (2008), "a project manager is responsible for delivering specific project objectives within the constraints of the project, while a PMO is an organizational structure with specific mandates that can include an enterprise-wide perspective" (p. 15). Where a project manager is assigned to manage a projects scope, schedule, cost, and quality, the PMO is in charge of the overall risk, opportunity, and related projects.

Aside from taking responsibility to achieve the project goals and direct management, the PMO also can provide support functions of project management, such as training, software, standardized polices, and procedures. Occasionally, the PMO will also serve as a project stakeholder and act as a decision maker during the early stages of planning. A PMO can also make recommendations at any time during the project life cycle and terminate projects to maintain overall business objectives (Project Management Institute, 2008).

Work Breakdown Structure (WBS)

The WBS was created by PMI to manage and define the overall scope of a project and is the foundation for the planning of a project. The Project Management Institute (2008) states:

> The WBS is a deliverable-oriented hierarchical decomposition of the work to be executed by the project team, to accomplish the project objectives and create the required deliverables, with each descending level of the WBS representing an increasingly detailed definition of the project work. (p. 116)

With projects, the overall scope can sometime be very in-depth. In order to make a project manageable, a WBS is created to simplify the scope by breaking the project into large-scale activities. The activities are then decomposed into smaller activities. This process continues until the activities reach their smallest level, also called work packages. "Work packages may vary in size, but should be detailed enough so that the cost and schedule can be reliably estimated" (Kanabar, 2008, p. 59).

Past WBS breakdowns have been created with three reporting levels: Stages or phases (level 1), steps or activities (level 2), and tasks (level 3). However, with the advancement of computer scheduling software, companies have stopped naming the levels as the software allows for more than three. These companies label the lowest level as detailed tasks, and all other levels are called summary tasks (Mingus, 2002). The WBS can be created in graphical illustration similar to an organizational chart, or in outline form. The more common method currently used is the outline form, as a graphical WBS is no longer supported by the newest project management software. However, the traditional graphical WBS has made it easy to understand the individual parts of a project and how they are related, and is therefore used in the earlier stages of the project (Kanabar, 2008). As project stakeholders are one of the most important parts of a project, having a visual WBS that assists them in viewing the deliverables, whether in outline form or graphical, is a must.

Other Global Standards, and Certifications

While this project is based on the *PMBOK Guide,* and the standards released by PMI, there are many other methodologies and certifications available in the world today. Projects IN Controlled Environments (PRINCE2*)* is the project management standard in the United Kingdom, but is also used worldwide (Office of Government Commerce, 2005). This "methodology was originally developed for use on IT projects, but since its relaunch as PRINCE2, it is used in any type of project" (Kanabar, 2008, p. 254). PRINCE2 is owned by the Office of Government Congress (OGC) and is managed by the Association of Project Managers Group. While also having a handbook similar to the *PMBOK Guide*, PRINCE2 focuses on products, where the *PMBOK Guide* focuses on activities to produce products (Office of Government Commerce, 2005). To obtain certification as a PRINCE2 Practitioner, one must take two exams. The first, called the Foundation, examines understanding of principles and terminology of the PRINCE2 method. The second, called the Practitioner, examines if a candidate is able to apply the methodology to running and managing a project (Kanabar, 2008).

Another organization within project management is the International Project Management Association (IPMA). IPMA was founded four years before PMI, making it the oldest project management association in the world. However, PMI is more widely accepted having over 200,000 more members (Morris, 2008). The IPMA uses baseline standards called IPMA Competency Baseline (ICB). These standards are based on contextual, behavioral, and technical competences that IPMA calls the Eye of Competence (International Project Management Association, 2006). These competences are broken down into 46 different elements similar to the *PMBOK Guide* and other methods. The big difference with the IPMA is that, "each member is responsible for establishing its own national standards in the context of the

baseline standards defined by the IPMA, as well as it's own certification program, which is verified by the IPMA" (Kanabar, 2008, p. 252).

The IPMA offers five certifications for project managers. The first is an introductory certificate, and is for anyone who is looking to understand the basic principles of project management. The rest are broken into the following four levels: Level D - Certified Project Management Associate, Level C - Certified Project Manager, Level B - Certified Senior Project Manager, and Level A - Certified Projects Director (International Project Management Association, 2008).

IPMA has 43 national member associations, most of which are in Europe. They have also formed an alliance with one of the other major project management groups, the Australian Institute of Project Management (AIPM). AIPM adopted the *PMBOK Guide* as their knowledge base to for members to receive certification through their institute. AIPM is also tied directly to the Australian government's Australian Qualifications Framework (AQF). AQF is a national program of qualification and offers three levels of Registered Project Manager (RegPM) certification (Kanabar, 2008). The three certifications a member of AIPM can receive are defined as a Certified Practicing Project Practitioner, Certified Practicing Project Manager, and Certified Practicing Project Director (Australian Institute of Project Management, 2008).

Another methodology that has recently been linked to project management is called Six Sigma. Six Sigma defines its processes as define, measure, analyze, improve, and control (DMAIC), which makes it very similar to project management methods as it starts with planning and defining, and strives to manage risks through a process. Six Sigma measures a process by the defects it produces. A process achieves Six Sigma when there are only 3.4 defects per million opportunities (DPMO) (Brue, 2005). Defects "can be defined as any failure to meet the

specification limit or performance standard" (Neuendorf, 2004, p. 3). Project management holds Six Sigma, which is based around quality control, quality assurance, and process management, together. When putting both Six Sigma and project management together, the realization that project management is a process is imperative. According to Neuendorf (2004), "the real focus of six sigma is not on the number of defects or the number of opportunities, or even on the sigma value (...). The focus is on the process – improving it and maintaining the improvements" (p. 53).

Process and Project Management Software History

Almost as important as having a project manager is using the proper software to manage the project. Project management software packages have been used since the 1970s. According to Mingus (2002), "the first project management packages ran on large mainframe computers and cost upwards of $100,000 annually" (p. 343). Because of these high costs, the original packages were primarily used by the government, government contractors, and the larger construction firms. Early packages had very limited resource capabilities; however, they did produce graphical Gantt charts and network diagrams. Project tracking features were also available, but not used by all organizations.

In the 1980s, personal computer (PC) packages were becoming available while most packages still ran on mainframes. However, PC packages lacked the graphics the mainframe software had and the price was much lower. Sacrificing graphics, many nongovernmental organizations in the engineering, information systems, architecture, and training fields started purchasing the PC packages because of the price decline. Throughout the 1990s, PC packages improved immensely (Mingus, 2002).

Currently, there are many different project management packages available, ranging anywhere from free to $10,000. They have great resource capabilities and their graphics are acceptable, if not excellent. The different project management software packages are also being integrated with process management packages, which differ by allowing a user to track an entire project management process, rather than just assist in scheduling and tracking a project. Current process management software allows users to print Gantt and PERT/CPM charts, enter a WBS in several detailed levels, track actual progress, set up a budget, and let the user revise the project schedule based on changes to the scope (Mingus, 2002).

Commonly Used Software

In terms of software packages, the favorites are currently Microsoft Project, Primavera, and Open Workbench, which are used by both novice and advanced project managers. Microsoft Project 2007 (Project 2007), now on its ninth release, was first released for Windows in 1990. Project 2007 is designed specifically for use by the project manager. This software lets the user customize an entire project and allows for changes throughout the project life cycle. It also allows for monitoring of the process and assists you in thinking through scenarios by using what-if situations (Morris, 2008).

Project 2007 is also compatible with MindManager, software released by the Mindjet Corporation. Built on the mind mapping methods of Tony Buzan, Mindjet lets a user build customized task management maps that can be used along with many of the Microsoft Office programs, such as Word and Excel. The newest release, MindManager 8, uses a new interface called Mindjet Connect, an online collaboration service. It allows users to centralized storage, instant meetings, and a vast amount of communication features (Mindjet, 2008). Inspiration is also a very similar program to Mindjet. It is designed for students and project teams to plan

projects and brainstorm ideas. Inspiration Software, who created Inspiration, has recently released a web-based beta version of this software called Webspiration, which allows users to communicate from anywhere. However, Inspiration and Webspiration are not compatible with any actual project management programs at this time (Inspiration Software, 2009).

Along the same lines as Project 2007, is a program called Open Workbench. Started by Niku, it was sold as a stand-alone package and also in the Niku Portfolio Manager Suite, was first called Project Workbench. Project Workbench was known as a relatively expensive program. However, CA purchased Project Workbench in 2004 and released it under a new name, Open Workbench. Open Workbench has now become a strong alternative to Project 2007, and on the plus side, is open source and free to anyone (Morris, 2008).

Software similar to Project 2007 and Open Workbench is SureTrak Project Manager 3.0 (SureTrak). Developed "from Primavera Systems, SureTrak features a user-friendly KickStart tool that helps you simplify the often intimidating and worrisome initial planning and project-starting phase" (Morris, 2008, p. 174). SureTrak provides built-in tutorials on creating and monitoring a project. It also allows users to create Gantt and PERT charts, specialized calendars, critical path scheduling, and budget tracking. SureTrak is a newer software package, and some organizations prefer it as SureTrak allows for other task organization methods besides using a WBS (Morris, 2008, Mingus, 2002).

Other Available Software

On the high-end user side of project management software are three other packages: Clarity by CA, Project Server by Microsoft, and Primavera. Clarity by CA is the most configurable, while providing users the options to use Open Workbench or Microsoft Project along side of it. It also allows businesses to integrate it with ERP systems like PeopleSoft or

SAP. The only downside is the price, as it is one of the more expensive tools on the market. Project Server by Microsoft is an extension of Microsoft Project. To use it, the user must have the professional version of Microsoft Project. Microsoft Project Professional however, as Morris (2008) states, "still lacks some of the complete integration that many of the other products have" (p. 181). Primavera is primarily used in the engineering world, and is one of the most integrated and collaborative engineering and planning management tools used today (Morris, 2008). Also, being used more currently are web-based programs, such as Basecamp. Basecamp is an online project collaboration tool, which allows users to gather in a centralized location, assign tasks, share feedback, and meet deadlines (37signals, 2009). Google is also becoming a tool people are using to collaborate. With Google Calendar, Google Docs, and Google Mobile, Google is becoming cross-platform and user-friendly from computers to cell phones. While these Google features are not project management based, they do allow a project management teams a centralized place to communicate deadlines and share documents (Google, 2009).

Other programs available are AMS REAL TIME, Artemis (Views, 7000, and Knowledge Plan), B-Liner Project Outliner, Common Office, iTeamWork.com, Journyx Timesheet 4.0, Micro Planner, onProject.com, OPX2, Plan & Progress Tracker, Project KickStart3, QuickGantt, Task Manager 2000, TeamPlay, Time Control 3,and Time Tiger (Morris, 2008). These software packages, while each individually unique and having specific beneficial features, have many limitations when it comes to managing an entire project compared to the previous packages mentioned.

How People Learn

There are many theories dealing with learning, each having a different definition of what learning really is. Those theories can be broken into three perspectives of learning: behaviorism,

cognitivism, and constructivism. Behaviorism suggests that learning changes as a person's behavior changes. Cognitivism is based more on learning through cultural experiences. Controversially, constructivism proposes that learning is intentional and based on conscious activity (Pennsylvania State University, 2007). A shortfall of these learning theories is none of them are comprehensive.

With the need for a more learner-centered classroom, it is necessary to reach to different types of learners in different ways. No one says this better than Howard Gardner in his writings on multiple intelligence theory. Intelligence, according to Gardner (1993), "entails the ability to solve problems or fashion products that are of consequence in a particular cultural setting or community" (p. 15). For the last century, intelligence has been measured by the ability to score well on a test. Whether that test is an IQ test or even Scholastic Aptitude Test, testing intelligence has been based on verbal and logical-mathematical skills. However, it is suggested that there are multiple intelligences that should be measured: spatial, musical, bodily-kinesthetic, interpersonal, and intrapersonal (Gardner, 1993). Because of this, Gardner (1993) also states, "the purpose of school should be to develop intelligences and to help people reach vocational and avocational goals that are appropriate to their particular spectrum of intelligences" (p. 9).

Gardner's theory is one of many though. Along the same lines as Gardner is one of the more famous educational psychologists, Robert Gagné. Gagné believed that different types of learning exist and the different methods of instruction would bring the different learning types out. Gagné believed there were seven levels of learning in a hierarchy: stimulus-response, motor chaining, verbal chaining, multiple discrimination, concept learning, rule learning, and problem solving. He also believes signal learning was one continuous form of learning that could occur anywhere (Jarvis, 2006). Gagné's work has also been very influential to

instructional design, as seen in his Nine Events of Instruction. The nine events include: to gain attention, inform learner of objectives, stimulate recall of prior learning, present stimulus material, provide learner guidance, elicit performance, provide feedback, assess performance, and enhance retention transfer (Encyclopedia of Educational Technology, 2008).

Also, on the more cognitive side of learning is Swiss biologist and epistemologist, Jean Piaget. "What he fundamentally wanted to do was to uncover how the human intellect develops, and he did this very thoroughly, so that today he is generally acknowledged to be one of the pioneers of psychology" (Illeris, 2007, p. 35). Piaget bases his theory on the idea that the human ability to learn is a characteristic developed phylogenetically through the survival of species (Illeris, 2007). The Russian learning theorist, Lev Vygotsky, shared this same view as Piaget. However, Vygotsky, who also studied early childhood development, realized that Piaget's theory was not completely accurate as children needed to learn logical thought and reality would not teach them that (Jarvis, 2006).

