The Thinking Expedition: A Course in Creativity, Innovation and Change

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Abstract

This paper describes a course entitled *Creativity, Innovation and Change* that is currently taught as part of the Systems and Software Engineering programs at Penn State University's School for Graduate Professional Studies. The course was designed to support several modules in these programs, including a core skill-based module and a module focused on innovation. This paper will provide an overview of the objectives and the content of this course. Specific delivery techniques will be discussed, along with homework assignments and the semester-long course project. Student outcomes and feedback will be reported as well. While the present audience for this course is composed of working adults, it is highly suitable as an elective in the undergraduate curriculum of any engineering program.

1.0 Introduction

Engineers are trained to solve problems and get results. In today's world of fast paced innovation and change, those results must often be very different from anything that currently exists. This paper describes a course that focuses on moving beyond the normal ways of thinking and doing, into the world of different thinking for different results. The course centers on the in-depth exploration of the cognitive style of each student and the ways in which that cognitive style affects his or her problem solving ability, both individually and in teams. Using this foundation, students investigate and apply new tools and techniques for problem solving which complement their innate preferences, help them to build new skills, and lead them to creative solutions for complex problems.

The course is structured around the Osborne-Parnes Creative Problem Solving (CPS) model[11], Rolf Smith's Seven Levels of Change[10], and several models of cognitive diversity, including M. J. Kirton's Adaption-Innovation theory[3,4,5] and Carl Jung's personality types[7,8,9]. A unique expedition metaphor is used to promote discovery, risk taking, and collaboration within the learning environment. This paper highlights and summarizes the most striking features of this challenging course based on four years of implementation in the College of Engineering at the Pennsylvania State University.

This paper is divided into ten sections, as follows. Section 2.0 provides a brief background of the course and its development. Sections 3.0 and 4.0 discuss course objectives and an overview of course content (including the syllabus), respectively. Section 5.0 describes some of the delivery techniques used in this course, and Section 6.0 briefly discusses homework assignments. Section

7.0 addresses the semester-long individual course project. Student outcomes and feedback are discussed in Sections 8.0 and 9.0, respectively, and a summary is presented in Section 10.0.

2.0 Course Background

Creativity, Innovation and Change was originally developed as an elective for all students at the Penn State Great Valley School for Graduate Professional Studies. Penn State Great Valley is a special-mission campus in the Penn State University system, tasked with serving the adult learning community in the Philadelphia region. Since its introduction in 1997, *Creativity, Innovation and Change* has been incorporated into several modules that support the Systems and Software Engineering degrees. It may be taken as part of a core skill-based module, which also includes courses in communication and project management, or it may form one leg of a module that focuses on innovation and change. Other courses in the innovation module include *Invention and Creative Design* and *Engineering Ethics* (both developed by this author). *Creativity, Innovation and Change* remains open to all students in the School's three Divisions: Engineering, Management, and Education.

3.0 Course Objectives

The main objective of this course is to teach students to think differently about their own thinking and to apply what they learn about their thinking as they solve problems in their profession. In more sophisticated terms, this course takes a metacognitive approach to problem solving and projects it into the engineering realm. One simple, yet fundamental, interpretation of the relationship between metacognition and enhanced creativity is illustrated in Figure 1. This simple model for thinking, doing, and learning is called the MindShift Model[10] due to the shifts in mental perception that are often required in order to proceed from stage to stage.

To apply the MindShift model to engineering, we begin with the assumption that engineers are, by the nature of their profession, looking for results that are in some way better and/or different than what currently exists. The engineer's path to these results is deceptively simple: To get different results, engineers must do things differently. To do things differently, they must think differently. And to think differently, they must first think about the way they think. The path to enhanced creativity in the form of better or different results, then, begins with metacognition, or thinking about thinking. That is where this course begins as well.

