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Developing a Leadership Curriculum 'Innovation, Creativity and Leadership'

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Developing a Leadership Curriculum 'Innovation, Creativity and Leadership'

by

P.Z.H. Pauwels

An Abstract of a Project

in

Creative Studies

Submitted in Partial Fulfillment

of the Requirements

for the Degree of

Master of Science

May 2017

Buffalo State

State University of New York

Department of Creative Studies

ABSTRACT OF PROJECT

Developing a Leadership Curriculum
'Innovation, Creativity and Leadership'

Growth and innovation are key drivers to a company's long-term success. Creativity (creative thinking) is a necessary condition for innovation. Supervisors and managers who are able to build a positive work environment that enables creative and innovative behavior have a competitive advantage. This Master's project focuses on the development of an in-company leadership curriculum to provide leaders and supervisor with theoretical background and a " toolbox " to develop their own and their team's innovative and creative behavior. A pilot version of curriculum was well received and validated the need to gain more understanding on the topic of creativity and innovation and how to coach it.

Key words: innovation, creativity, leadership, curriculum, coaching

Pamela Z.H. Pauwels

9 May 2017

Date

Buffalo State
State University of New York
Department of Creative Studies

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25 April 2017

_____ _____

Dr. Susan Keller-Mathers

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9 May 2017

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SECTION ONE: BACKGROUND TO THE PROJECT

Purpose and Description of the Project

Innovation has become a critical concern to most companies in order to face diverse challenges in the ever-changing business environment (Mumford, Hunter, Eubanks, Bedell & Murphy, 2007). It is rare to find a company that does not refer to innovation for its long-term survival in its annual report, investor day presentation, or on its company website validated by numerous business and academics books, articles and blogs, e.g. Amazon.com carries 30447 titles on innovation. Creativity and/or creative thinking as a necessary condition for innovation have been receiving more attention in its wake, although to a lesser extend, e.g. Amazon.com only carries 7012 titles on creativity.

The company I work for, an American Fortune 500 global specialty chemical company (40 manufacturing sites worldwide, 15,000 people) is no exception. Our company website refers to both innovation and creativity in its company strategy and in its (brand) values. The extent, to which an organization is innovative and creative, however depends on the creative potential at the individual level (Puccio & Cabra, 2010). Our company believes that everyone has creative and innovative potential, or at least that creative and innovative behaviors can be developed. This is reflected by the fact "creativity and innovation" is one of the key behaviors all employees are reviewed on as part of their bi-annual review. Although written guidance is given on how to assess this behavior, no formal training is provided on how to develop, coach and nurture creativity and innovation.

The idea for this project was seeded in the *Change Project* assignment of a course on organizational creativity and innovation I took recently. The

assignment explored whether there was a need for leadership training to lead and coach creativity and innovation in others. The plan was conceived during a walking lunch with our Human Resource director, shortly after the summer school of 2016 with the summer course on creative leadership fresh on my mind. We talked about several aspect of leadership training. As the conversation evolved I expressed my surprise that little attention was given to leading and coaching creativity and innovation, given the importance of it in our strategy but also given that leaders are key in developing this 21st Century skills (Puccio, Mance, Switalski & Reali, 2012; World Economic Forum, weforum.org). While returning to the office, we agreed that it would be worthwhile to explore this further.

The idea for a course was (partly) validated by a short questionnaire among a divers group of supervisors/leaders and stakeholder interviews held with members of the European leadership team. Based on these results and with the support of the leadership, it was agreed to start running a 1/2-day course starting Quarter One 2017 as part of the leadership curriculum. The course focuses on providing a clear framework of what creativity and innovation is, how to coach and lead creativity and a practical toolbox.

As part of this master project the Creative Problem Solving process (CPS) was used as a guideline to develop the set up of the course and the materials (see for example Puccio, Mance & Murdock, 2011). The main creativity skills I wanted to further develop were: Highlight the Essence, Let Humor Flow and Use it, Visualize it Richly and Colorfully and Put Your Ideas in Context (Torrance & Safter, 1990; Burnett & Figliotti, 2015).

While working on this project, I started living my vision of being a 'creative' multiplier through putting creative leadership in action and sparking creative

confidence and efficacy in others and myself. Along the way I became more playful and started developing my own voice for coaching creativity.

Rationale for Selection

The results of the survey revealed a curious tension: While they indicated that the corporate description left them confused about how to assess the behavior, the majority felt confident about their skills to lead and coach creativity and innovation. In this light the need for further training was 50/50. Some believed that training was useless if the company culture did not change, or believed that these behaviors were not desirable in their function.

The ambiguity in the results, but also the way the respondents worded their answers, strengthen my hunch that going ahead with the development of a training for the following reasons could make a difference.

Firstly, it clears up the confusion among the supervisors on what creativity and innovation is, how to assess it, and how it applies to their function. The results suggested that supervisors use their own definition of creativity and innovation to make it happen and to comply. The lack of a clear definition and the use of creativity and innovation as interchangeable terms makes it messy and potentially undermins its relevance as a behavior. Vehar (2008) quoted Dr. Mary Murdock saying, "words mean something", if the company wants the behavior of its employees to reflect its values, it needs to be more rigorous in its definition and teaching to reduce the current subjectivity in assessment.

It is also about busting myths around creativity. While innovation is widely accepted, creativity scares people off with its association with the arts. Anecdotally, one of the interviewee said that his wife would laugh if she knew he

was interviewed on creativity. For him is all about painting, writing, making things and that is something he does not master at all. As Amabile (1998) points out business creativity or any creativity is not limited to originality, it needs also to be appropriate, useful and actionable. It needs to have an impact on the business (resulting in new products or an approach). With a definition of creativity limited to originality, not everyone sees it applicable to his or her function. Some respondents explicitly mentioned that creativity was not desired in their function. These people are selling themselves short, as new and useful thinking is desired in all functions in the organization. Another reason of running this course is to provide guidance on how to translate this behavior to all functions in the organization, not limiting it to functions as R&D or marketing. A more rigorous definition takes away some of the mystery around creativity and innovation, making it more accessible to coach and lead.

Secondly, it is about leadership and embracing an 'and and' or ambidextrous mindset. To be successful a company needs to be both exploitative (current business) and explorative (innovation) at the same time (Rosing, Roshenbursch & Frese, 2010). The assessment revealed a general belief that the company culture does not support creativity and innovation, despite being one of the key behaviors in the company. I want to avoid that the latter is used as an excuse for doing nothing, and to instate more ownership with the leaders for igniting creative confidence their followers and in themselves, by reviewing different models on creativity, such as Puccio et al.'s Creative Change Model (2011), and giving insight in the role leaders play in facilitating or inhibiting creativity and innovation through review leadership theories. But also I want

provide a balanced view on when creativity is required and when not (Puccio et al., 2011; Swid, 2015).

Finally, leadership is about action and action is easier if you have tools. The course will provide supervisors a broad tool kit to coach their teams on creative and innovative behavior.