There are many other theories from educational theorists like John B. Watson, Danny Wildemeersch, Jack Mezirow, Chris Argyris, John Dewey, and Daniel Goleman, whose learning theories span from behavioral learning, transformative learning, to human learning through adult education, organizational learning, experiential learning, and emotional intelligence (Jarvis, 2006). With all the theories to consider, it is apparent that learning can be viewed in many ways. Pennsylvania State University College of Information Sciences and Technology has ten tested principles of human learning that sum up what all the theories seem to suggest. Pennsylvania State University College of Information Sciences and Technology (2003) lists the ten theories as:

1. Students cannot recall and apply knowledge unless they practice retrieval and use.
2. Better learning (more easily recalled and applied) results when we vary the conditions

of learning.

3. When learners integrate knowledge from both verbal and visual representations, they can recall it and apply it with greater ease.
4. Prior knowledge or belief determines what students will learn.
5. What instructors and learners believe about knowledge acquisition (epistemology) influences what will be learned.
6. Experience is a poor teacher because corrective feedback is rare.
7. Lectures fail to promote understanding because understanding is an interpretive process in which students must be mentally involved.
8. Remembering is a creative process that influences what learners will and will not be able to recall and apply.
9. In learning, less is more. Trying to cover large amounts of material and information reduces understanding and recall. If we teach toward future use, we should focus on in-depth understanding of principles.
10. What learners do in a course will determine what they will learn, how well they can recall it, and the conditions under which they can use it.

These principles prove it is necessary for instructors to recognize and adjust the curriculum to adapt to many learning capacities not just through the mind, but also through emotions, relationships, and experience.

Curriculum Assessment

Before any changes can be made to a curriculum in higher education, some form of assessment needs to happen in order to justify the possible changes. Assessment is simply a method an institution uses to accumulate data and evaluate the quality of student learning. Fulks

(2004) states, " assessment in higher education involves four important processes: identifying clear, valid, and appropriate student learning outcomes, collecting evidence that those outcomes are being addressed, dialogue to attain a collective interpretation of the data, and using data to improve both teaching and learning." Assessment differs from how instruction has been in the past as it forces the instructors to look at what the students need to learn, rather than what they want teach (Fulks, 2004).

Assessment should be viewed as a process that can be repeated any number of times. To begin this process, a program must be reviewed in order to figure out if there are actually areas that need attention. Following this, a set of learning outcomes must be prepared. Learning outcomes in curriculum assessment are what a student should know or be able to accomplish after a course. Once learning outcomes have been recognized, some evaluation device must be formed to measure the learning outcomes. After making an evaluation device, it is necessary to review the curriculum again and set a benchmark of the current status. From this point, refinements can be made based on the outcomes of the assessment (Fulks, 2004).

In higher education, many institutions have their own standards for assessment. Each program within the institution usually has its own learning outcomes as well. Taking it one step further, classes within programs also have intended learning outcomes. Having many levels instead of one overall standard has become beneficial, as each class requires different learning outcomes (Fulks, 2004). However, Bryan (2006) suggests that students have become accustomed to certain assessments and changing the way a course is assessed makes students wary about approaches they are unfamiliar with. Bryan also believes this is because students today know what they need to do to receive a good grade while doing the least work possible.

However, innovations in assessment should not alarm students. While many students fear examinations and standardized testing used by instructors to evaluate assessment, there are other ways to assess learning and make curriculum adjustments that keep students involved and wanting to participate. Gardner (1993) believes that we should restructure curricula to focus on the skills, knowledge, and understandings that are relevant to our country. Also, we need to adapt curriculums to the learning styles and strengths of students. Devising "procedures and instruments that are 'intelligence-fair' and that allow us to look directly at the kinds of learning in which we are interested" (Gardner, 1993, p. 79) is how a curriculum today should be assessed in order to get the best results possible when evaluating learning outcomes.

Instructional Design

Instructional design, while having many definitions, is basically "a systematic approach to planning and producing effective instructional materials. It is similar to lesson planning, but more elaborate and more detailed" (Siemens, 2002). However, according to EduTech Wiki (2009), instructional design can be broken down into six different categories:

1. Models that describe a pedagogic strategy in detail.
2. Models that relate to the quality of a design.
3. Models that provide a method to create a design.
4. Complementary models that will enhance a design.
5. Change management related models that specifically address the issue of introducing new pedagogies and associated instructional design models.
6. Models that describe the functions of a learning environment.

Each of these six categories also has specific models that coincide with them. Instructional design models that use methods to create a design are often misused as project

management models. Instructional design models are a structure for learning. As Siemens (2002) states:

> From a designer's perspective, various models can be followed in the instructional design process. It is important to note that, at best, a model is a representation of actual occurrences and, as such, should be utilized only to the extent that it is manageable for the particular situation or task. Put another way, perhaps one model is more effective for designing a math course, and another model is more effective for designing soft skill courses (like managing people, customer service, etc.).

While a project is designing a math course, the major difference between project management and instructional design is that designing a math course is the project, and not how you manage it. In project management, there is a need to focus more on schedules, budgets, risks, and technical details, rather than just the project itself.

In the VCT program, a workflow (VCT Workflow) that the researcher would classify as an instructional design model is used quite frequently. In the VCT Workflow, students go through a series of six steps: Identify a problem, identify an audience, select media, design and development, implementation, and evaluation. Similarly, one of the most popular instructional design models is called the ADDIE model, short for analysis, design, development, implementation, and evaluation (Siemens, 2002).

However, there are many other models available from the six different categories of instructional design. Other more common models Siemens (2002) mentions are:

- Algo-Heuristic – Suggests that all cognitive activities can be analyzed into operations of an algorithmic, semi-algorithmic, heuristic, or semi-heuristic nature. Once discovered, these operations and their systems can serve as the basis for instructional

strategies and methods. The theory specifies that students be taught not only knowledge but the algorithms and heuristics of experts as well.

- Dick and Carey Model – Prescribes a methodology for designing instruction based on a reductionist model of breaking instruction down into smaller components. Instruction is specifically targeted on the skills and knowledge to be taught and supplies the appropriate conditions for the learning of these outcomes.
- Robert Gagné's Instructional Design Model – Gagné's approach to instructional design is considered a seminal model that has influenced many other design approaches and particularly the Dick & Carey systems approach. Gagné proposed that events of learning and categories of learning outcomes together provide a framework for an account of learning conditions.
- Minimalism – The theory of J.M. Carroll is a framework for the design of instruction, especially training materials for computer users. 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) instruction 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.
- Kemp, Morrison, and Ross Nine step instructional design model.
- Rapid Prototyping – Generally, rapid prototyping models involve learners and/or subject matter experts interacting with prototypes and instructional designers in a continuous review/revision cycle. Developing a prototype is practically the first step,

while front-end analysis is generally reduced or converted into an on-going, interactive process between subject matter, objectives, and materials.

- Epathic Instructional Design – 5-step process: Observe, capture data, reflect and analyze, brainstorm for solutions, develop prototypes.

Choosing an instructional design model to use is completely up to the user and the problem they are trying to solve. According to Ryder (2009), "the value of a specific model is determined within the context of use. Like any other instrument, a model assumes a specific intention of its user."

Section Summary

The discipline of project management has been practiced for many years and continues to constantly grow today. While there are many companies who utilize their own methodologies, there are also many general ones, some of which are becoming regional standards. In the United States, PMI's Project Management Body of Knowledge has become the forerunner. With the fourth release of PMI's *PMBOK Guide* approaching the release date, and having over 265,000 members worldwide, PMI has proven the strength of their organization. With the development of PMOs, software packages like Microsoft Project and usage of a WBS, many project managers are moving projects along more efficiently. Adding other methods, such as Six Sigma, into the project management process assures quality as well.

To implement project management into a curriculum, it is necessary to first assess the curriculum as it currently is. Curriculum assessment is a process that can run on many levels. Within a program, such as VCT, learning outcomes for the students must be developed and measured with an evaluation tool. To create learning outcomes, the researcher must first understand the different ways people learn, and be knowledgeable of the three perspectives and

theories of learning. This understanding gives the researcher the ability to form beneficial recommendations for all learners in the program. It is also necessary for the researcher to understand the line between instructional design and project management as their models may seem similar, yet are very different.

SECTION II. PROCEDURES

Restatement of the Problem

Most students within the VCT program at BGSU spend a majority of their classes in a lab environment working on projects. The students' projects are completed both on an individual and team basis with other members of their classes. Both of these project completion methods require a student to use some form of project management to get from the initialization to the completion of a project, which will be essential in their future professions as well. While some classes do touch on project management, a more structured, systematic approach may be needed for the undergraduate students in this major.

Restatement of Project Objectives

1. Identify learning outcomes related to project management being taught in VCT.
2. Explore the benefits of teaching different models of project management in different courses throughout the VCT program.
3. Develop an action plan to continue implementing, to integrate, or to increase visibility of project management within the VCT program.

Research and Development Procedure

Based on research of project management, the procedure that was followed in this study was the Project Management Institute's five project processes and nine knowledge areas specified in *A Guide to the Project Management Body of Knowledge*. This methodology was chosen because it is the most developed and well-known international model of project management. The following is the methodology for this project broken down into a WBS that is called for in process 2.1 below.

1.0 Initiation Process Group

1.1 Start project

1.2 Create Project Charter (Appendix B)

1.3 Create Project Scope Statement (Appendix C)

1.4 Create Project Plan (Appendix D)

2.0 Planning Process Group

2.1 Create WBS

2.2 Define, Sequence, and Estimate Duration of Activities – (See *Timeline for Completion of Study* on p. 27)

2.3 Quality Planning – Quality was maintained by having the project document reviewed by other sources than the project manager (i.e. Major Project committee).

2.4 Communications Planning – Communication was maintained by having open lines between the project manager and the project stakeholders.

2.5 Risk Management Planning – Risk management was completed by identifying risks that could arise during the course of this project (i.e. Realization that this study could find no changes need to be made to the curriculum).

3.0 Executing Process Group

3.1 Receive College of Technology approval of Major Project topic and proposal

3.2 Complete project management review and software review

3.3 Visit VCT program meeting to announce and explain interviews

3.4 Prepare checklist and script for interviews

3.5 Gather data interviewing current VCT faculty.

3.6 Steps to complete Section III of Major Project

3.6.1 Explain what the project was

3.6.2 Explain how the project was conducted

3.7 Steps to complete Section IV of Major Project

3.7.1 Explain the results of the project

3.7.2 Identify if proposed objectives were met

3.7.3 Give recommendations for further study

3.8 Submit document to Major Project Committee for review

3.9 Defend Major Project

3.10 Submit error-free copy of Major Project with signatures to COT Graduate Office

3.11 Graduate

4.0 Monitoring and Controlling Process Group

4.1 Keeping the project on schedule – This was done by using Microsoft Project 2007 software to set project tasks and checkpoints throughout the project.

4.2 Manage Stakeholders – This was done by keeping the stakeholders informed of project progress to maintain their interest in the project.

4.3 Resolving issues/concerns – This was maintained by being prepared for scope creep, which is the addition of "features and functionality (project scope) without addressing the effects on time, costs, and resources, or without customer approval" (Project Management Institute, 2008, p. 440).

5.0 Closing Process Group

5.1 Close Project

Timeline for Completion of the Study

- December 15, 2008 – Last day to receive College of Technology approval of Major Project topic and proposal
- December 2008 – Complete PM review and software review
- January 2009 – Visit VCT program meeting to announce and explain interviews
- January 2009 – Prepare checklist and script for interviews
- February 2009 – Gather data by conducting interviews/surveys
- March 3, 2009 – Complete Section III
- March 10, 2009 – Complete Section IV
- April 9, 2009 – Submit document to Major Project Committee for review
- April 16, 2009 – Defend Major Project
- April 20, 2009 – Submit error-free copy of Major Project with signatures to COT Graduate Office
- May 8, 2009 – Graduate

Evaluation Procedure

To meet the proposed objectives of this project, personal interviews with all of the Visual Communication Technology faculty members were conducted. During these interviews, it was proposed a checklist should used to ensure consistency between interviews and assist in obtaining the project objectives by recording qualitative and quantitative data. Select items on the checklist needed further explanation; therefore it was proposed that follow-up questions would also be asked to assist in discovering any gaps or overlaps of project management being taught in the VCT curriculum. The subjects also provided a list of definitions that corresponded

with the wording used in the checklist. The checklist, questions, and definitions would all be developed based on the *PMBOK Guide,* as it was the methodology chosen for this project.

Section Summary

This proposed project was structured around the *PMBOK Guide* methodology. This methodology was chosen because it would also serve as the base for the evaluation aspect of this study. An interview with each VCT faculty member based on a checklist created by the researcher was proposed as the evaluation tool. Along with the checklist, a list of terminology and definitions would also be provided to the subjects being interviewed. All of the procedures that needed to be completed to finish this study were formed based on the timeframe in which the researcher would finish graduate school.

SECTION III. METHODOLOGY

This section states the methodology used to evaluate the status of project management in the Visual Communication Technology program at Bowling Green State University.