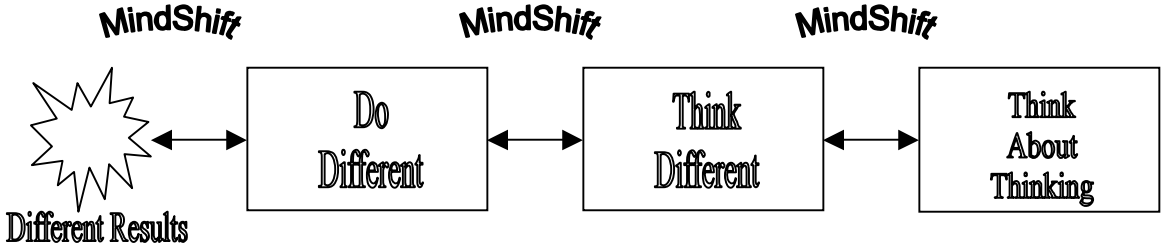

Figure 1. The MindShift Model

With respect to delivery, high priority is placed on independent discovery (both individual and team-based) and active learning techniques. This objective is supported through extensive exploration of cognitive diversity and the use of an expedition metaphor to frame the course, both of which are discussed further in the next section.

4.0 Overview of Course Content

The course content is based on four components that are interwoven throughout the course. These four components are:

(1) The Osborne-Parnes Creative Problem Solving (CPS) model;
(2) The Seven Levels of Change;
(3) Two models of cognitive diversity; and
(4) The expedition metaphor.

The Osborne-Parnes Creative Problem Solving (CPS) Model[11]

The CPS model, originally based on the work of Alex Osborne and Sidney Parnes, is an evolving model for the problem solving process that incorporates much of the current research in creative behavior as well. The model is composed of three components and six stages, each of which contains elements of both divergent *and* convergent thinking. *Divergent thinking* involves the search for many varied and unusual possibilities, and details to expand or enrich those possibilities. *Convergent thinking*, on the other hand, involves taking a collection of many different ideas and drawing them toward a single goal or result. This can be accomplished through organizing, analyzing, refining, developing, ranking, prioritizing, and/or choosing (one or several) options or possibilities.

The first component in the CPS model, Understanding the Challenge, focuses on identifying and selecting opportunities in a way that leads the problem solver to find productive answers. This component includes three stages: Constructing Opportunities, Exploring Data, and Framing Problems. The last stage, Framing Problems, includes a focused process for formulating good, well-defined problem statements that the students find particularly helpful.

The second component, Generating Ideas, includes a single stage with the same name. In this component/stage, the goal is to produce a large number of varied ideas *and* to identify ideas with interesting potential for further exploration. The balance of divergent and convergent thinking is particularly important in this component/stage.

The final component, Preparing for Action, includes two stages: Developing Solutions and Building Acceptance. In this component, students focus on giving promising ideas or options the best chance of becoming successful solutions by considering sources of assistance and resistance and looking for ways to overcome the latter. The final result of this component is a specific Action Plan for each idea to be carried forward. The CPS model forms the foundation for the semester-long course project, which will be discussed further in Section 7.0.

The Seven Levels of Change[10]

The Seven Levels of Change were developed by Rolf Smith, a retired Air Force colonel and founder of the first Air Force Innovation Center. The 7 Levels, as they are usually called, describe a powerful strategy for enhancing creativity, encouraging innovation, and driving continuous improvement. Some of the world's largest organizations, including IBM, Exxon, DuPont, R. J. Reynolds, Johnson & Johnson, and the U.S. Navy, have incorporated this strategy into their operations. Because the model is general, the 7 Levels can also be applied equally well in personal situations. The 7 Levels of Change can be outlined briefly as follows:

Level 1: Effectiveness – Doing the right things.
Level 2: Efficiency – Doing the right things right.
Level 3: Improving – Doing things better.
Level 4: Cutting – Doing away with things.
Level 5: Adapting – Doing things other people are doing.
Level 6: Different – Doing things no one else is doing.
Level 7: Impossible – Doing things that can't be done.