Creating this course gave me the opportunity to give something back to the company who is sponsoring this master’s program. It enabled me to grown as a leader, spark more creativity in others and be a change agent. The project forced me to move from thinking to doing.

SECTION TWO: PERTINENT LITERATURE

Introduction

To structure the course, I am drawing on the pertinent literature: to define creativity and innovation, 2to 'make a case' why leaders are the key to nurture and create creative confidence in their followers and to select a relevant set of tools to help leaders to foster creativity in their follower.

Defining Creativity and Innovation

Why Creativity and Innovation are Related, but not the Same

Most authors have their own definitions of innovation, but in essence they all refer to innovation as the process of implementation or exploitation of new ideas into new products, processes or services that have potential for value (see for comprehensive overviews: Vehar, 2008: Puccio et al., 2011; Dawnson & Andriopoulos, 2014; Ceserani, 2017). As new ideas, e.g. creativity, are the starting point for innovation, it not surprisingly that innovation and creativity are often used interchangeable. Vehar (2008) holds a plea for more rigor in defining both concepts and treating them as two different concepts. He further argues that lack of differentiation between both terms is damaging to the field of creativity.

While most companies have some kind of innovation process, like Stage Gate (see www.stage-gate.com), implemented Larry Robertson (2017) observes in a recent blog that little progress is made in developing creativity as a key strategic skill. This is somewhat surprising as for more then a decade industry leaders have indicated that creativity is an important competency, a strategic priority and a point of competitive advantage. This reflects an unconscious bias

against separating innovation and creativity. While innovation radiates business, creativity is often associated with arts and not with business; hence business leaders feel more comfortable to talk about innovation (Enayati, 2012).

To do justice to both concepts and to give creativity the attention it deserves, I consent with Vehar (2008) that there is a need for clear, separate definitions. In the course, the following definitions are used to distinguish innovation from creativity. Creativity is the production of original and useful ideas that respond to a perceived problem or opportunity (e.g. Davis, 2004, Vehar, 2008; Miller, Vehar, Firestien, Thurber & Nielsen, 2011). Innovation is the process of exploiting lots of different ideas to generate a new concept (product, process, service) of value (Ceserani, 2017). Next to creativity, implementation is a crucial component for innovation to happen. Vehar (2008) and Anderson, Potočnik and Zhou (2014) pointed that creativity is more individual, referring to intra-individual cognitive process, while innovation is more a team activity, referring to inter-individual process social processes in the work environment. The relation between innovation, implementation and creativity is displayed in Figure 1.

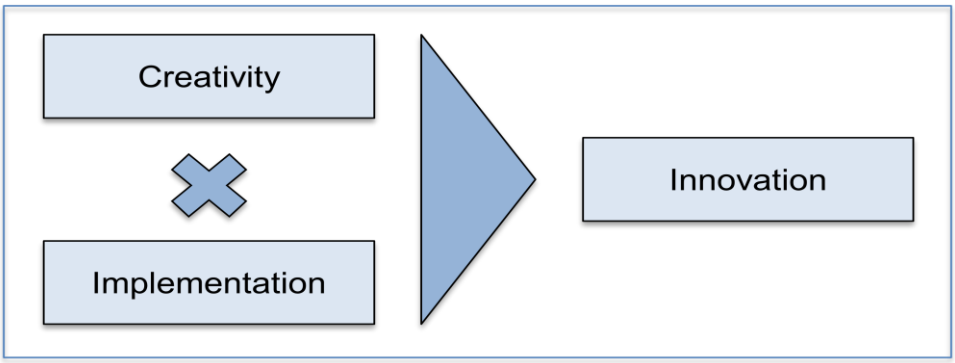

Figure 1. Link between creativity and innovation

As creativity is a pre-requisite for innovation and often shabbily treated in organizations, the focus in the course will be on creativity, rather then innovation.

Also, in our company we are working with Stage Gate and a propriety framework for business and marketing excellence so innovation is well covered, while as indicated in a previously creativity is underexposed.

Creativity as Complex Construct

Some authors argue that the definition of creativity, as stated above, treats creativity as singular entity. They consider this too simplistic and propose a typology of creativity (see Unsworth, 2001; Wise, 2003, Gilson, Lim, D'Innocenzo, & Moye, 2012). For example, Gilson et al. (2012) differentiate between radical and incremental creativity:

> They define "*radical creativity* as the generation of new ideas that are revolutionary to a field, are risk taking in nature, and focus on experimentation and paradigm shifts. In contrast, incremental creativity is focused on find new applications for exiting method, processes, or products, and adapting what is currently done." (p. 171)

Although further refinement is needed to reflect the complex nature of creativity, typologies like the one suggested by Gilson et al. (2012) are very similar to concept of destructive vs. incremental innovation (Dawnson & Andriopoulos, 2014) and continue to blur the distinction between innovation and creativity.

To address the complexity of the concept of creativity and its richness, the following definitions of creativity are used instead: Ruth Noller's Creativity Formula (see Puccio et al., 2012, p. 299) and Rhodes 4Ps of creativity (Rhodes, 1961). Noller's Creativity Formula (see Figure 2) reflects what Neumeier (2013) refers to as *simplexity*. He argues that you have found simplexity when you can describe a complicated entity using just a few words or a brief formula.

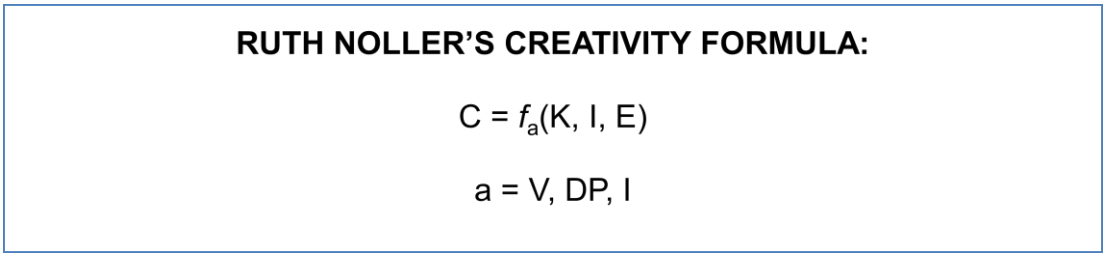

Figure 2. Ruth Noller's Creativity Formula

The formula captures in a neat way the key components of creativity: Knowledge (K), Imagination (I) and Evaluation (E). These components are a function of attitude, which give the formula its drive and momentum. Attitude refers to the individual creative potential and is a combination of vision (V), deliberate practice (DP) and intrinsic motivation (IM). The fact that you can capture creativity in a formula should be appealing to a more analytical audience. It also bust the myths that creativity is 1) the result of innate talent, 2) mainly associated with the arts, 3) children are more creative then adults, 3) same thing as originality and 4) cannot be taught (Puccio et al., 2012).