Restatement of Project Objectives

1. Identify learning outcomes related to project management being taught in VCT.
2. Explore the benefits of teaching different models of project management in different courses throughout the VCT program.
3. Develop an action plan to continue implementing, to integrate, or to increase visibility of project management within the VCT program.

Description

The initial phase of this project started with the researcher's interest in completing projects in a timely and structured manner. With the PMI on the verge of releasing the fourth edition of the *PMBOK Guide*, his interest about PMI's leading methodology and the project management discipline continued to grow. From completing an undergraduate degree in VCT, the researcher also understood how important project management is to the VCT program. Upon further conversations with his advisor and committee, it was decided that a study on project management in the VCT program would be beneficial to the future of the program. It was also decided that completing this project while utilizing PMBOK methodology would also greatly benefit the researcher and his knowledge of the discipline. To use the PMBOK methodology, the researcher prepared the Work Breakdown Structure presented in Section II to breakdown the jobs and tasks needed to be completed.

Development

The initial development of this study was based on personal interest, the expressed interest from faculty in the VCT program, a literature review, and research. The research conducted for this project was based on project management methodologies, project management software, how people learn, curriculum assessment, and instructional design. The research was completed to give the researcher the ability to evaluate a higher-education program against a project management methodology.

Once the research was completed, an evaluation checklist (Appendix E) was created based on the project management processes in the *PMBOK Guide*. The researcher used the checklist in face-to-face interviews with each VCT faculty member. The checklist was used to keep the evaluation unbiased and consistent between each interview. Overall, 15 faculty members were interviewed over the 21 VCT courses currently being taught. To start the interviews, an introduction explaining the study (Appendix F) to the subjects was read. Questions stated on the checklist were then asked in subsequent order. Because some of the terminology used in the *PMBOK Guide* may have been unfamiliar to the subjects, a terminology and definitions list (Appendix G) was provided to each subject. In the event of subjects asking questions, the researcher further explained by creating an example relative to the subject's field.

After the interviews were conducted the results were analyzed and put into graphs for better understanding. Those graphs are included in Section IV of this document with explanations for each. Based on the last object of this study, an action plan for project management in the VCT program has also been developed.

Section Summary

The methodology of this study was developed by research completed in project management methodologies and software, how people learn, curriculum assessment, and instructional design. A checklist evaluation was chosen to keep the study unbiased and consistent to record learning outcomes of project management in the VCT program. The checklist was based on the *PMBOK Guide's* methodology. At the conclusion of this evaluation and study, an action plan for project management in the VCT program was developed.

SECTION IV. RESULTS

Findings

The checklist interviews yielded qualitative data that is shown and explained in this section in two forms; data that was put into the figures, and data expressed when the subjects were asked to identify what project management model they follow and what project management tools they utilize if they answered 'yes' to the antecedent questions of the interview. An answer of 'yes' to any question meant that the students were completing that aspect of project management in the course, while an answer of 'no' meant that aspect of project management was not being utilized. If the subject answered 'NA,' they did not know if the students were performing the aspect of project management being questioned. The following responses were recorded when the subjects were asked to name the specific model of project management they teach and/or follow: VCT Workflow, ADDIE Model, PERT, and site mapping. The following responses were recorded when the subjects were asked to name the specific project management tools they use: Inspiration, Gantt charts, Basecamp, job estimating, timelines, Open Workbench, and Google Calendar.

When analyzing the total responses received in the checklist, as shown in Figure 1, it is evident that project management is partially being utilized in the VCT curriculum. However, any substantial facts cannot be concluded without looking at the responses more in depth.

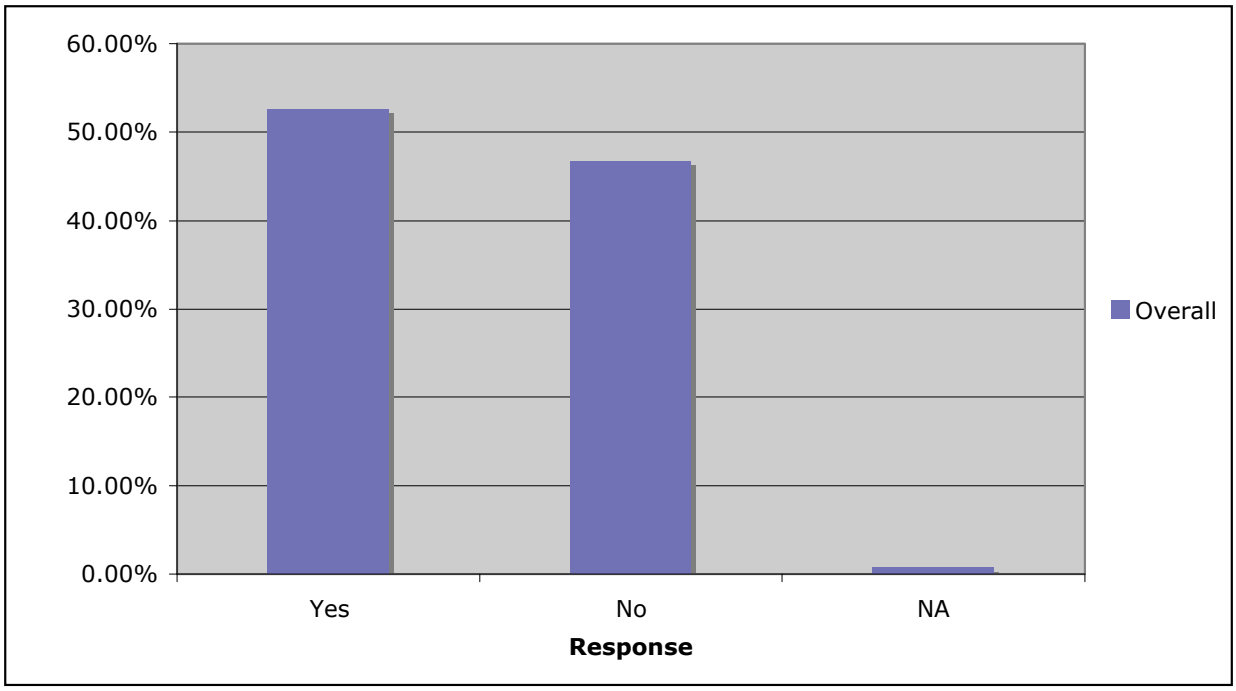

Figure 1. Total Percentages of Responses
The total percentages of how many VCT faculty members answered 'Yes,' 'No,' or 'NA' to all of the questions asked during the checklist interviews.

The researcher broke the responses down further by using the *PMBOK Guide's* five project processes (Figure 2). The planning, executing, monitoring and controlling, and closing phases were all similar to the overall responses. However, the initiating phase shows a more definite gap between the three possible responses.

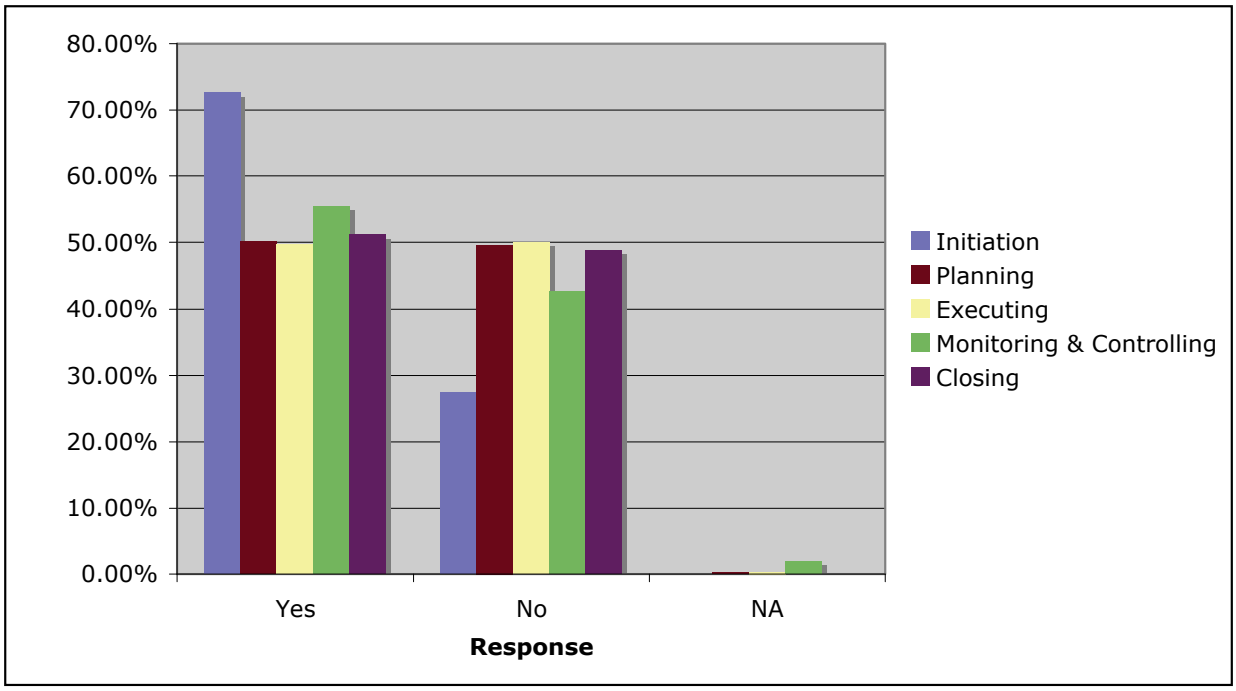

Figure 2. Total Percentages of Responses for *PMBOK Guide* Phases
The total percentages of how many VCT faculty members answered 'Yes,' 'No,' or 'NA' to the questions asked during the checklist interviews broken into the five phases of the *PMBOK Guide* methodology.

While Figure 2 did show the initiating phase was skewed to the right, overall nothing significant can be proven from these results. Using the *PMBOK Guide's* nine knowledge areas to view the results (Figure 3), project integration, scope, time, quality, and communications management are being utilized in the curriculum. Where as, project cost, human resource, risk, and procurement management are barely being employed.

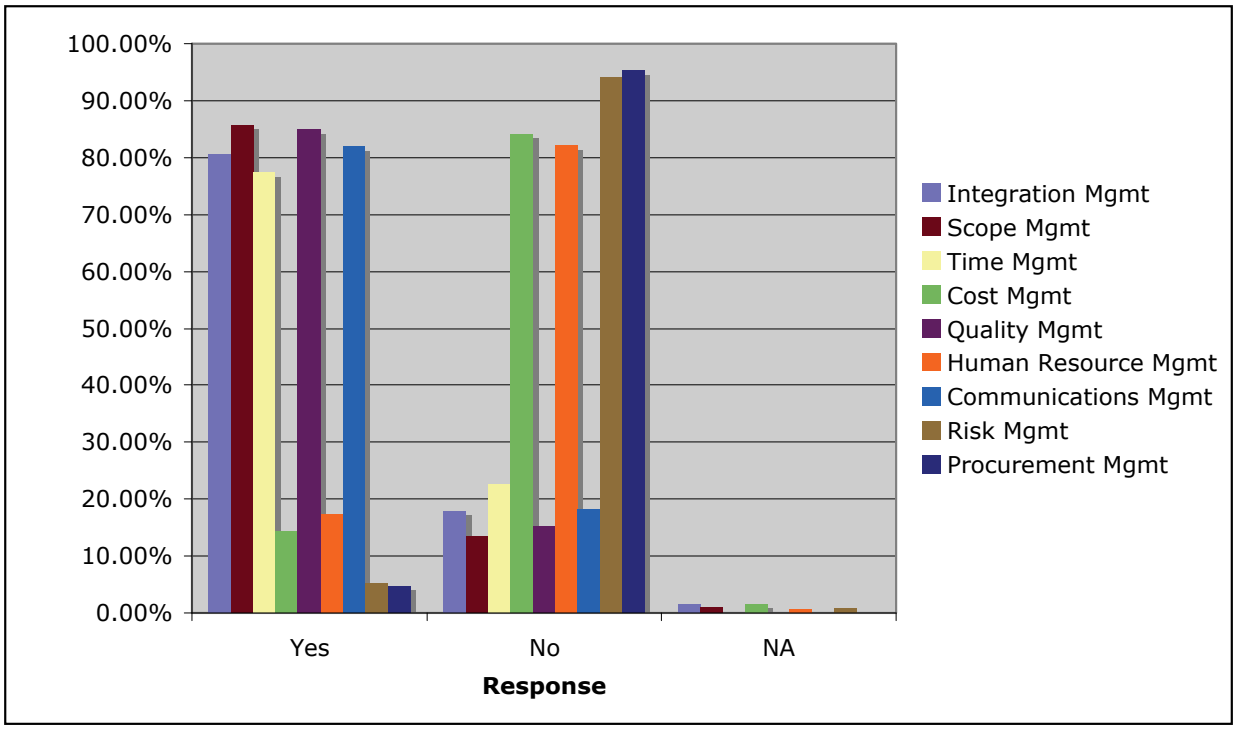

Figure 3. Total Percentages of Responses for *PMBOK Guide* Knowledge Areas
The total percentages of how many VCT faculty members answered 'Yes,' 'No,' or 'NA' to the questions asked during the checklist interviews broken into the nine knowledge areas of the *PMBOK Guide* methodology.