A basic understanding of the 7 Levels of Change and their application in both professional and personal settings is presented in parallel with the CPS model described above. The 7 Levels are also integrated directly into the course project (see Section 7.0).

Models of Cognitive Diversity

To support the metacognitive objectives and interactive delivery methods of this course, the students of *Creativity, Innovation and Change* are introduced to two models of cognitive diversity. These models are:

(1) The personality types of Carl Jung; and
(2) The Adaption-Innovation theory of M. J. Kirton.

Carl Jung's theory of personality types is incorporated through the administration and interpretation of the Myers-Briggs Type Indicator (MBTI), a well-known psychological instrument that is based on Jung's work. Type theory, as defined by Jung, Myers, Briggs, and others[7,8,9], describes an individual's personality in terms of dichotomous traits: extraversion (E) vs. introversion (I), sensing (S) vs. intuition (N), thinking (T) vs. feeling (F), and judging (J) vs. perceiving (P). Every individual exhibits all of these traits at one time or another, but each person is born with innate, unchanging preferences that may be identified through the instrument.

Kirton's Adaption-Innovation (KAI) theory[3,4,5] is incorporated through the administration and interpretation of the KAI Inventory, a highly validated psychological assessment tool. Kirton's theory describes the differences in creative *style* (as opposed to creative *level*) exhibited by people as they engage in problem solving processes. KAI theory is based on two assumptions: first, that all people are creative, and second, that all people solve problems. Individuals, including engineers, differ in the cognitive style in which they do so, however, and this can have great implications for both the problem solving process and its results. Differences in cognitive

style lie along a continuum, which ranges from strong *adaption* on one end to strong *innovation* on the other[3,5]. (Please note that Kirton's definition of the word *innovation* is independent of and may differ from common usage.) Fundamental distinctions between KAI scores are described in terms of an individual's preferred approach to solving problems, making decisions, and working with structure.

Students receive confidential individual feedback from both the MBTI and KAI inventories. The results of these inventories are also used in planning classroom activities and in forming the small teams of three to five students that interact and support each other throughout the semester. Application of type theory and Adaption-Innovation theory are also integrated directly into the course project (see Section 7.0).

The Expedition Metaphor

A unique component of *Creativity, Innovation and Change* is the expedition metaphor which overlays the entire course. It is the use of this metaphor that has earned the course its nickname: the *Thinking Expedition*. From course materials and homework assignments to in-class activities and classroom props, the path to enhanced creativity and different results is presented as a physical expedition in a remote location (e.g. the British expedition which successfully scaled Mount Everest). As the instructor, I take the role of the Lead Expedition Guide, while the students assume the roles of climbers and other support staff.

To bring the metaphor to life, students are issued expedition vests, passports, and journals during the first class meeting. This "expedition equipment" is used throughout the semester, both in class and at home. Videos that document actual expeditions are used to stimulate the discussion of discovery, risk-taking, and teamwork within the creative problem solving context. Homework assignments and in-class activities target various phases of the expedition, a map of which is shown in Figure 2. Developed by Rolf Smith, this expedition map illustrates a patented process for leading teams and individuals to higher levels of thinking and different results.

Course Syllabus

The course syllabus, organized around the four components discussed above, is shown in Figure 3. The assigned readings refer to the two course texts, *Creative Problem Solving: An Introduction* (CPS: Treffinger, et al.)[11] and *The 7 Levels of Change* (7L: Smith)[10]. Supplemental material on personality types and the KAI is presented through separate readings and handouts[6,7]. Please note that Penn State Great Valley operates on a 14-week schedule, and each class meeting indicated is a full 3 hours in length.