Rhodes' 4 P's of creativity helps to deconstruct and organize creativity around (Rhodes, 1961):

1. Person: personality, cognitive skills and preferences, biographical elements
2. Process: creation, use and application of creativity
3. Product: artifact, result, assessment of what makes something creative
4. Press (also environment): climate or culture surrounding person, process and product affecting creativity

The 4Ps provide ideal hooks to talk about the different aspects of creativity. Additionally I refer to creative thinking as a way of looking at problems or

situations from a fresh perspective that suggests unorthodox solutions (which may look unsettling at first). Creative thinking can be stimulated both by an unstructured or structured process (www.businessdictionary.com). With creativity and creative thinking defined the next section deals with when creativity is needed.

When is Creativity Needed?

Although Amabile (1998) argues that most managers hold a too narrow view of creativity and creativity can beneficial for every function of an organization, not every problem encountered in an organization requires a new solution or creative thinking. Anderson, Potočnik and Zhou (2014) also warn for the innovation maximization fallacy, e.g. all creativity and innovation is good; and the more, the better. Unsworth (2001) posed the following questions in her search to gain a fuller understanding of the phenomenon: "Why engage in creativity?" referring to the drivers for idea generation and "What is the initial state of trigger" referring to the degree of problem finding. These questions also can guide us to answer the question when creativity is required.

According to Puccio et al. (2011) whether or not creativity is required depends on the type of problem. They define four types of problems: formulaic, maintenance, predicament and opportunity. They are based on the following dimensions: approach to the problem (reactive or proactive) and the nature of the problem (one single correct answer - algorithmic, or several potential answers - heuristic). Creativity is not needed for algorithmic problems. They do not need new thinking, as they are solved according to a formula (formulaic) or through fixed routines (maintenance). Heuristic problems, on the other hand, always

need new or creative thinking. Either a novel approach is needed to return to previous levels of functioning (predicament), or you actively pursue some desirable possibilities (opportunity). Providing guidance on which problems need creativity and which ones not, makes it less scary and easier to embrace.

With creativity well defined and guidance provided on when to use creativity, the next section focusing on leaders as catalyst for innovation and creativity.

Leaders as Catalyst for Innovation and Creativity

A Case for Focusing on Leadership

Why are leaders key to nurture and create creative confidence in their followers? Creative confidence refers to the ability to come up with new ideas and the courage to try them out (Kelley & Kelley, 2013). Isaksen and Ekvall (2015) point out, after reviewing a series of models and tools on organizational creativity, that all have in common that organizational creativity depends on the interaction between the individual and work environment. Puccio and Cabra (2010) argue that leadership is probably one of the most salient elements of work environment in promoting creativity. Through their behaviors, abilities and qualities leaders enable an environment that leads to creativity and innovation. In their *Creative Change Model* Puccio et al. (2011) provides further insight on how leadership influences the 4Ps of creativity (see Figure 3). Through their behavior leaders shape how the person behaves, which processes are followed and physical and psychological environment (press) their followers are working in.

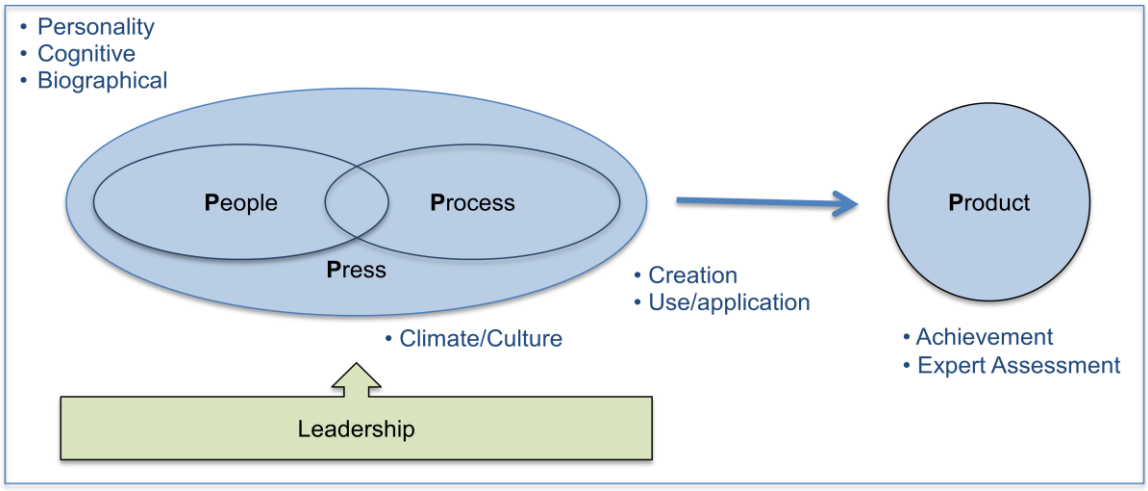

Figure 3. How leadership influence the 4Ps of Creativity (Adapted from the Creative Change Model Puccio, Murdock, & Mance, 2011, p. 26)

Therefore if you want to make an organization more creative / innovative, you need to start with the leaders first. This is why the curriculum focuses on the leaders and not at the followers. If leadership is key to creativity, which style of leadership is most conducive for creativity?

Leadership Style and Creativity

There is a large body of research available looking at the link between leadership and creativity (see for overviews Tierney, 2008; Anderson et al., 2014; Dawnson & Andriopoulos, 2014). The focus differs depending on the author's theoretical preferences, but overall the literature seems to suggest that leadership styles that have features like confidence, hope, optimism, and resilience, acceptance of failure, motivate and stimulate others with clear goals and vision, and transcend their self-interest, tend to have the most positive effect on creativity. (E.g. Jaussi & Dionne, 2003; Jung, Chow, & Wu, 2003; Hirst, Van Dick & Van Knippenberg, 2009; Černe, Jaklič, & Škerlavaj, 2013; Herrmann and

Felfe, 2014; Henker, Sonnentag, & Unger, 2015; Rego, Sousa, Marques, & Cunha, 2012). These features are linked transformational and/or authentic leadership styles (Northouse, 2016).

While transformational and authentic leadership styles are linked to creativity and innovation, they fall short taking in account the conflicting demands leaders deal with everyday to balance continuity and change, the old and the new. For most leaders daily business it is not about either being or not being creative and innovation, it is about incorporating both (Rosing, Frese & Bausch, 2011). Recently ambidexterity theory has been advocated as a framework to explain the different roles leaders play to successfully drive innovation (Anderson et al., 2014). Ambidexterity refers to the ability to use both hands equally well, for organizations this means that can engage equally well in exploration and exploitation (Rosing et al., 2010). Exploration refers to development of new knowledge, experimentation and seeking novelty. It is associated with increasing variance, search for alternatives and risk taking. Exploitation refers to hone and extend current knowledge, seeking great efficiency and improvement. It is associated with reducing variance, avoiding and reducing risks, adhering to the rules. (Rosing et al., 2010; Dawnson & Andriopoulos, 2014). Rosing et al. (2010) propose an ambidextrous leadership style to successfully navigate the innovation process. As summarized in Figure 4, essential leadership behaviors are opening and closing precede ambidextrous behavior. Opening refers to "a set of leader behaviors that includes encouraging doing things differently and experiment, giving room for independent thinking and action and supporting attempts to challenge established approaches (p. 199). Closing refers to "a set of leader behaviors that includes taking corrective action, setting specific guidelines and

monitoring goal achievement". (p. 199). An ambidextrous leader is someone who demonstrates both sets of behaviors and can switch between them depending on the task and the situation.