To further analyze the data, the researcher chose to divide the responses into the core courses a student must take in the VCT program to graduate, and the four VCT program tracks: print, video, interactive media, and photography (Figure 4). However, relative to responses from Figure 1 and Figure 2, Figure 4 shows that the responses to both 'yes,' 'no,' and 'NA' are again almost equal.

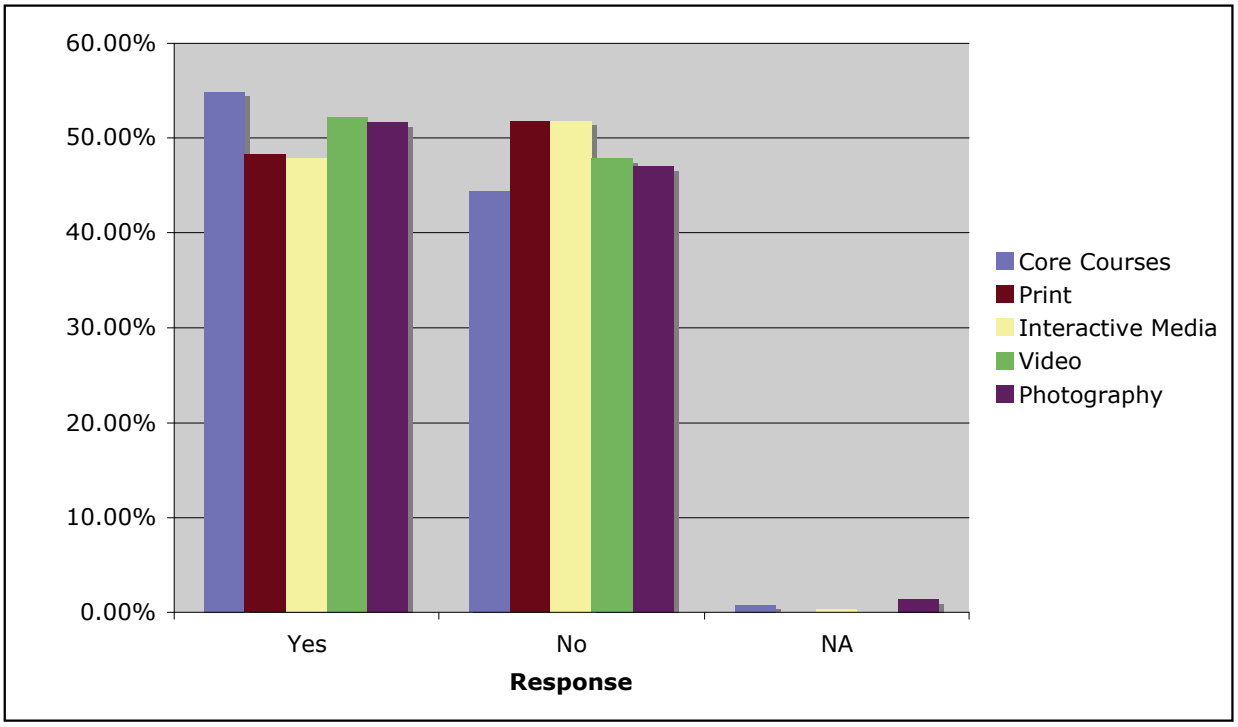

Figure 4. Total Percentages of Responses for VCT Program Tracks & Core Courses
The total percentages of how many VCT faculty members answered 'Yes,' 'No,' or 'NA' to the questions asked during the checklist interviews broken into the four tracks and core courses of the VCT program.

As an objective of this study was to explore the benefits of teaching different models of project management in different courses throughout the VCT program, the researcher felt it necessary to view the responses based on the different course levels (Figure 5). The responses between 'yes,' 'no,' and 'NA' were almost equal. However, something to note would be the 'yes' response for the 300 level courses slightly drops from the 100 and 200 level courses, before rising again for the 400 level courses.

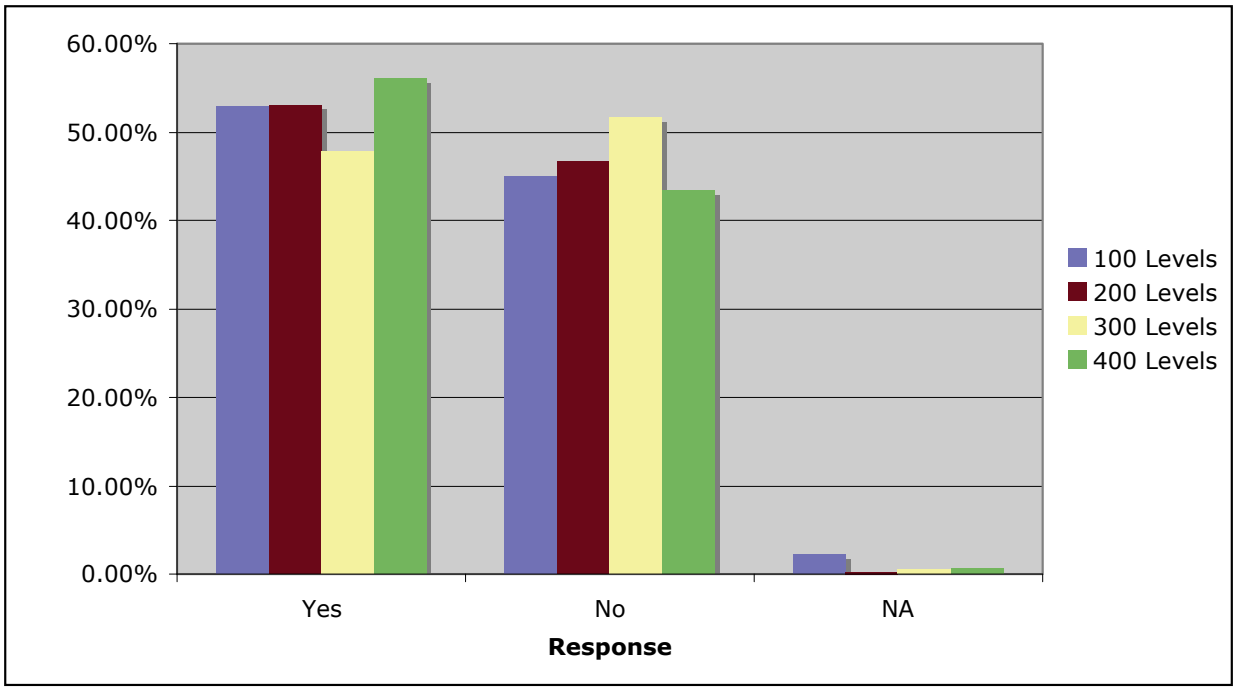

Figure 5. Total Percentages of Responses for VCT Course Levels
The total percentages of how many VCT faculty members answered 'Yes,' 'No,' or 'NA' to the questions asked during the checklist interviews broken into the four levels of courses in the VCT program.

Conclusions and Implications

This study has proven that the VCT program at BGSU is teaching many positive aspects of project management. The variety of project management tools being utilized shows that students do have the opportunity to explore many ways to manage a project successfully. However, the fact that faculty members are using the VCT Workflow and the ADDIE model for project management also shows that instructional design is being cross-referenced with project management. Site mapping is also being misplaced into the project management category, when it should be used in instructional design to brainstorm how to create a project, unless it integrates some form of project completion tracking, which, in this instance, it does not.

By viewing Figure 3, it is evident which aspects of project management are lacking in the VCT program: cost, human resource, risk, and procurement. For further supporting evidence of

this, the researcher viewed each individual question and the responses for each (Appendix H). To understand the data in Appendix H, the researcher gave each response a value of one for each class. If two VCT faculty members taught the same class, the value used was .5 for each of their responses so that the total for the class was still one. Looking at these results, it was evident that anything dealing with risks, costs, and procurements had very low learning outcomes. It was also evident that not many classes do group projects in an organized manner, as many of the project team questions were answered 'no.' The *PMBOK Guide* recognizes project team related processes as human resource management, thus confirming the results in Figure 3 are accurate of where the VCT program currently stands.

A problem found while completing the evaluation was a response to the question that asked if students created a project charter. Notes recorded by the researcher during the interviews show that every faculty member who answered 'yes' to developing a project charter mentioned that they created proposals. By definition, proposals are "an act of putting forward or stating something for consideration" (Merriam-Webster, 2009). According to Project Management Institute (2008), a project charter is "the process of developing a document that formally authorizes a project or a phase and documenting initial requirements that satisfy the stakeholder's needs and expectations" (p.45). This proves that the answers of the initiating phase were misleading as proposals are used for project consideration, and project charters are a binding contract that all stakeholders and the project manager must sign for the project to begin.

Project Objective Results

Objective one was met by completing a checklist evaluation of the VCT faculty members. The results have shown that there are both positives and negatives in terms of project management being taught in the VCT program. The positives being that many project

management tools, even some of the newer, more web-based ones, are actually being utilized. However, the program is leaving out some of the major parts of project management as well. Hardly teaching the students about risks, budgeting, and procurements is hindering them from fully understanding the project management discipline. Another negative that was discovered was the cross-referencing between instructional design models and project management models, as well as proposals and project charters.

Objective two was met by completing objective one and then viewing the responses based on the course levels. Project Management, being almost similar over all course levels, shows that all classes benefit from some form of the discipline. However, project management is something that should build on scaffolding in each track. Having the basic concepts and terminology taught in the 100-level courses would benefit every VCT student. A 200 level course that all VCT students would take before matriculating would be a place to get more in depth with the phases of the project life cycle, and also more involved with the planning and monitoring and controlling. This would give the students a solid foundation to carry project management into their VCT tracks. From there, students could go further in depth with the areas of project management that best fit within their tracks.

To meet objective three, an action plan has been developed (Appendix I). To explain the action plan, the VCT program should choose a project management methodology to use to keep everything consistent between the classes. The researcher recommends having a lecture on project management in VCT 103 defining what the project life cycle and project phases are. In VCT 204, the researcher recommends a multi-week series of lectures that involve the processes of the project management methodology the VCT program chooses. This would prepare the students by having a general awareness of the aspects required to manage a project before they

move into their tracks. VCT 204 would also be an appropriate class to educate the students on the different project management methodologies and tools available.

When the students enter their tracks, the researcher recommends that this is when many of the gaps not currently being taught should be introduced by educating the students on project risk, costs, and human resource management at all of the 300 level courses, specific to the tracks and their industries. Since many of the 400 level courses use actual clients, educating the students on procurements at this time would be beneficial, as they may start using outside contractors. Also, allowing students to use classmates as procurements should be considered.

The possibility of also forming a 400 level course strictly on project management should also be considered. Such a course could go through each process of project management and view the actual inputs, tools and techniques, and outputs of each. As many graduate schools have project management programs, the researcher recommends giving the VCT students the opportunity to take a course prior to graduating that prepares them for this type of graduate program.

Also, the VCT faculty members need to be further educated on project management so they can educate others interested in the discipline as well. From the current knowledge of project management they already have, teaching faculty the differences between instructional design and project management methodologies, as well as project charters and proposals is a good starting point. Making them aware of the project management methodologies and tools available for them to use in their classes would be beneficial as well.

Recommendations for Further Study

Since this study has identified that project management in the VCT program could use a more structured and consistent approach, a possible further study would be to redesign VCT

courses to fully utilize project management. If the program were to add a 400 level project management class, that class would need to be designed as well. If project management is placed more into the program, a follow-up evaluation in future semesters could also be done to see how effective the implementation of project management into the program was.