Figure 2. A Map of the Thinking Expedition

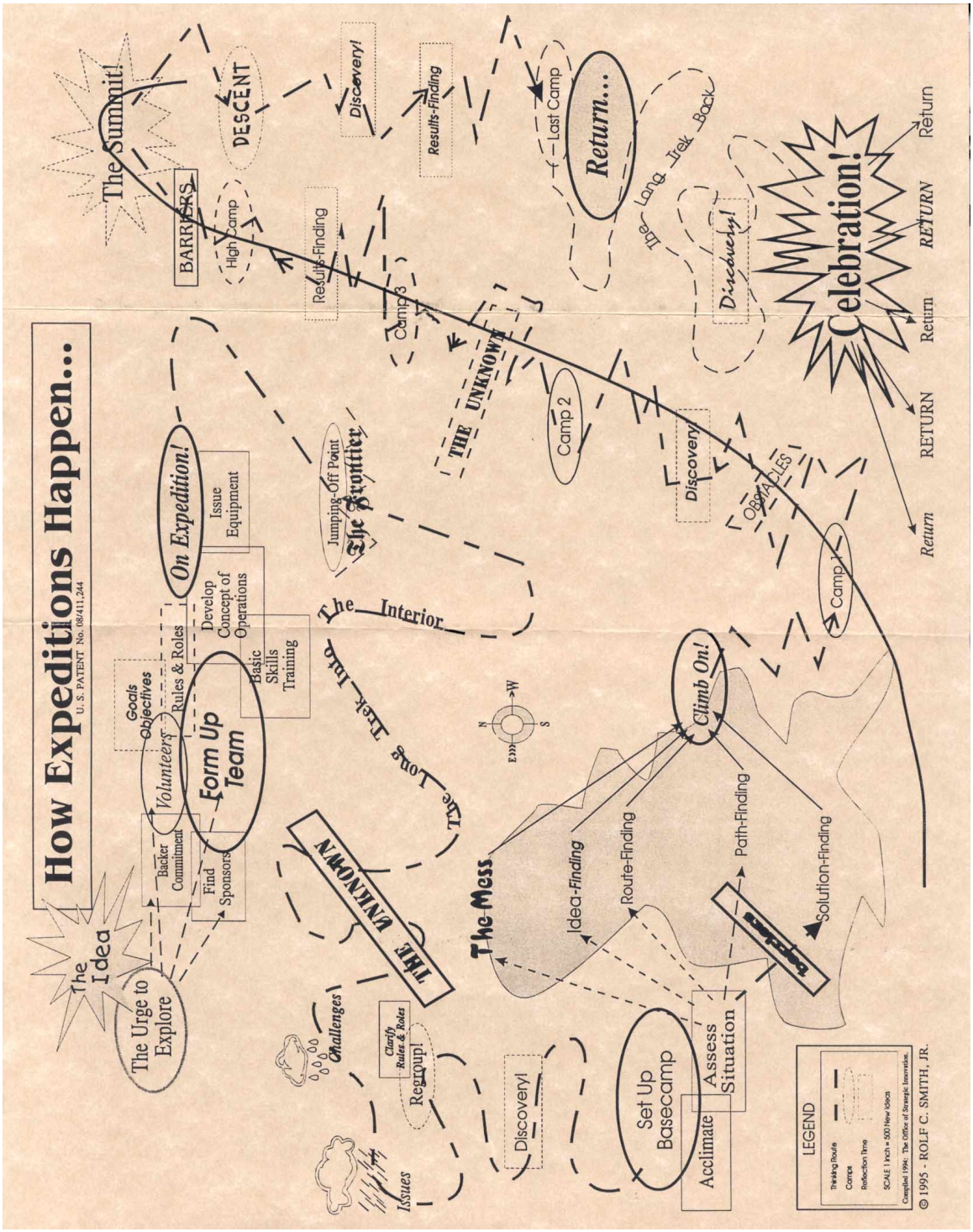

Figure 3. Syllabus for SYSEN 550: Creativity, Innovation and Change

Topics	Text Reference	Meeting #
Joining the Expedition; The MindShift Model; Cognitive Diversity	7L: pp. 1-7 CPS: ---	1
On Expedition; Concepts of Creativity; 7 Levels Overview	7L: pp. 1-17 CPS: Ch. 1	2
The Long Trek In; Level 1: Effective; CPS Overview	7L: pp. 18-29 CPS: Ch. 1	3
Forming the Team; Level 2: Efficient; MBTI (I); Quiz #1	7L: pp. 30-41 CPS: Ch. 2	4
Set Up Basecamp; MBTI (II); Mindmapping; Constructing Opportunities	7L: --- CPS: Ch. 3	5
Climbing! Level 3: Improving; Exploring Data	7L: pp. 42-61 CPS: Ch. 3	6
Camp 1; Quiz #2; Framing Problems; Project Work	7L: --- CPS: Ch. 3	7
Camp 2; KAI (I); Level 4: Cutting; Generating Ideas	7L: pp. 62-73 CPS: Ch. 4	8
High Camp; KAI (II); Level 5: Copying; Project Review	7L: pp. 74-87 CPS: Ch. 4	9
Climb On! Quiz #3; Level 6: Different; Idea Selection	7L: pp. 88-107 CPS: Ch. 4	10
Summit! Level 7: Impossible; Preparing for Action	7L: pp. 108-121 CPS: Ch. 5	11

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Return from the Summit; Developing Solutions; Project Work	7L: pp. 122-144 CPS: Ch. 5	12
The Long Trek Back; Building Acceptance; Applications; What's Next?	7L: Case Study CPS: Ch. 5, 6	13
Celebration! Discoveries; Project Presentations; Course Evaluations	7L: --- CPS: Ch. 6	14

Figure 3. Syllabus for SYSEN 550: Creativity, Innovation and Change
(continued)

5.0 Delivery Techniques

There are many creative delivery and application techniques used in this course, including blue slips, journalling, mindmaps, idea passports, and 5 Minute Meetings. In the interests of brevity, these techniques will not be described here, since detailed instructions for their use may be found in other references[1,10,12]. In general, the majority of the course material is presented through discussion and exploratory in-class activities rather than lecture, with the exception of MBTI and KAI theory. Most of the in-class activities are designed for teams, except for journalling and mindmapping (which are usually done individually) and the use of idea passports (which occurs in pairs).