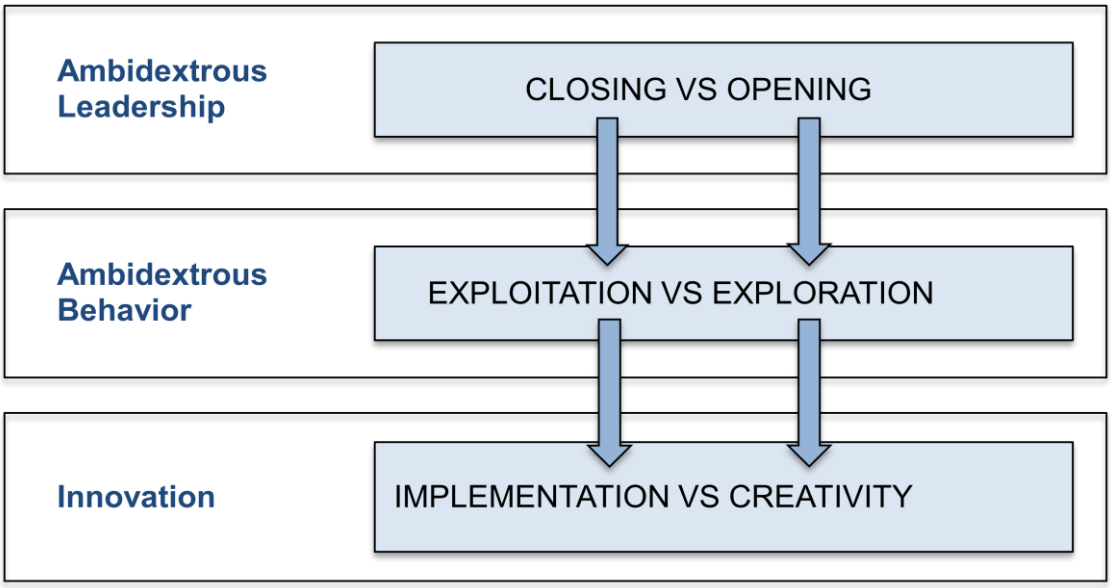

Figure 4. Linking ambidextrous leadership to ambidextrous behavior and innovation (Adapted from Rosing et al., 2011)

Opening is linked to behaviors as exploration and creativity, while closing is linked to exploitation and implementation. An ambidextrous leader has a direct influence on her followers through stimulating exploration and exploitative behavior or through creating a culture or climate for ambidexterity. It is not expected from the followers that they demonstrate both types of behaviors, as that will depend on their function. In some situations, leaders will organize their organization ambidextrously where structurally exploitation and exploration is separated to ensure greater innovation success (e.g. Agostini, Nosella & Filippini, 2016).

Recent studies have shown support for ambidexterity theory to explain leadership effect in the innovation process (e.g. Bledow, Frese, & Mueller, 2011;

Probst, Raisch & Tushman, 2011, Zacher & Rosing, 2015; Zacher, Robinson & Rosing, 2016).

Having more insight into and developing an ambidextrous mindset of being both exploitative (not-innovative) and explorative (innovative) at the same time should take away an 'either or' attitude and replace it with 'and and' attitude.

Key Leadership Characteristics, Skills and Behaviors for Nurturing Creativity

Tierney (2008) argues that although there is a lot of literature around covering leadership characteristics pertinent for creativity and innovation, little studies incorporated leadership characteristics in their examination of creativity. She found overall leader intelligence and emotional intelligence, in specific, to be relevant. Also displaying an understanding for the steps their followers have to undergo as part of the creativity process and what cognitive skills are required from them. Not surprisingly it is important that the leaders themselves posses themselves adequate skills in terms of creative problem solving. Being able to plan and to understand complexity is key to creative leadership. Further having technical skills in the relevant fields in which the followers operate.

Rosing et al. (2010) adds to list above integrative or polarity thinking. The ability to simultaneously hold in mind two contradictory ideas and to solve tension between two opposites, not by choosing one or the other, but by integrating them in a holistic solution to achieve a purpose (Martin, 2009). Puccio et al. (2011) refer to three key skills that are needed to function effectively as a leader during the entire creative thinking process. They are:

> *Openness to novelty*: ability to entertain idea that at first seem outlandish and risky, *Tolerance for ambiguity*: ability to deal with uncertainty and to avoid leading to conclusions, *Tolerance of complexity*: ability to stay open and persevere without being overwhelmed by large amounts of information, interrelated and complex issue an, competing perspectives (Puccio et al., 2011, p. 64).

Amabile and Kramer (2011) found that leaders who were able to positively influence the inner work life (e.g. emotions, perceptions and motivation) were more successful in creating an innovative and creative environment. When people feel good at work, perceive the organization as open to collaboration and new ideas, they are more willing to work together, are more creative and able to find innovation solution.

One could argue that next to all characteristics, skills and behaviors related to leadership for nurturing creativity, they should be a least aware of the 'basic' creative thinking skills as defined by Torrance & Safter (1999) to stimulate creativity, summarized below in Table 1.

Table 1

Creative thinking skills

The Problem	**Produce and Consider Many Alternatives**	**Be Flexible**
Aware of a challenge or opportunity; define problems.	Fluency; generating many options.	Generating variety, different categories and perspectives.
Be Original	**Highlight the Essence**	**Elaborate-But Not Excessively**
Statistically infrequent responses; novel, unusual perspectives.	The absolutely essential; synthesizing all, focusing on one.	Adding, developing details or ideas.
Keep Open	**Be Aware of Emotions**	**Put Your Ideas in Context**
Resisting premature closure.	Recognizing cues, understanding through feelings.	Putting parts of an experience into a bigger framework.
Combine and Synthesize	**Visualize It-Richly and Colorfully**	**Enjoy and Use Fantasy**
Putting together new connections with the given elements.	Using vivid, colorful imagery.	Imagine, play and consider the nonexistent.
Make It Swing! Make It Ring	**Look at It Another Way**	**Visualize the Inside**
Using kinesthetic, auditory; your full range of senses.	Seeing from a new or different visual or psychological perspective.	Describing the inside of things, seeing internal dynamic workings.
Breakthrough-Expand the Boundaries	**Let Humor Flow and Use It**	**Get Glimpses of the Future**
Changing the paradigm, outside given requirements.	Responding to incongruities, surprises, discrepancies.	Wonder, dream, explore possibilities that do not yet exist.