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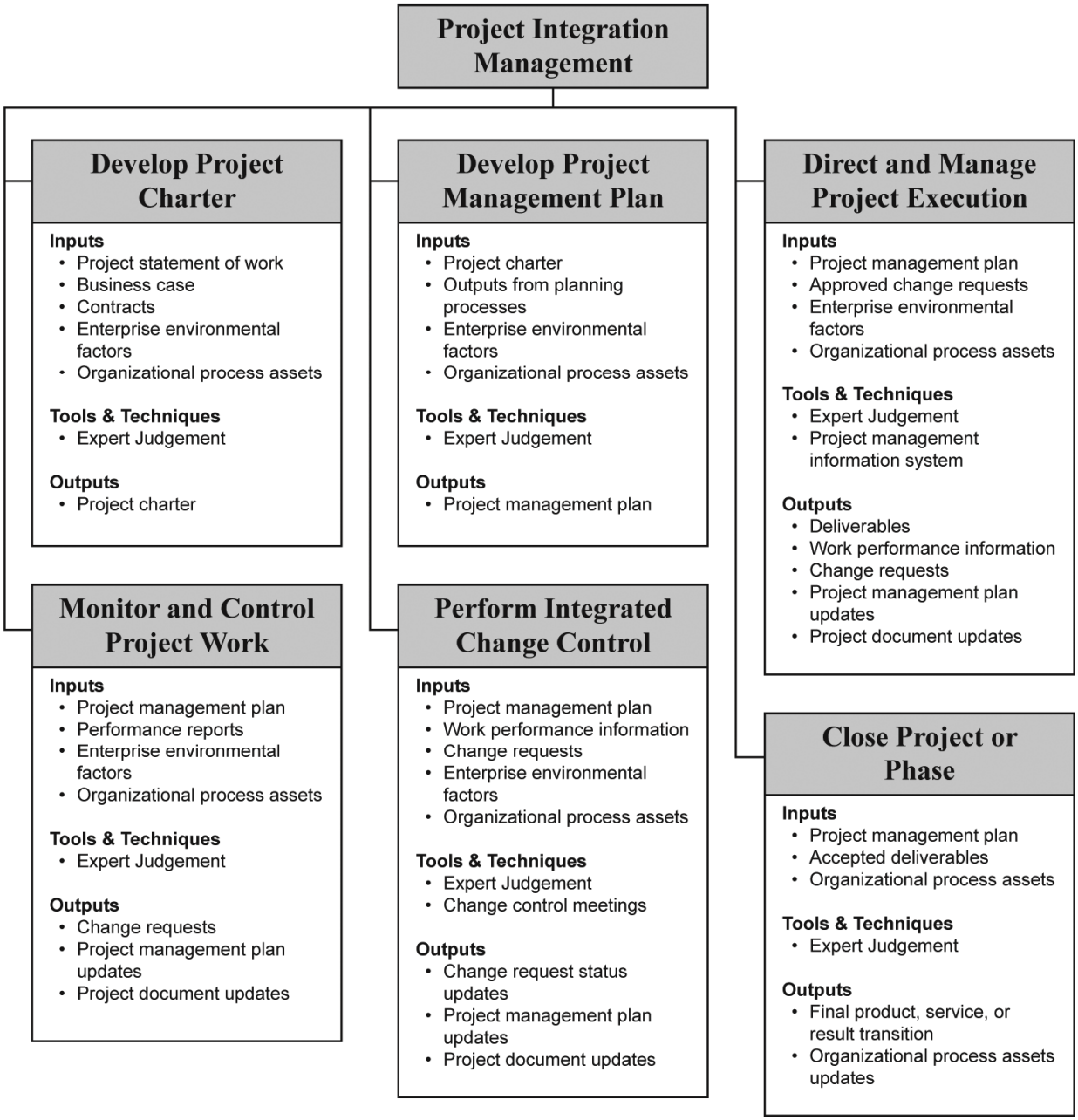
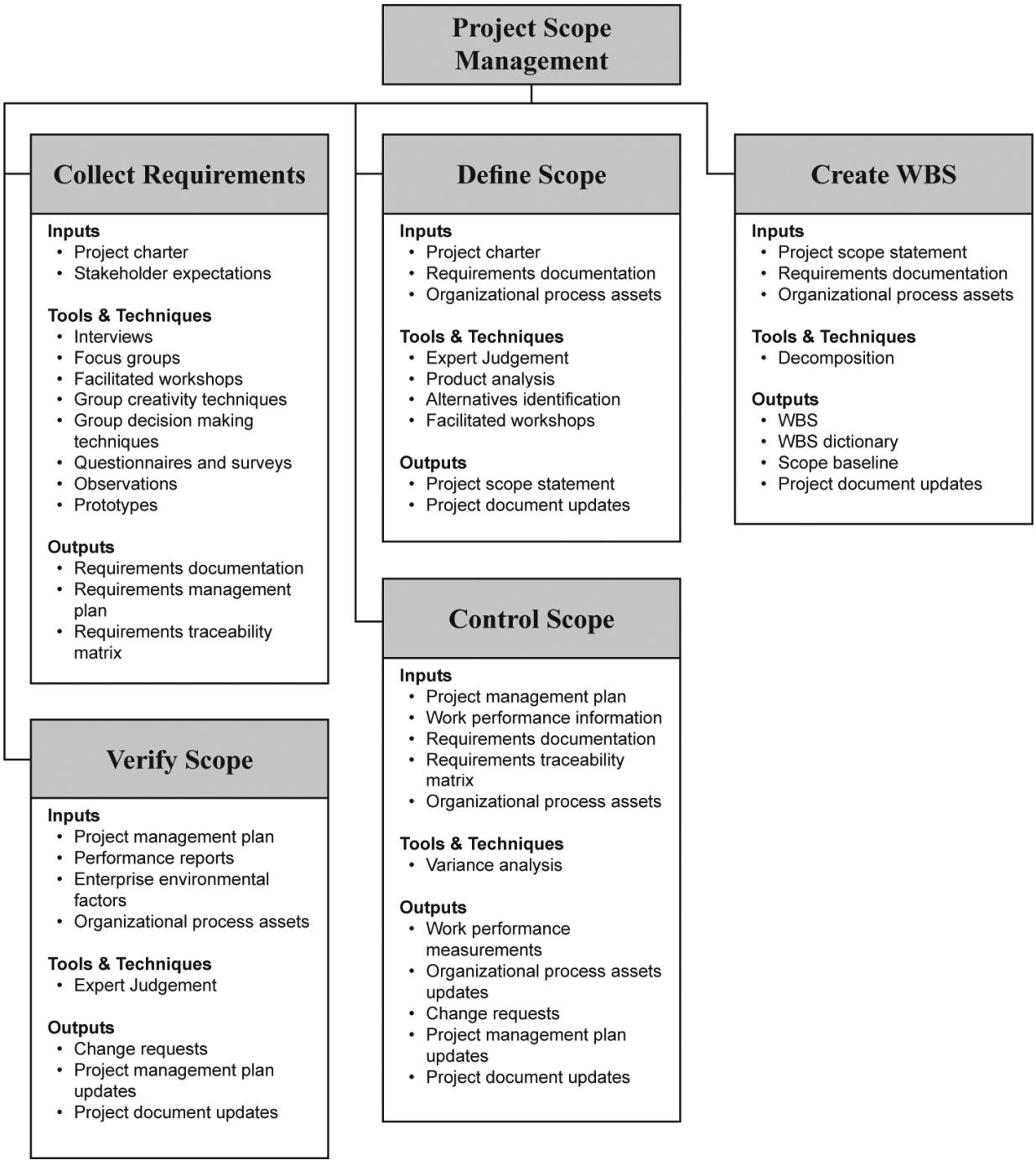
APPENDIX A: PROCESS INPUTS, TOOLS & TECHNIQUES, AND OUTPUTS

(Project Management Institute, 2008)