The delivery of material related to cognitive diversity deserves special mention. Specifically, the application of knowledge related to the MBTI and KAI inventories is incorporated into the team activities in the following way. Both inventories are administered during the first class meeting and scored before the next class. Individual results of the inventories are not yet divulged, however. In the several weeks that follow, prior to the formal presentation of the MBTI and KAI material in class, students are grouped homogeneously and heterogeneously relative to both MBTI and KAI results during various in-class activities, but without their knowledge. As the weeks progress, they are asked to note any observations about differences in group dynamics, such as ease of communication, reactions to ideas, work efficiency, etc. During the formal MBTI and KAI feedback sessions, students are informed of the makeup of the different teams, and a lively discussion of their insights into team dynamics and problem solving ensues[2]. This thought-provoking sequence of events generally proves to be one of the most popular elements of the course.

6.0 Homework Assignments

Due to the significant time and effort involved in completing the individual course project, the homework assignments for *Creativity, Innovation and Change* are not extensive. A Creative Thinking Journal is assigned in the first class meeting, with instructions to journal daily

throughout the fourteen-week semester. A listing of this assignment appears in Figure 4. Occasionally, short readings are required in addition to those from the texts, and portions of the course project are sometimes assigned for completion by a particular date. This helps students keep abreast of the work involved and enables project work to be incorporated into the class meetings.

Figure 4. Creative Journal Assignment for SYSEN 550: Creativity, Innovation and Change

SYSEN 550: Creative Thinking Journal

You have **one** primary assignment that begins *now* and ends during our final class meeting. Here are some of the details:

(a) You are to keep a **Creative Thinking Journal** throughout this course.

(b) You are to write for *at least* 10 minutes in your journal *every day*, starting today and ending on the last day of class.