(Adapted from Torrance & Safter, 1999)

Building a Toolbox

The Creative Thinking Process & Cognitive Styles

Davis (2004) observes that "doing something creative" necessarily involves three steps: clarifying the problem, working on it, and finding a good solution (p120). Most models in the Creative Problem Solving and Design Thinking literature build on these three steps. Depending on the authors, elaborations will be made by adding more formal sets of stages to these steps (Davis, 2004). For

this course I settled on Creative Problem Solving process as described by Puccio et al. (2011). The four separate steps in the process are:

- Step 1: Clarify (Exploring vision and formulating challenges)
- Step 2: Ideate (Exploring ideas)
- Step 3: Develop (Formulating solutions)
- Step 4: Implement (Exploring acceptance and formulating a plan)

The first stage is preceded by a process step, which is referred to as Assess. Here data is gathered data and diagnosis is made at which stage of the process to start.

Underlying all models and steps is what Land and Jarman (1992) calls nature's creative dynamic, the continuous interplay between divergence and convergence as driving force behind all growth and change. In every stage, you first engage in divergent thinking, and then in convergent thinking. Both come each with their own rules, which are summarized in the Table 2 (Miller et al., 2011).

Table 2

Divergent and convergent thinking rules

Divergent thinking rules	**Convergent thinking rules**
• Defer Judgment • Strive for Quantity • Seek Wild and Unusual Ideas • Combine and Build on Other Ideas	• Use Affirmative Judgment find the advantages first • Be Deliberate, Be planful and systematic • Be Open to Novelty Look for new and unusual options • Work to Improve Options Make your options better

(Adapted from Miller et al., 2011)

Although all of humans have creative potential, not everyone is equally energized by each of the stages of the CPS process. We tend to have a preference for one of them. Puccio et al. (2011) refer to these preferences as Clarifier, Ideator,

Developer, and Implementer. Table 3 summarizes the key characteristics for each of the cognitive preferences.

Table 3

Description of cognitive preferences in the CPS process

Preference	Short Description
Clarifier	• Clarifies the problem; wants to address the right problem • Gathers information • Looks at details • Not quick to move to solutions • May over analyze & not move forward
Ideator	• Likes to look at the big picture • Enjoys toying with ideas and possibilities • Likes to stretch his or her imagination • Sometimes takes a more intuitive approach to problem solving • Enjoys thinking in more global and abstract terms • May overlook the details.
Developer	• Puts together workable solutions • Plans steps to implement an idea • Analyzes and compares potential solutions • Examines the pluses and minuses of an idea • May get stuck in developing the perfect solution
Implementer	• Gives structure to ideas • Brings ideas come to fruition • Focuses on workable solutions • Takes the 'Nike' approach ("Just do it") • May leap to action too quickly

(Adapted from Puccio et al.,2011)

Understanding one's own and the team members' preference within the CPS process helps to focus the energy when coaching for innovative and creative behavior.

Creating the Toolbox

What starting with Alex Osborn's (1953/2006) original brainstorming exercise, has now grown into wealth of tools to help people at the different steps of the creative process with either divergent or convergent thinking. The following

books provide a good overview of tools but the list is no way exhaustive and reflects my personal library (in alphabetic order):

- Allen, D., Kingdon, M., Murrin, K., & Rudkin, D. (1999). *WhatIf: How to start a creative revolution at work*. Oxford, UK: Capstone.
- Barez-Brown, C. (2006). *How to have kick-ass ideas: Get curious, get adventurous, get creative*. London, UK: Harper Element.
- Byttebier, I., & Vullings, R. (2015). *Creativity in business: The basic guide for generating and selecting ideas*. Amsterdam, NL: BIS Publishers.
- Kelley, T., & Kelly, D. (2013). *Creative confidence: Unleashing the creative potential within us all*. New York, NY: Crown Business.
- Miller, B., Vehar, J., Firestien, R., Thurber, S., & Nielsen, D. (2011). *Creativity unbound: An introduction to creative problem solving* (5th ed.). Evanston, IL: FourSight, LLC.
- Proctor, T. (2014). *Creative problem solving for managers. Developing skills for decision making an innovation*. (4th ed.). London, UK: Routledge.
- Puccio, G. J., Mance, M., & Murdock, M. (2011). *Creative leadership: Skills that drive change* (2nd ed.). Thousand Oaks, CA: SAGE.

For the creation of the course a selection will be made of a few divergent and convergent tools for each of stages of the creative thinking process.

SECTION THREE: PROCESS PLAN

Plan to Achieve Your Goals and Outcomes

This project starts with a clear goal: developing a leadership curriculum to enable leaders to lead and coach creative and innovative behavior. This goal was the outcome of a previous assignment in a course on organizational creativity and innovation. The assignment explored idea whether more formal training should be given to our leaders/supervisor on how to assess and coach creativity and innovation. The outcome was that a course on 'Creativity, Innovation and Leadership' has been included in the training program for 2017. See Appendix A for a description of the course as it appears in the company's training curriculum. The main challenge for this master project is the development of the course content and its materials.

Before diving into the development, I collected additional data to gain more insight and to get inspired. This is a literature review on the one hand and expert interviews on the other hand. I consider as experts people who coach or teach creative behavior as part of their job. I interviewed a former head of the design academy, a lecturer in graphic design and two owner of the innovation agency. The interviews make the theory come alive and give insight in what works in real life. Additionally, I also received some examples of courses from fellow Euriginals. The plan is to finish and analyze the interviews by mid February. Although I will still be busy with literature review, at that point I will start to explore ideas on how the set-up the course. The plan is to create at least have 3 different ones and then select one to pilot on 13 March. Based on the evaluation of this pilot the course setup will be fully fleshed out and the final materials further developed for the first course planned on 11 April. The initial idea is to create a

1/2-day course. As there is also interest from specific teams (e.g. innovation leadership team, marketing and sales leadership team) there might be the need to create an additional full day version.

As the course is already in 'demand' and part of the curriculum, it is tempting to think no implementation or action plan is needed. To ensure that this course becomes a 'classic', a plan is in place to generate interest of future participants and extend it beyond the European region.

Project Timeline

The project timeline as shown in Figure 5, is divided in roughly 6 buckets and starts at the time this paper is being written. The first bucket finishes with the submission of this concept paper. The next bucket is all about explore and gather additional data. The focus of the third bucket is about creating a pilot, e.g. a prototype of the course and finalizing Sections 1 to 3. The fourth bucket focuses on finalizing the course and its materials, and to tutor the course for real the first time. In parallel, Section 4 to 6 will be wrapped up. The next to final bucket is about finishing the project and submitting it. The final bucket refers to the future and the potential happy ever after of this course.

In the timeline I have not detailed the interactions with my sounding board partner and the instructor. With the former I envisage weekly or bi-weekly interaction depending on our needs. With the later coaching session will be planned as and when the need occurs.