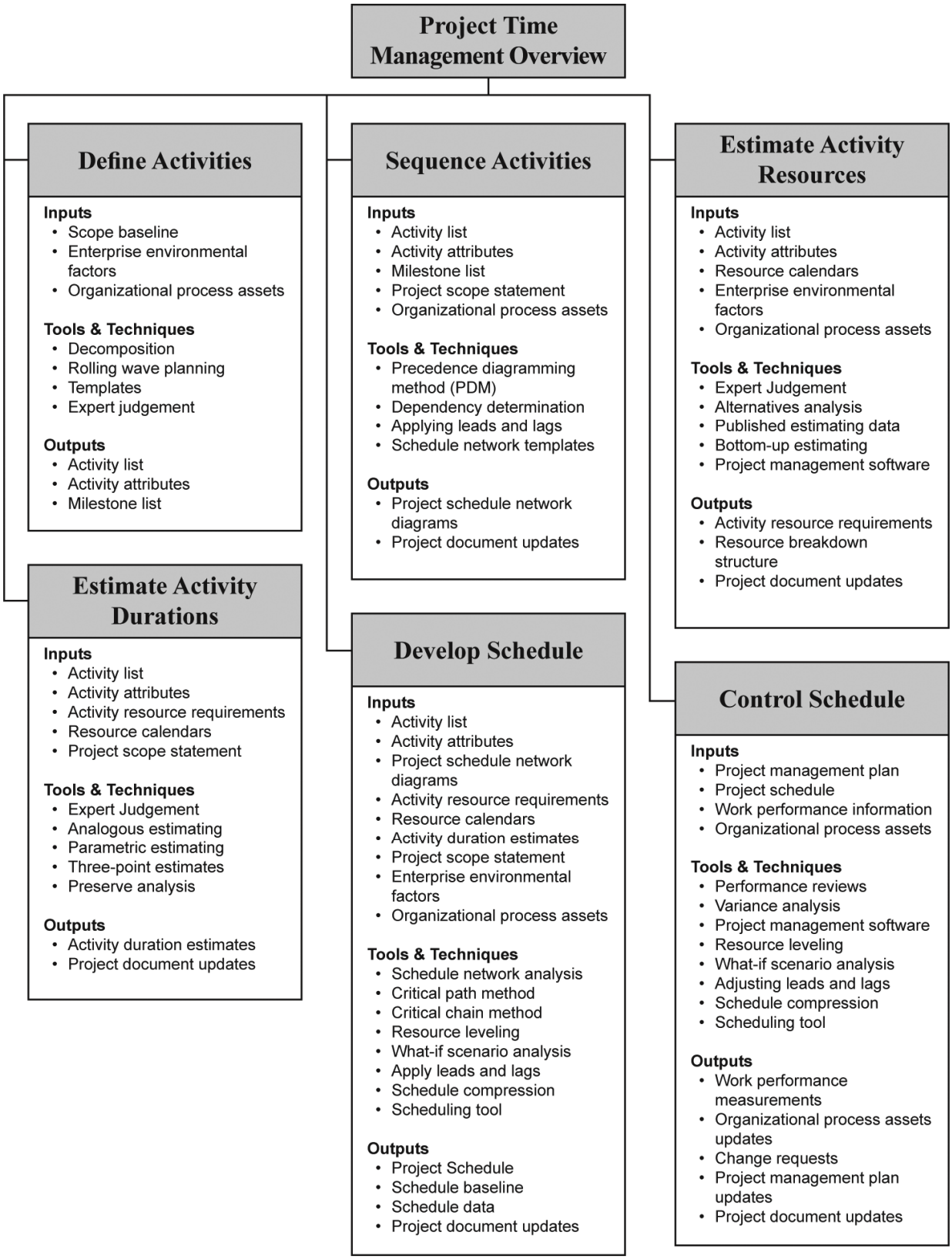
Project Integration Management



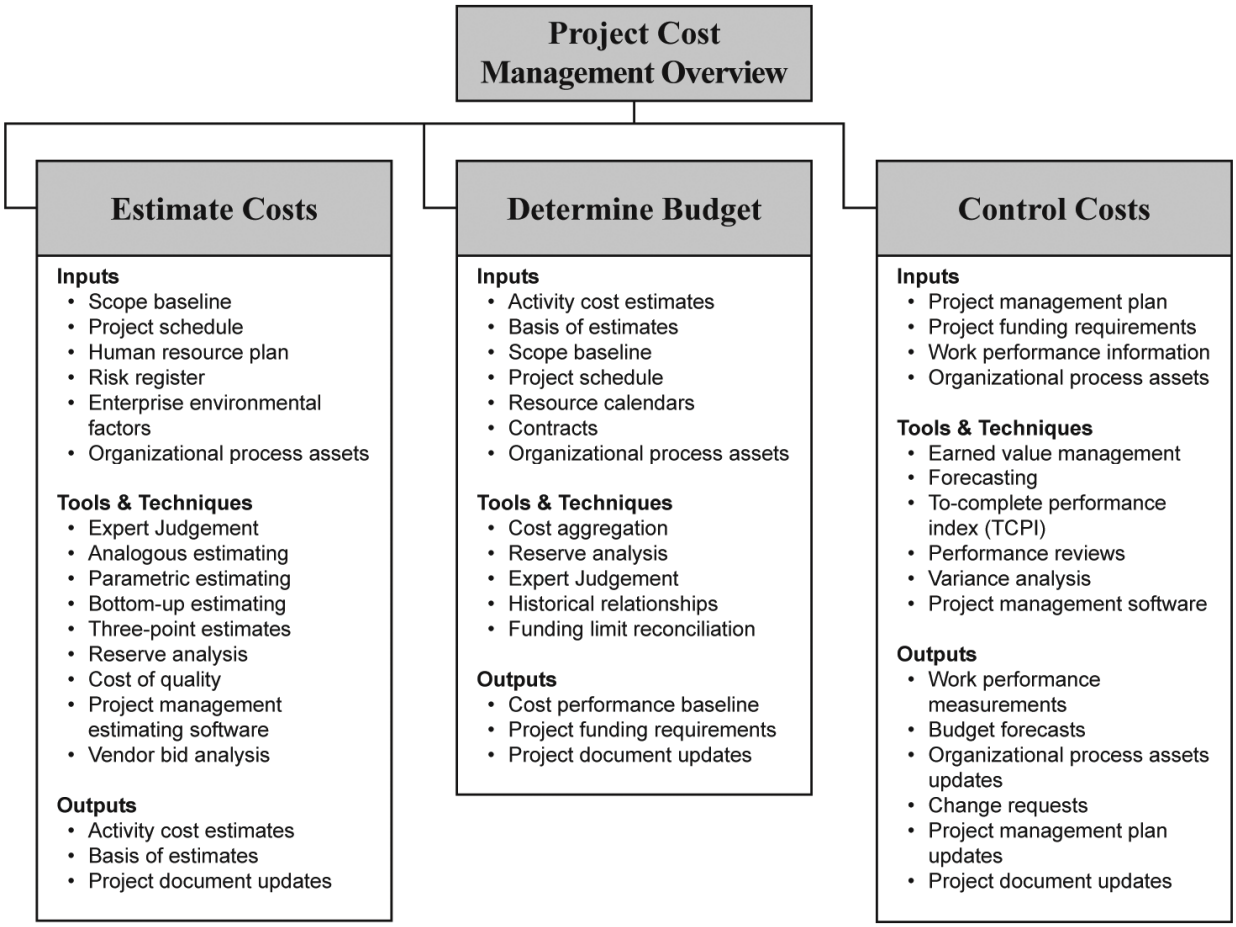
Project Scope Management



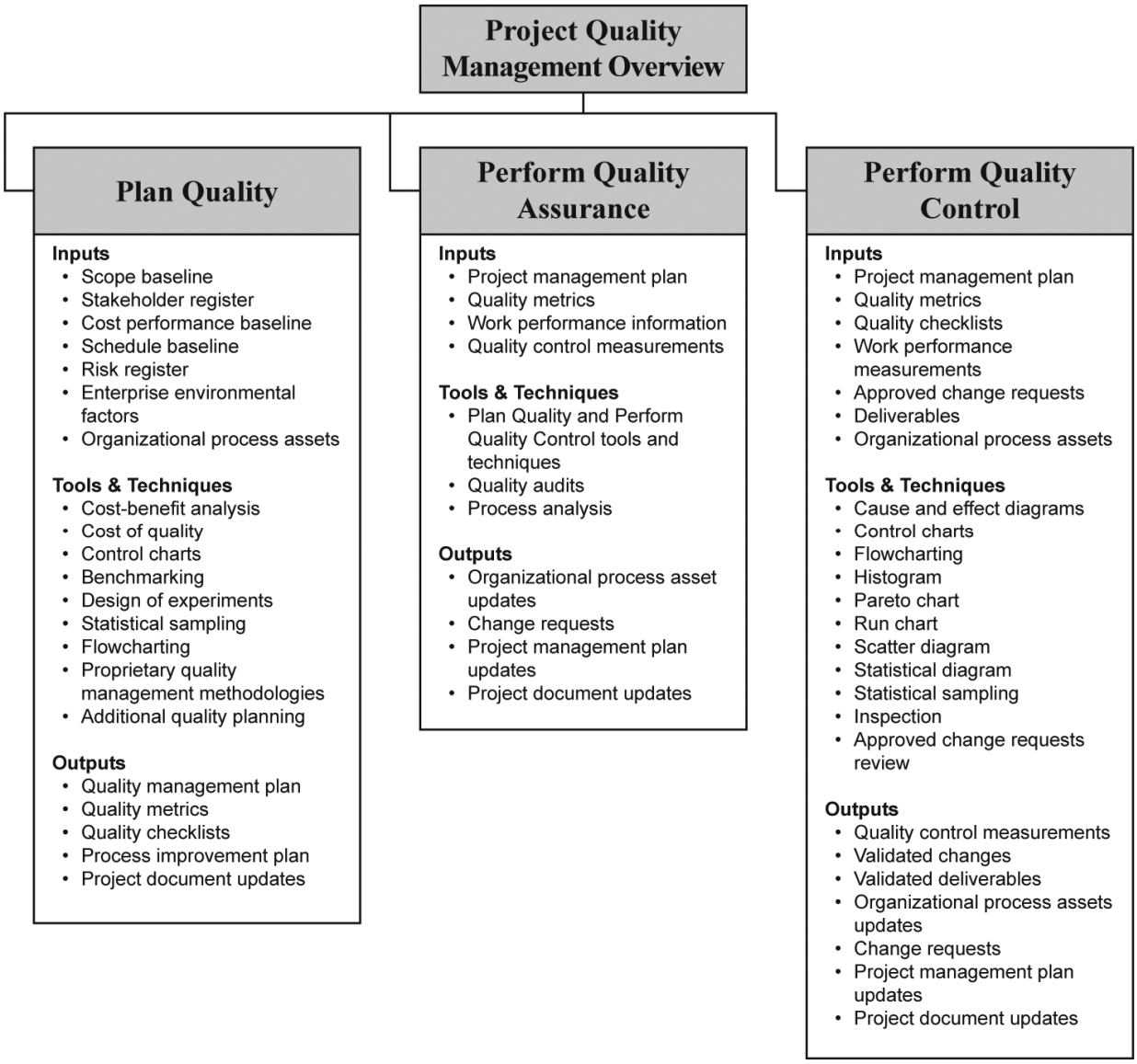
Project Time Management Overview



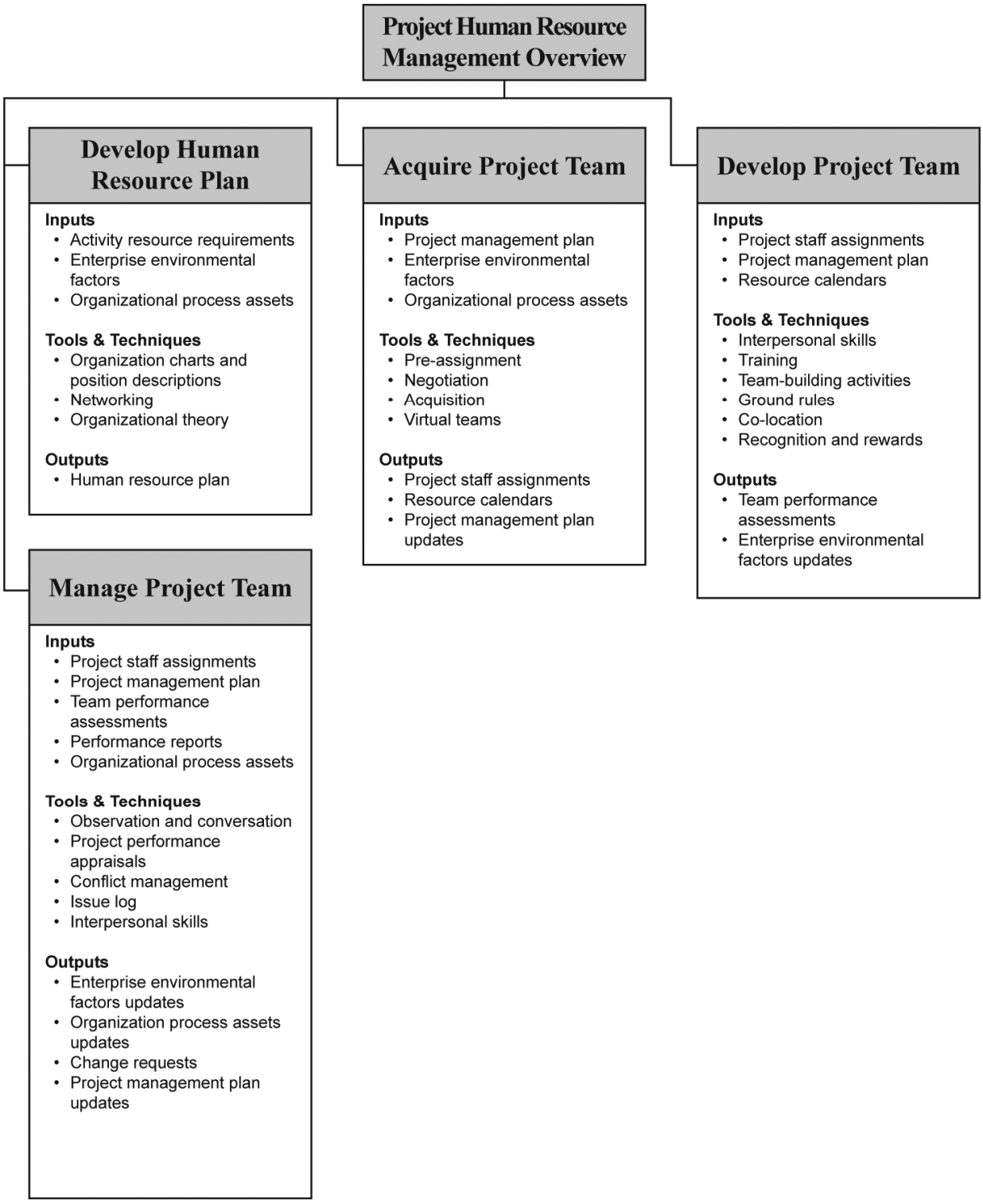
Project Cost Management Overview



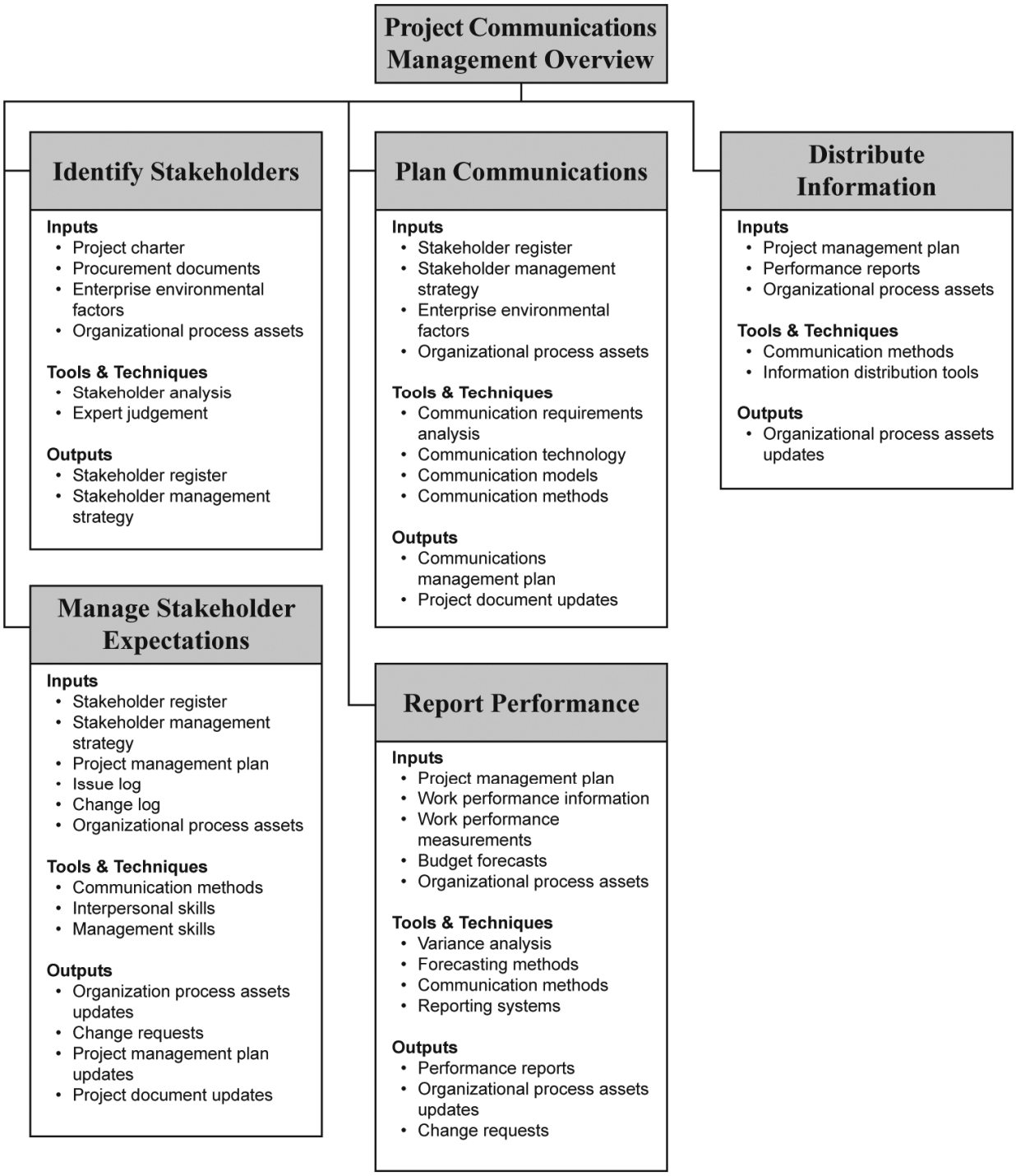
Project Quality Management Overview



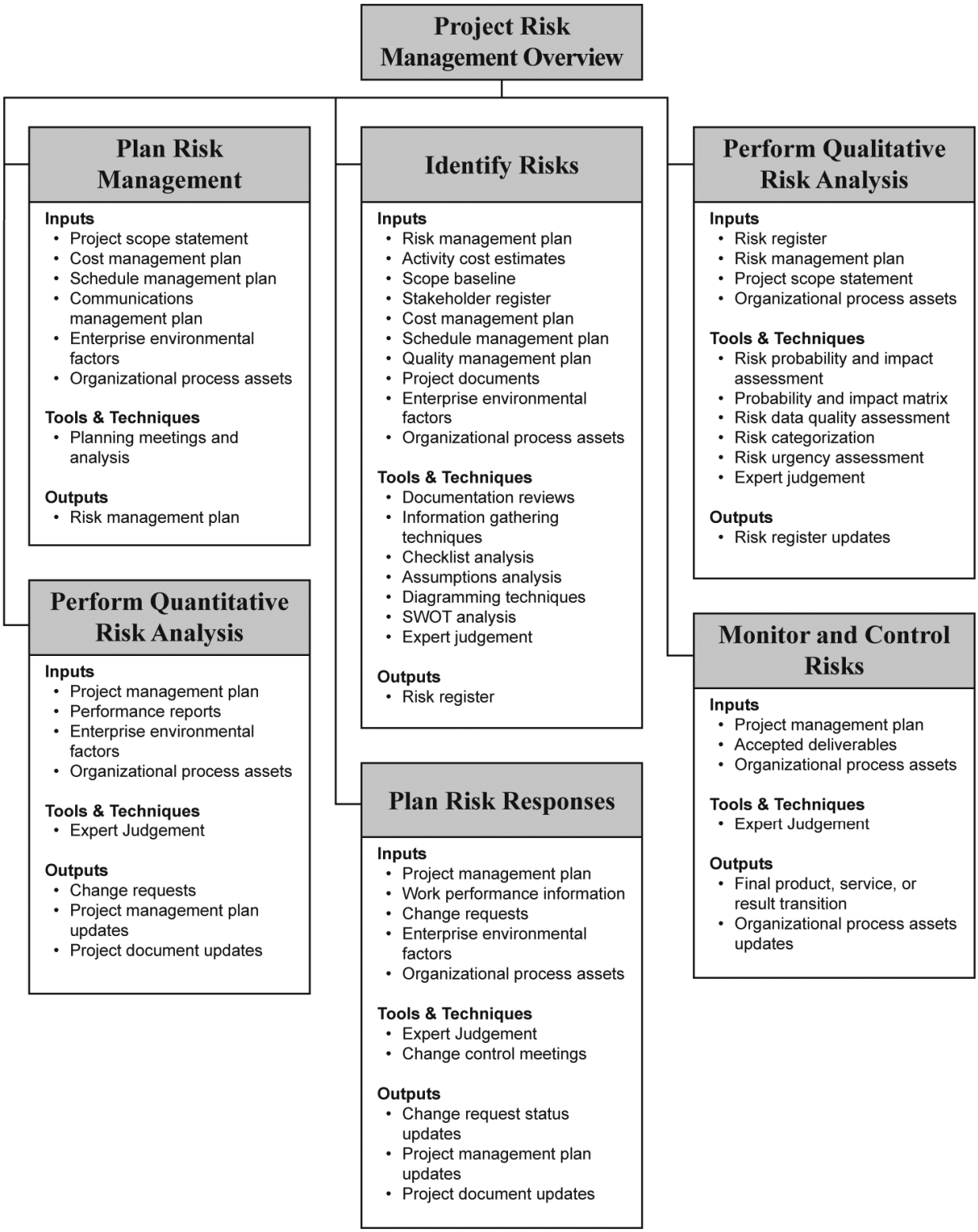
Project Human Resource Management Overview



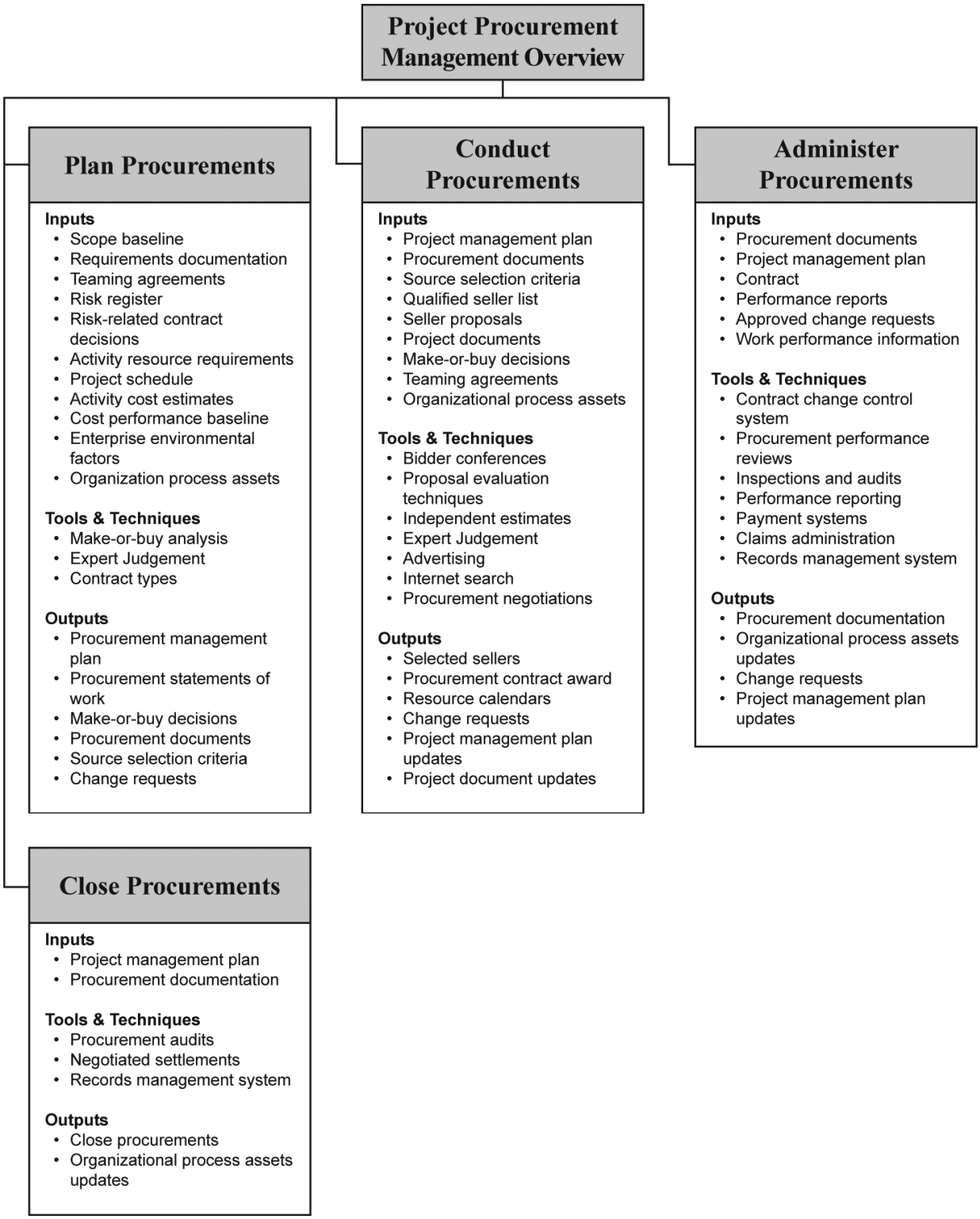
Project Communications Management Overview



Project Risk Management Overview



Project Procurement Management Overview



APPENDIX B: PROJECT CHARTER

Project Title: The Status of Project Management in the Visual Communication Technology Curriculum at Bowling Green State University.

Project Start Date: August 2008 **Project Finish Date:** May 2009

Budget Information: The opportunity to receive up to $150 from the College of Technology at Bowling Green State University is present. However, being for school, this project does not have a set budget. The only costs will be the purchasing of books if sources cannot be found elsewhere.

This project is critical for the future of project management in the Visual Communication Technology (VCT) program. The project will be completed with the highest standards. The data integrity and privacy of faculty interviewed will be protected throughout the project.

Stakeholders:

- Major Project Committee (Terry Herman, Donna Trautman, and Jeff Rybak)

Michael Metzger is assigned as the project Manager.
As the project's stakeholders, your signature below indicates that you support the initiative as well as the schedule and budget.

Major Project Committee:

Print Name: Signature:

Date: Title:

Print Name: Signature:

Date: Title:

Print Name: Signature:

Date: Title:

APPENDIX C: PROJECT SCOPE STATEMENT

Project Title: The Status of Project Management in the Visual Communication Technology Curriculum at Bowling Green State University.