(c) You may use any format for your journal, including the *Thinking Expedition Journals* that I will make available to you during our first class meeting.

(d) For those of you who have never journalled before, we will discuss the process of journalling further in class. I will also put several books about journalling on reserve in the library.

Content:

- Your **Creative Thinking Journal** is your personal "backpack" of ideas, thoughts, questions, and comments related to this course. That is, it is a place to record what you think and feel about what you are learning and how you plan to (and do) apply it.
- A journal is NOT a diary! Do *not* simply record "This is what happened today." Instead, focus on "This is what I think and/or feel about what I am learning and doing in this course, and this is how it applies to me, my job, my life, etc."
- In addition to your own self-determined streams of thought, I will regularly supply you with questions and other "triggers" to think and journal about. In some cases, these journalling tasks will be *required*. At other times, they will only be suggested items to help you in the journalling and learning process.

Journal Evaluation:

I will regularly examine your journals to make sure that you are completing your assigned work. These checks will be unannounced and random; that is, each week I will randomly select a few journals to glance through during the class period. I will collect *all* of your journals at the end of the semester for a more comprehensive evaluation.

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In the evaluation process, I will be looking for evidence that:

(a) You are writing in your journal daily;
(b) You are reading your texts;
(c) You are completing any required tasks which I give you;
(d) You are thinking about what you learn after you leave the classroom;
(e) You are making attempts to apply what you are learning.

Note: As I evaluate your journals, I will be considering only your *completion* of the work and the *effort* you are putting into it. My evaluation will NOT depend on whether I agree or disagree with your specific thoughts, ideas, or opinions. (That is, a journal entry cannot be "right" or "wrong".) You are free to express yourself openly and in strict confidence.

Privacy:

The journalling process may take you into private territory. If there is any personal material in your journal which you do NOT wish me to read, please mark the appropriate entry/entries with a red * (star), and I will not read them.

Figure 4. Creative Journal Assignment for SYSEN 550: Creativity, Innovation and Change (continued)

7.0 Course Project

The individual course project is a major assignment that incorporates three of the four main components of course content: the CPS model, the 7 Levels of Change, and the two models of cognitive diversity represented by the MBTI and KAI. A complete listing of the course project is given in Figure 5. The project description is structured to mirror the components and stages of the CPS model, with the 7 Levels of Change and the two models of cognitive diversity projected onto it.

While the final results of the project are ultimately individual, a large portion of the project work is completed in small teams that have been designed to maximize cognitive diversity as much as possible using the results of the MBTI and KAI inventories. Students report that they gain a great deal of satisfaction from project work accomplished in these teams that have been taught how to value each team member's cognitive preferences.

From a logistical point of view, the individual course project is weighted 35% in the students' final grade evaluation, with the creative thinking journal worth 30%, content quizzes worth 20%, and class participation worth 15%. While the creative thinking journal does not require a large amount of time to complete, it is weighted heavily to encourage the students to engage in the serious reflection and self-assessment that it requires as the course progresses.

Figure 5. Individual Course Project for SYSEN 550: Creativity, Innovation and Change

SYSEN 550: Individual Course Project

Project Objectives:

- To integrate the material you have learned and apply it to a real problem;
- To practice using new problem solving tools and techniques;
- To explore your own style of creative thinking and behavior.

Overview:

The organization and tasks for this project are based on the Creative Problem Solving (CPS) process that we will discuss in class. Note specifically the three main components of this process (**Understanding the Challenge**, **Generating Ideas**, and **Preparing for Action**) in the headings below. Within these three components you will find tasks which represent the six CPS stages: *Constructing Opportunities*, *Exploring Data*, *Framing Problems*, *Generating Ideas*, *Developing Solutions*, and *Building Acceptance*.

Your project includes both written work and a short presentation to members of the class. The specific items that you need to produce and hand in are indicated at the end of each component. You will submit the entire project as a whole at the end of the semester. The presentation is discussed in the final section of this document.