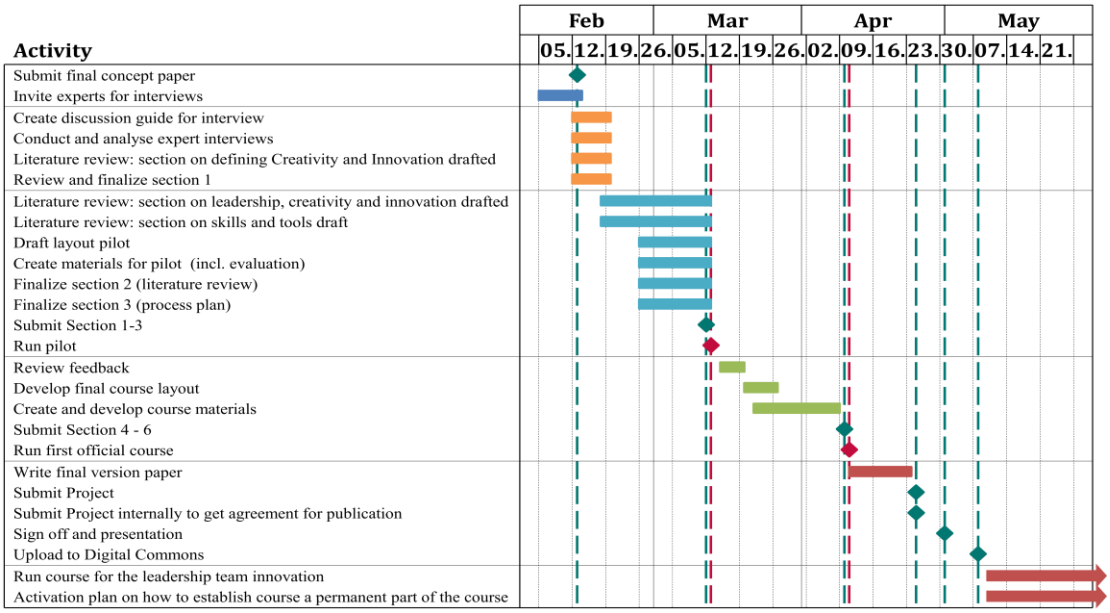

Figure 5. Project timeline

Evaluation Plan

Whether or not I have achieved the goals laid out at the beginning of this project will be evaluated in two ways:

1. Informally through discussions with Sue (course instructor), Jon (sounding board partner), some of the Euriginals and the experts whom I interviewed.

2. Formal evaluation of the pilot on 13 March with super users, review of first regular class and training of Innovation group/Marketing and Sales team. These evaluations will take place both verbally (asking the class afterwards) and through a short questionnaire (still need to developed).

3. Keeping an idea book and diary, to reflect on my progress.

4. Feedback and instructor grading of project.

SECTION FOUR: OUTCOMES

The development of the product, a curriculum on innovation, creativity and leadership, took place in the three phases: building the course outline, piloting the course, and the creation of a modular approach.

This section provides a chronological overview of the design process. During the design process I drawn on the insights gained from the literature review and input received by talking to experts and students of creativity.

Building the Course Outline

Setting the Scene

The objective was to develop a leadership curriculum to enable leaders/ supervisors to lead and coach creative and innovative behavior. This was in response to the outcome of a previous assignment in the course on organizational creativity and innovation. The assignment explored whether more formal training was needed on how to assess and coach creativity and innovation for our leaders. Together with the regional Human Resource director who is responsible for training, it was agreed to create a 1/2- day training session for supervisors to improve their skills on how to lead and coach creative and innovative behavior. The course takes place as seated class in our regional head quarters in Europe. The target audience is supervisors of all levels. Note that the decision was taken to focus in the first instance on supervisors, as they are key to create a climate for creativity. Potential participants were made aware of the course via an email sent by our HR department, listing all open enrollment courses available in the region, at the beginning of the year. Those interested where invited to sign up for the course via our open enrollment tool on the

intranet. The course is free and needs a minimum of 10 participants to take place. Note that at the moment the curriculum is planned as one-off introduction to innovation, creativity and leadership. There are no plans to have more extended learning with checkpoints or comeback sessions. Whether or not the latter will be offered depends on the needs of participants for further follow up.

Getting Started

As this is a completely new course/workshop to be added to the curriculum, I started with a few interviews with seasoned creativity trainers, looked at different course descriptions and gained some advice from my project instructor to get started. This provided me with some good structure and tips on how to create the outline of the course, and also to 'unclude'. Neumeier (2013) refers to uncluding as the art of subtracting every element that doesn't pull its weight. The key learning is summarized in Figure 6. What I took away from this exercise was: focus (don't cram everything you know in the four hours), be playful, keep it simple, steal or leverage the work from others and build on it.

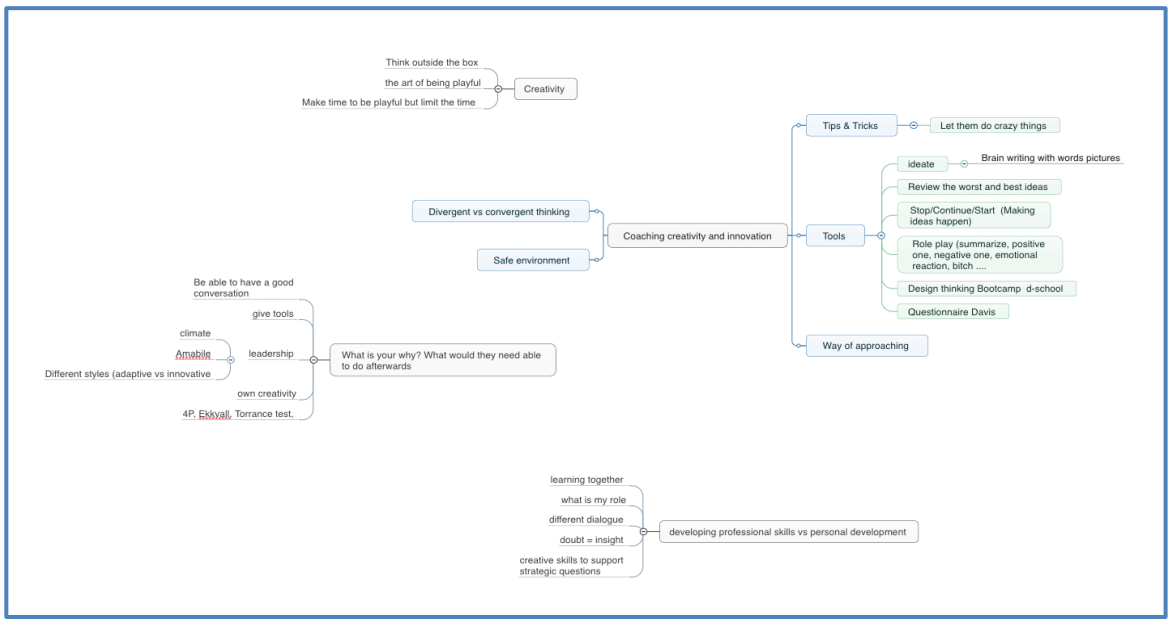

Figure 6. Mindmap summarizing the expert interviews

Structure of the Course

The course is built around four major parts. Part one focused on establishing the why (purpose) by linking the course to the companies' values, brand and behaviors. Part two focused on defining innovation and creativity. From the research done last year among a sample of line managers, it became apparent that some of them where using the terms interchangeably, but also that they felt uncomfortable about applying creativity to their function.
Hence, the key objectives here were: 1) participants can explain the difference between innovation and creativity, and how they relate to each other, 2) participant can explain why creativity and innovation are important for their function.