Project Start Date: August 2008 **Project Finish Date:** May 2009

Project Goal: Discover the current project management status in the Visual Communication Technology (VCT) program at Bowling Green State University (BGSU).

Description of All Objectives, Characteristics, or Requirements:

1. Identify learning outcomes related to project management being taught in VCT.
2. Explore the benefits of teaching different models of project management in different courses throughout the VCT program.
3. Develop an action plan to continue implementing, to integrate, or to increase visibility of project management within the VCT program.

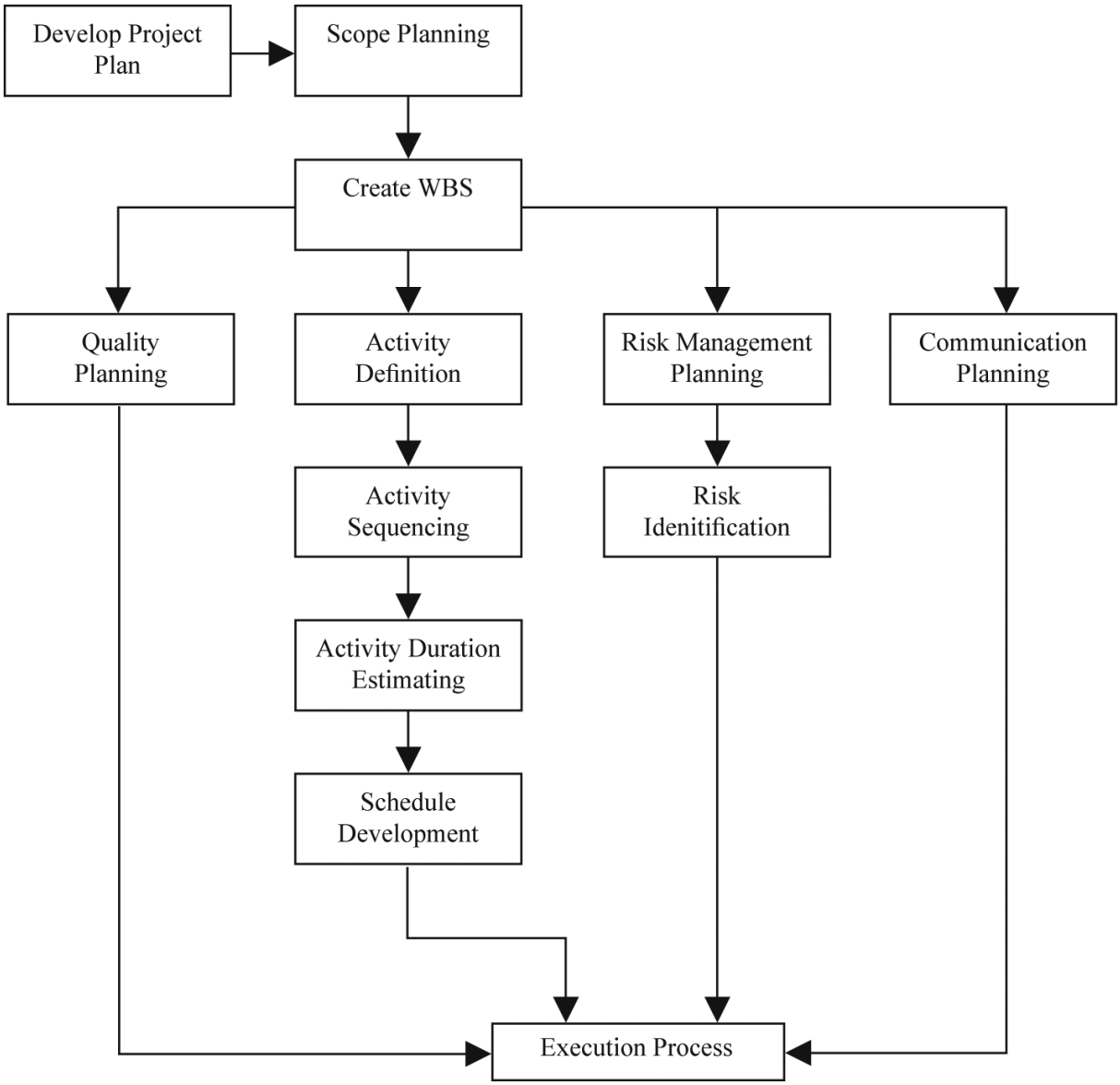
Project Justification: Most students within the VCT program at BGSU spend a majority of their classes in a lab environment working on projects. The students' projects are completed both on an individual and team basis with other members of their classes. Both of these project completion methods require a student to use some form of project management to get from the initialization to the completion of a project, which will be essential in their future professions as well. While some classes do touch on project management, a more structured, systematic approach may be needed for the undergraduate students in this major. A study of the curriculum will possibly show that there are gaps, as well as overlaps, of project management being taught that need to be corrected.

Known Issues, Risks, and Obstacles: The possibility that the current curriculum is already providing enough project management knowledge to the students.

Assumptions: There are project management gaps and overlaps in the current VCT curriculum.

Project Success Criteria: The goal is to complete the project before the middle of April 2009 and within the guidelines stated in the College of Technology Graduate Student Handbook.

APPENDIX D: PROJECT PLAN



APPENDIX E: CHECKLIST

Project Management Evaluation Checklist

What VCT classes do you currently teach?