I. Understanding the Challenge:

(a) Complete a Thinking Expedition **Mess-Finding Kit**.

Notes: I will distribute these kits in class. They will help you to identify an appropriate mess (i.e. problem area) to explore for this project.

(b) Produce a mindmap of your chosen mess/problem area.

Notes: This mindmap may be relatively general. Please make sure it is legible and large enough to be useful. Use color and icons where appropriate.

(c) Project the **7 Levels of Change** onto your mess mindmap.

Notes: Consider your mess/problem area and its different parts as represented by your mindmap. Which parts might be considered Level 1 tasks (i.e. being more effective)? Which parts might be considered Level 2 tasks (i.e. being more efficient)? ... Which parts might be considered Level 7 tasks (i.e. doing the impossible)? Indicate this information on your mindmap in an appropriate way.

(d) Project **KAI** and **MBTI** concepts and information onto your mess mindmap.

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Notes: Consider your chosen mess/problem area and how different creative styles and thinking preferences (including your own!) will contribute to and impact each part. Indicate in some appropriate way how your understanding of KAI and MBTI theory will influence your problem solving. For example, you might label various parts of your mindmap with an "A" or an "I", depending on whether that part represents a more adaptive task (requiring an adaptive solution) or a more innovative task (requiring an innovative solution). Think of other ways to apply your understanding of both KAI and MBTI theory, and demonstrate them accordingly using your mindmap.

(e) Produce a second, separate mindmap of potential data resources that you think might be useful in order to better understand and/or solve your mess.

Notes: Work hard and stretch your thinking to be as comprehensive as possible for this task. You may complete this step on your own or with others.

(f) Produce 3 *good* problem statements (that is, using the proper form discussed in class) for your chosen mess/problem area.

(g) Choose ***one*** problem statement to use as you move forward in the second component of this project (i.e. **Generating Ideas**).

For this project component, **please hand in**:

- Your completed **Mess-Finding Kit**
- Mindmap of your mess/problem area
- Mindmap of data resources
- Problem statements (indicate chosen problem)

II. Generating Ideas:

(a) Apply 3 *individual* idea generation techniques and 1 *group* idea generation technique to your chosen problem.

Note: In the interests of learning something new, do not choose "standard" brainstorming as one of your idea generation techniques. Variations on brainstorming are acceptable, however.

(b) Apply any 2 idea selection techniques to the ideas you have generated. These may be individual *or* group techniques.

Notes: For both steps above, provide a *summary* of your efforts and *evidence* of the application of your chosen techniques. Specifically, include a brief description of how each technique works (~1 paragraph), some evidence and a summary of your actual working results, and a critique of the technique (i.e. how did it work for you?).

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(c) Choose at least *two* ideas to use as you move forward in the third component of this project (i.e. **Preparing for Action**).

For this project component, **please hand in**:

- Summary and evidence of idea generation techniques
- Summary and evidence of idea selection techniques (indicate ideas chosen for next component)

III. Preparing for Action:

(a) Complete an **Idea to Action Checklist** for the two ideas that you selected in the previous component.

Notes: I will provide you with the appropriate forms for this task. They represent both the *Developing Solutions* and *Building Acceptance* stages of this final CPS component. Make sure your results are both legible and complete.

(b) Complete a **Thinking Expedition Action Plan** for each idea you have selected.

Notes: I will also provide you with these forms. Please complete them in detail. I do not expect you to implement these action plans as part of your project, but it would be great if you got started! Describe any steps you DO complete.

For this project component, **please hand in**:

- Idea to Action Checklists
- Thinking Expedition Action Plans

IV. Analysis of Results: Thinking About Thinking

Now it's time to think about your own thinking for this project. As a final written component to the project, **please hand in** a brief analysis (~1-2 pages) of the problem solving process and your own thinking throughout the process. In your analysis, you might consider these questions: What happened? Why did it happen? What didn't happen? What worked well for you? What was difficult for you? What role(s) did your own KAI and MBTI profiles play? How might you improve the process and/or your thinking the next time you solve a problem? How might you use this process (or parts of it) in the future?