As this course is aimed at supervisors/line manager, the next part focused on leading innovation and creativity. It had been a very conscious choice to focus on leaders as the audience for this course. As pointed out by Tierney (2008), leaders are crucial for fostering creativity in their followers and the organization. There are many different leadership styles linked to innovation and creativity (see Anderson et al., 2014). In the course I discuss ambidextrous leadership (see for Section Two for a full description) for the following reasons. The theory fits with well with our company's culture and offers an *'and-and'* approach, which is more balanced and easier to recognize for leaders. This section also included an explanation of the Creative Thinking process. The key objectives of this section were: 1) participants have a basic awareness of the notion of ambidextrous leadership, 2) participants can explain the creative thinking process in terms of divergent and convergent thinking, and 3) participants understand what the key skills for leaders on creative thinking.

While part two and three were of a theoretical nature, the final part changed gears and was more practical in nature. It centered on coaching innovation and creativity and providing a toolbox of different divergent and convergent tools to ignite creative thinking in their followers. Some of the tools are practiced in the class setting using real time examples. The key objectives for this section were: 1) participants understand and practices two divergent tools and one convergent tool and 2) participants understand how they can coach individual /team.

For each section, different exercises were developed, together with accompanying PowerPoint slides highlighting the key theoretical thinking. The full description of the pilot course layout can be found in Appendix B and the PowerPoint deck in Appendix C.

Piloting the course

Rationale for the Pilot

As this course is completely new, it was decided to run a pilot of course to assess the following: is the course addressing the needs of our audience, are the objectives achieved and is the set up of the course and its materials appropriate. It further enabled me to try to the course in an open and safe environment where making mistakes is allowed. It was decided to run this pilot with a small group (some of them participated in last year's study) about a month before the actual course would take place.

Running the Pilot

The pilot session took place in our office on the 13th of March. Seven people were invited to attend the pilot, but due to illness and a customer

emergency, only 5 people attended. This did not affect objective of the pilot. The participants were a good representation of the audience for the course and came from human resources (custodians of training program), information technology (IT) and different business units. Before starting the session, I explained to the group that this was a pilot and that I was looking for their critical input on how to improve the course. The first three parts took placed as planned. Some good discussion took place and I surprised myself with the depth of elaboration I provided in terms of theories and other information. I went through the material quicker then planned probably due to relatively small group of participants. The Marshmallow Challenge, which I added as an exercise to experience the process went well and added a playful element to the afternoon (see Figure 7 for an impression). (https://www.tomwujec.com/design-projects/marshmallow-challenge/)

Figure 7. Outcome of the Marshmallow test

The final section completely bombed. After explaining to the group a series of divergence and convergence tools, the plan was to have a 'coaching' role-play, using divergent/converging tools that were explained to them. One of the participants came up with a challenge and then started having conversation using Why? What is Stopping You?. It felt unnatural and awkward. At that moment, I stopped the role-play and asked it this was working. It obviously did not. We then

continued to brainstorm on what would work, and proceeded to evaluate the session.

Key Learning and Improvements

Overall the feedback was positive and focused mainly on what to add. Surprising some of the participants referred back to exercises, like the Hippo in the bathroom, and concepts, Foursight Profiles, that I covered in previous workshops and presentations and wanted to see those added.

To summarize the key learning and improvement, I used POINt (Plusses, Opportunities, Issues, New Thinking) (See Table 4). POINt is a tool for converging and is a four-step technique to for evaluating and improving new ideas (see Miller et al, 2011 for a description). As it focuses on praise first and on improvement later, it makes a good tools analyzing and improving this course but to summarize the feedback.

Table 4

Outcome POINt on pilot session

Plusses	**Opportunities**
• General set up of the course worked well • Good balance of the theory and practice • Marshmallow challenge • Engaged audience • Insightful feedback • Lots of dialogue	• Extending possible • Create a course for every one • Measuring impact • Add intervision session after the course to practice
Issues	**New Thinking**
• How might I make a stronger case why this is important? • How might I set the context better? • How might I make it more playful/fun? • How might I make every exercise count? • How might I extend the learning beyond the class setting? • How might I keep things simple? • How might I paint the context better? • How might I link everything better together? • How can I be more patience on time?	• Better balance between play and theory • Add videos/picture for a less minimalistic approach • Add more demonstrations • Add more reflection / what do they see themselves doing next • Use problem where everyone recognizes themselves in as examples • Be sharper in instructions • Align everything to the current change program the company is undergoing • Add example of what other companies do
Additional suggestions: • Add list killers of creativity • Go into depth about types of people on creativity • Add Hippo in the bath exercise • Maybe add mood board	

Additionally I shared my course outline with a few people. This provided me with additional insight on how to revise the current course to build a stronger one. I received tips to add a couple of exercise like 'numbers' exercise (demonstrate habit), the wheelbarrow one (demonstrate how we criticizes things), to add assistors/resistors as tools for implementation. A suggestion was made to clearly link it to three key skills: Openness to Novelty, Tolerance for Ambiguity, and

Tolerance for Complexity (Puccio, et al, 2011). Taking all this feedback in account, I went about revising the course.

Revising the Course Outline: A Modular Approach

Redesign

For the redesign of the course, there was not only the feedback of the pilot to take in account but also the need for a full day version of the course to be taught to the leadership team of the Innovation department and the leadership of corporate Marketing and Sales department, next to the 1/2-day version as part of standard curriculum. While writing the course set up for both courses (see Appendix D and Appendix E), the need for a modular approach on the course content became quickly apparent as both courses are designed to provide leaders and supervisor with theoretical framework and a “ toolbox ” for supervisors to develop their own and their team’s innovative and creative behavior. I was basically designing the same course with the main difference that in the longer version also addressed the different cognitive styles used in the creative process. A modular approach makes sense as the objective for both courses is the same, and it creates flexibility to create different versions of the 'same' course in the future without having to design a new course every time a 'different' request comes in. The course outline will define what modules to include. Before discussing the design of different modules I first discuss the learning objectives, which will guide its development.