☐ VCT 103	☐ VCT 208	☐ VCT 266	☐ VCT 268	☐ VCT 282
☐ VCT 104	☐ VCT 308	☐ VCT 366	☐ VCT 369	☐ VCT 382
☐ VCT 204	☐ VCT 309	☐ VCT 482	☐ VCT 469	☐ VCT 460
☐ VCT 467	☐ VCT 310			☐ VCT 465
☐ TECH 480	☐ VCT 456			

GENERAL

Do you teach a lecture/lesson on project management in any of your courses?	☐ Yes	☐ No	☐ NA
If so, do you have a specific model of project management you teach and/or follow?	☐ Yes	☐ No	☐ NA
If so, which model? _____			
Do you utilize any other project management tools (such as Gantt charts) in any of your courses?	☐ Yes	☐ No	☐ NA
If so, which tools? _____			
Do your students initiate, plan, execute, monitor and control, and close projects?	☐ Yes	☐ No	☐ NA

INITIATING - Do your students do the following:

Develop a project charter?	☐ Yes	☐ No	☐ NA
Identify stakeholders?	☐ Yes	☐ No	☐ NA

PLANNING - Do your students do the following:

Develop a project management plan?	☐ Yes	☐ No	☐ NA
Collect requirements?	☐ Yes	☐ No	☐ NA
Define the scope?	☐ Yes	☐ No	☐ NA
Create a breakdown of the tasks that need to be completed?	☐ Yes	☐ No	☐ NA
Define activities?	☐ Yes	☐ No	☐ NA
Sequence activities?	☐ Yes	☐ No	☐ NA
Estimate activity resources?	☐ Yes	☐ No	☐ NA
Estimate activity durations?	☐ Yes	☐ No	☐ NA
Develop schedule?	☐ Yes	☐ No	☐ NA
Estimate costs?	☐ Yes	☐ No	☐ NA
Determine budgets?	☐ Yes	☐ No	☐ NA
Plan quality?	☐ Yes	☐ No	☐ NA
Develop human resource plan?	☐ Yes	☐ No	☐ NA
Plan communications?	☐ Yes	☐ No	☐ NA
Plan risk management?	☐ Yes	☐ No	☐ NA
Identify risks?	☐ Yes	☐ No	☐ NA

Project Management Evaluation Checklist continued

Perform qualitative risks analysis?	☐ Yes	☐ No	☐ NA
Perform quantitative risks analysis?	☐ Yes	☐ No	☐ NA
Plan risk responses?	☐ Yes	☐ No	☐ NA
Plan procurements?	☐ Yes	☐ No	☐ NA

EXECUTING - Do your students do the following:

Direct and manage project execution?	☐ Yes	☐ No	☐ NA
Perform quality assurance?	☐ Yes	☐ No	☐ NA
Acquire a project team?	☐ Yes	☐ No	☐ NA
Develop a project team?	☐ Yes	☐ No	☐ NA
Manage a project team?	☐ Yes	☐ No	☐ NA
Distribute information?	☐ Yes	☐ No	☐ NA
Manage stakeholder expectations?	☐ Yes	☐ No	☐ NA
Conduct procurements?	☐ Yes	☐ No	☐ NA

MONITOR & CONTROLLING - Do your students do the following:

Monitor and control their work?	☐ Yes	☐ No	☐ NA
Perform integrated change control?	☐ Yes	☐ No	☐ NA
Verify the scope?	☐ Yes	☐ No	☐ NA
Control the scope?	☐ Yes	☐ No	☐ NA
Control schedule?	☐ Yes	☐ No	☐ NA
Control costs?	☐ Yes	☐ No	☐ NA
Perform quality control?	☐ Yes	☐ No	☐ NA
Report performance?	☐ Yes	☐ No	☐ NA
Monitor and control risks?	☐ Yes	☐ No	☐ NA
Administer procurements?	☐ Yes	☐ No	☐ NA

CLOSING - Do your students do the following:

Close projects or phase?	☐ Yes	☐ No	☐ NA
Close procurements?	☐ Yes	☐ No	☐ NA

APPENDIX F: INTERVIEW INTRODUCTION

I am currently in the progress of completing a Major Project titled The Status of Project Management in the Visual Communication Technology Program at Bowling Green State University. For this study, a checklist has been prepared to identify learning outcomes related to project management being taught in VCT. This checklist is based on the methodology and standards of the Project Management Body of Knowledge. In addition to the checklist, a list of terminology will be provided to you. However, I welcome any questions you may have and will gladly explain anything in more detail.

After the interviews with all VCT faculty members have been completed, the benefits of teaching different levels of project management in different courses throughout the VCT program will be explored. Dependant upon the needs of the courses, an action plan will be developed to continue implementing, to integrate, or to increase visibility of project management within the VCT program.

Thank you in advance for your participation in this study.

APPENDIX G: CHECKLIST DEFINITIONS

Project Management Evaluation Checklist Definitions

INITIATION PHASE

Develop a project charter – The process of developing a document that formally authorizes a project or a phase and documenting initial requirements that satisfy the stakeholder's needs and expectations.

Identify stakeholders – The process of identifying all people or organizations impacted by the project, and documenting relevant information regarding their interests, involvement, and impact on project success.

PLANNING PHASE

Develop a project management plan – The process of documenting the actions necessary to define, prepare, integrate, and coordinate all subsidiary parts.

Collect requirements – The process of defining and documenting stakeholders' needs to meet the project objectives.

Define the scope – The process of developing a detailed description of the project and product.

Create a breakdown of the tasks that need to be completed (WBS) – The process of subdividing project deliverables and project work into smaller, more manageable components.

Define activities – The process of identifying the specific actions to be performed to produce the project deliverables.

Sequence activities – The process of identifying and documenting relationships among the project activities.

Estimate activity resources – The process of estimating the type and quantities of material, people, equipment, or supplies required to perform each activity.

Estimate activity durations – The process of approximating the number of work periods needed to complete individual activities with estimated resources.

Develop schedule – The process of analyzing sequences, durations, resource requirements, and schedule constraints to create the project schedule.

Estimate costs – The process of developing an approximation of the monetary resources needed to complete project activities.

Determine budgets – The process of aggregating the estimated costs of individual activities or work packages to establish an authorized cost baseline.

Plan quality – The process of identifying quality requirements and/or standards for the project and product, and documenting how the project will demonstrate compliance.

Develop human resource plan – The process of identifying and documenting project roles, responsibilities, and required skills, reporting relationships, and creating a staffing management plan.

Plan communications – The process of determining project stakeholder information needs and defining a communication approach.

Plan risk management – The process of defining how to conduct risk management activities for a project.

Identify risks – The process of determining which risks may affect the project and documenting their characteristics.

Perform qualitative risks analysis – The process of prioritizing risks for further analysis or action by assessing and combining their probability of occurrence and impact.

Perform quantitative risks analysis – The process of numerically analyzing the effect of identified risks on overall project objectives.

Plan risk responses – The process of developing options and actions to enhance opportunities and to reduce threats to project objectives.

Plan procurements – The process of documenting project purchasing decisions, specifying the approach, and identifying potential sellers.

EXECUTING PHASE

Direct and manage project execution – The process of performing the work defined in the project management plan to achieve the project's objectives.

Perform quality assurance – The process of auditing the quality requirements and the results from quality control measurements to ensure appropriate quality standards and operational definitions are used.

Acquire a project team – The process of confirming human resource availability and obtaining the team necessary to complete project assignments.

Develop a project team – The process of improving the competencies, team interaction, and the overall team environment to enhance project performance.

Manage a project team – The process of tracking team member performance, providing feedback, resolving issues, and managing changes to optimize project performance.

Distribute information – The process of making relevant information available to project stakeholders as planned.

Manage stakeholder expectations – The process of communicating and working with stakeholders to meet their needs and addressing issues as they occur.

Conduct procurements – The process of obtaining seller responses, selecting a seller, and awarding a contract.

MONITORING & CONTROLLING PHASE

Monitor and control their work – The processes of tracking, reviewing, regulating the progress and performance of the project, identifying any areas in which changes to the plan are required, and initiating the corresponding changes.

Perform integrated change control – The process of reviewing all change requests, approving changes, and managing changes to the deliverables, organizational process assets, project documents, and the project management plan.

Verify the scope – The process of formalizing acceptance of the completed project deliverables.

Control the scope – The process of monitoring the status of the project and product scope and managing changes to the scope baseline.

Control schedule – The process of monitoring the status of the project to update project progress and managing changes to the schedule baseline.

Control costs – The process of monitoring the status of the project to update the project budget and managing changes to the cost baseline.

Perform quality control – The process of monitoring and recording results of executing the quality activities to assess performance and recommend necessary changes.

Report performance – The process of collecting and distributing performance information including status reports, progress measurements, and forecasts.

Monitor and control risks – The process of implementing risk response plans, tracking identified risks, monitoring residual risks, identifying new risks, and evaluating risk process effectiveness throughout the project.

Administer procurements – The process of managing procurement relationships, monitoring contract performance, and making changes and corrections as needed.

CLOSING PHASE

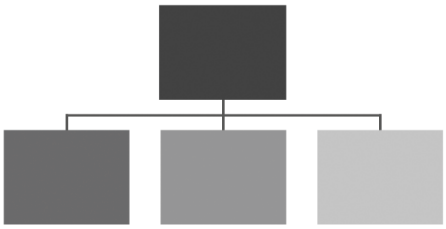
Close projects or phase – The process of finalizing all activities across all of the management process groups to formally complete the project or phase.

Close procurements – The process of completing each project procurement.

APPENDIX H: TOTAL CHECKLIST RESPONSES

Questions	Yes	No	NA
Do you teach a lecture on project management in any of your courses?	15.5	5.5	0
Do you have a specific model of project management you teach and/or follow?	7	12.5	1.5
Do you utilize any other project management tools in any of your courses?	6	15	0
Do your students initiate, plan, execute, monitor and control, and close projects in some form?	16.5	4.5	0
Develop a project charter?	12.5	8.5	0
Identify stakeholders?	18	3	0
Develop a project management plan?	13.5	7.5	0
Collect requirements?	20.5	0.5	0
Define the scope?	18	3	0
Create a breakdown of the tasks that need to be completed?	19.5	1.5	0
Define activities?	19.5	1.5	0
Sequence activities?	19	2	0
Estimate activity resources?	14.5	6.5	0
Estimate activity durations?	17	4	0
Develop schedule?	13.5	7.5	0
Estimate costs?	4.5	16.5	0
Determine budgets?	2.5	18.5	0
Plan quality?	16.5	4.5	0
Develop human resource plan?	4	17	0
Plan communications?	18.5	2.5	0
Plan risk management?	0.5	19.5	1
Identify risks?	2.5	18.5	0
Perform qualitative risks analysis?	1.5	19.5	0
Perform quantitative risks analysis?	1.5	19.5	0
Plan risk responses?	0.5	20.5	0
Plan procurements?	3	18	0
Direct and manage project execution?	21	0	0
Perform quality assurance?	19.5	1.5	0
Acquire a project team?	4	17	0
Develop a project team?	2	18.5	0.5
Manage a project team?	4.5	16.5	0
Distribute information?	12	9	0
Manage stakeholder expectations?	20	1	0
Conduct procurements?	0.5	20.5	0
Monitor and control their work?	20	0	1
Perform integrated change control?	13.5	6.5	1
Verify the scope?	17.5	3.5	0
Control the scope?	14.5	5.5	1
Control schedule?	14	7	0
Control costs?	2	18	1
Perform quality control?	17.5	3.5	0
Report performance?	17.5	3.5	0
Monitor and control risks?	0	21	0
Administer procurements?	0	21	0
Close projects or phase?	21	0	0
Close procurements?	0.5	20.5	0

APPENDIX I: ACTION PLAN



Project Management
Action Plan

prepared for the

Visual Communication Technology Program

at Bowling Green State University

2009

Description

The following is an action plan developed as part of a Major Project study titled The Status of Project Management in the Visual Communication Program at Bowling Green State University. For this study, the researcher evaluated the VCT program and has formed recommendations to implement and increase visibility of the project management discipline in the program.

Project Management Methodology

- A methodology should be selected by the VCT Program to implement a consistency between all courses in the program.
- Recommended available standards and methodologies would be:
    - Project Management Body of Knowledge (PMBOK)
    - Project IN Controlled Environments (PRINCE2)
    - International Project Management Association (IPMA)

Structuring Project Management into the VCT Curriculum

- VCT 103
    - Design an introductory lecture on project management defining the project life cycle and project phases.
    - Lecture based on chosen methodology of the program.

- VCT 204
    - Design a multi-week seires of lectures that covers the processes involved in the chosen methodology to create awareness of the discipline before matriculating into the VCT tracks.
    - Educate the students on the different project management standards, methodologies, and tools currently available.

- 300 Level VCT Courses
    - Introduce students to project risk, cost, and human resource management as the students are barely being exposed to these knowledge areas of project management.
    - Structure knowledge areas specific to the students' VCT tracks and related industries.

Structuring Project Management into the VCT Curriculum (continued)

- 400 Level VCT Courses
    - Introduce students to project procurement management as many students begin using actual clients.
    - Setting up classmates as procurements should also be considered.

Possible New VCT Project Management Course

- 400 Level Project Management Course
    - Could continue curriculum scaffolding of the project managmenent methdology chosen by the program.
    - Students could view each process more in-depth by exploring what is needed to start a process, what a process needs to work, and what the outputs of the process are.
    - Course would prepare students with knowledge they will need upon graduating and entering the workforce.
    - Assist students interested in pursuing project management in graduate school by providing them a solid understanding of the discipline.

Continuing Education for Faculty

- Further educating the faculty on the project management discipline will also be required.
    - Educating faculty on the selected methodology will be necessary to keep the consistency between the tracks and courses.
- Faculty should understand the differences between project management and instructional design.
    - Instructional design is how to make a project, where project management is how a project is completed successfully according to specifications, on time, and under budget.
- Faculty should also understand the differences between a project charter and a project propsal.
    - Proposals suggest how a project will be completed, where charters are contracts signed by project stakeholders and project managers citing reasoning of a project, the budget, and the deadline to complete it by.
- Create awareness of project management tools available for use in the classrooms, such as software to assist with project completition.