V. Presentation of Results:

Objectives: The purpose of a "live" presentation is many-fold. First, it shows me that you actually did the work required and how much mental muscle you put into it. Second, it gives you a chance to show off your efforts to your peers and me. Third, it really crystallizes the results for *you* in your own mind (you learn more from teaching others than almost any other process). And fourth, it gives the rest of the team a chance to give you helpful suggestions and provide support for your ideas.

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Task: You are to make a live *informal* presentation of your project to a selected group of your classmates (this will most likely take place during our last class meeting on **xxx**). Your presentation should last approximately 15 minutes (plus 5 minutes for questions and comments) and may take any form you like. You are also responsible as a member of the audience for providing helpful suggestions, questions, and discussion following the presentations of your classmates.

Deadline:

The final deadline for handing in this project and for making your brief presentation is **xxx**. No late submissions will be accepted due to the quick turnaround required for final grades.

Figure 5. Individual Course Project for SYSEN 550: Creativity, Innovation and Change (continued)

8.0 Student Outcomes

In general, the expected student outcomes for this course can be summarized under two headings: new knowledge and new skills. New knowledge includes the Creative Problem Solving model with its various stages, tools and techniques for divergent and convergent thinking, the 7 Levels of Change strategy, and two models of cognitive diversity. Fundamental new skills include the ability to evaluate and change one's own thinking based on heightened self-awareness, and an improved capacity for leveraging the cognitive preferences of one's peers in group settings based on a new understanding of and appreciation for different creative styles.

9.0 Student Feedback and Comments

Student comments are routinely collected as part of the standard course evaluations that are completed at the end of each semester. These comments are made anonymously and include both positive and negative reactions to the course. In general, the students respond very positively to the interactive nature of this course, the use of the expedition metaphor, the new perspectives on teamwork, and the material dealing with cognitive diversity. Most negative reactions relate to the amount of time and work required to complete the course project and difficulty in maintaining the discipline required to journal every day.

From the positive perspective, one student remarked: "My coworkers and management would benefit from a class like this. It should be mandatory for all undergraduates." Another student commented: "This course has given me great insight into personal behavior traits." And finally, one student accurately summarized the course in this way: "The things you learn in this class are building blocks for your future."

10.0 Summary

This paper provided an overview and description of a course entitled *Creativity, Innovation and Change* that is currently taught as part of the Systems and Software Engineering programs at Penn State University's School for Graduate Professional Studies. The course objectives were

presented, and the course content (including a syllabus) was outlined. Specific delivery techniques were highlighted, along with a discussion of the semester-long individual course project and some brief comments concerning homework assignments. Student outcomes and feedback were reported as well. From the student comments, we can conclude that the course successfully meets its primary objective – to teach students to think about their own thinking, and to help them move forward on the path to different results.

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This free online course will introduce the processes related to discovery, creativity, innovation and entrepreneurship; the influence of Chinese culture on them; and the characteristics and thinking of Chinese innovators and entrepreneurs. By the end of the course, you will acquire the skills and ability to: identify daily problems; generate new ideas course Creativity, Innovation, and Change in a "leaderless classroom,â€ where students. design their own education and traditional teacher-student relationships are cast aside, replaced with a mentor-creator collaboration that fosters invention and facilitates the. creative process. Intentionally, say Horner and Matson, both the educational methods. and objectives are non-traditional: "â€¦the process of teaching creativity, innovation, and.Â patterns and cultivate creative potential through discovery, risk taking, and collaboration. An expedition metaphor permeates Jablokowâ€™s course, and students are. encouraged to perceive their evolving thinking as a journey. In preparation, â€œexpedition. vests,â€ â€œidea passports,â€ and journals are distributed on the first day of class. Students.