Key Learning Objectives

Using the 'A Model of Learning Objectives' based on Bloom's Taxonomy of Educational Objectives (Center for Excellence in Learning and Teaching, Iowa State University, see for description Appendix F), I sharpened the learning objectives for both version of the course. The main learning objectives are:

- Define innovation and creative thinking
- Examine how creativity relates to your own function and discipline
- Describe their role as leader in building an innovation and creative culture.
- Describe different cognitive styles in creative thinking
- Use tools to coach and build creative behaviors in teams and individuals.

These objectives further provided input in the development of the different modules.

Overview of the Modules

A total 7 modules were developed (see Appendix D and Appendix E for the course descriptions):

- Module 1: Introduction and expectations
- Module 2: Defining innovation and creativity, and how both concepts relate to each other
- Module 3: Leading innovation and creativity
- Module 4: Creating Thinking Process
- Module 5: Thinking preferences and styles
- Module 6: A toolbox for coaching

Each module starts with an exercise. The aim of the exercise is to set the scene for what is to come and to make it more playful. It then continues with the

main topic of the module. A mix of PowerPoint, videos and dialogue are used to explain the key concepts. The rationale to use a mix of formats is to address the feedback from the pilot to make it more play and fun. It also addresses my desire, expressed in Section One, to develop following creativity skills as part of this project as: Highlight the Essence, Let Humor Flow and Use it, Visualize it Richly and Colorfully and Put Your Ideas in Context (Torrance & Safter, 1990; Burnett & Figliotti, 2015). Depending on the time available and the main objective of the course, the time allocated to each module and the execution of it might vary. For example, in a full day course more time is allocated to each of the different module to allow more in-depth discussion. An impression of the PowerPoint deck of the different modules can be found in Appendix G. Examples of the courses based on the modules can found in Appendix D and Appendix E. Appendix H summarize the feedback received from the first full day course given.

In order to ensure that the course objectives are met, I mapped the content of the course to main learning objectives. This is summarized in Table 5.

Table 5

Mapping learning objectives to course content

Learning Objectives	***Course content***
Define innovation and creative thinking	• Exercises on creativity and Innovation • Video on blocks to creativity • Framework • Ruth Noller's Creativity Formula • 4 P's of creativity
Describe how creativity relates to your own function and discipline	• Discussion how it relates to their jobs • Types of problems
Describe your role as leader in building an innovation and creative culture.	• Creative Change Model • Key Leadership characteristics, behaviors and skills for fostering innovation and creativity • Ambidextrous leadership
Apply tools to coach and build creative behaviors in teams and individuals	• Explanation of different tools • Tools practice
Describe different cognitive styles in creative thinking	• Exercise to understand how they plan things: Should reveal whether they are a clarifier, ideator, developer or implementer • Review of thinking styles and preferences

SECTION FIVE: KEY LEARNING

Metaskills as Framework for Reflecting

While working on this project, I read the book *Metaskills: Five Talents for the Robotic Age* from Marty Neumeier (2013), recommended to me by one of the expert I spoke early in the project. According Neumeier metaskills or metacognitive skills from the basis for 'know-how' or savior-faire ('to know to do'). They refer to skill-based knowledge are based on doing. Working through problems it not just about knowing and doing, it is also about making. He refers to making as the process of imagining and prototyping solutions that were not there before. If you skip the making, you tend to stick to what you know and you are not progressing. The five talents are feeling (empathy and intuition), seeing (systems thinking), dreaming (applied imagination), making (design and testing) and learning (autodidactic). As I was reflecting on my key learning from this project, these metaskills form a good framework for reflection.

Feeling

Feeling refers to intuition, empathy and social intelligence. According to Neumeier feelings are central to learning, intuition and empathy. Feeling helps us to make sense of rich data and embrace complexity. He sees emotion as a partner to reason.

Feeling helped me in awakening in the developer in me. Usually when I have an idea I quickly jump into execution. While developing the course, I forced myself to keep open and not start with PowerPoint right away. Rather then just getting it done, I wanted to life the development of the course. I experimented with different methods to figure out a way forward to compose the course. I

started off with a mind mapping software program to organize my thoughts but I felt confined to the screen. My instructor suggested to work outside the screen and to structure my thoughts in the room. Lacking a blank wall, I used the floor in my home office. I spent a couple days composing my thoughts on the floor and left it there for a whole (see Figure 8). I started living with the 'course', which helped and inspired me to put the first outline together.

Figure 8. Impression of my course development activities

Additionally talking to well seasoned professionals in the field before compiling the course really helped. Their experience and passion for the trade helped me to feel what difference creativity can make and inspired me to focus on the key elements. Also the enthusiasm of the participants in the pilot and their encouragement in their feedback, made it easier to revise the course and make it better.

Seeing

Seeing refers to the ability to think whole thoughts (aka system thinking). According to Neumeier, it is about rejecting the tyranny of 'or' and embracing the genius of 'and'. It is what Roger Martin (2009) calls integrative thinking. It is about solving tension between two opposites, not by choosing one or the other, but by integrating them in a holistic solution to achieve a purpose.

Seeing helped me to combine my love for theory and context with the desire to give the participants hands-on experience and tools that they can use when leaving the course. In order to be able to coach and lead creativity and innovation, you need tools but without a manual, e.g. theoretical context, it is hard to use the tools. My challenge was to give just enough theory to sketch the context and to leave enough time to practice. Despite the short timeframe, I managed to create a course outline that focused on both in meaningful way. Additionally by clarifying how this course fitted with the overall company strategy and where to apply in their daily jobs, it provided a clear picture how slotted in overall.

Dreaming

Dreaming refers to applied imagination. According to Neumeier, applied imagination refers to the ability to harness dreaming to a purpose.

Dreaming helped to find an answer to an observation that the data-driven culture in the company not necessarily leads to divergent and new thinking but rather facilitates convergent and confirmatory thinking. This is frustrating as it makes us blind to opportunities beyond what we are doing now and are unaware of what we are loosing out on. Wouldn't be great if the course developed here would plant a seed to turns this around?

Making

Making refers to mastering the design process, including skills for devising prototypes. Neumeier makes a case for a *no-process* process and to embrace the chaotic nature of creativity. It is about getting the right idea and getting the idea right. He quotes John Cage: "It does not matter where you start as long as you start" (Neumeier, 2013, p181).

Making helped me to move from knowing to creating and doing. Although I outlined in Section Three a clear project timeline and activities, like with any good plan, it was a call for action. It was a messy process, not going according to plan, with me moving back and forwards between (re-)writing the course outline, putting together course materials, reviewing the literature, looking what others have done, piloting the course and the project write up. Having deadlines for handing in sections and the pilot helped to move the project forward, and making it happen.

Piloting a new course is always unnerving, as you make the course not to satisfy your own needs but the needs of the participants. Although you think and mainly hope that you put something interesting together, you never know until you try. Even though the second half of the course bombed, it did not feel like a failure as I learned. I gained insight in what worked, what was missing, and what needed done differently. It also gave me confidence. I am not there yet that I have all the material in my fingertips, but I surprised myself on how much I knew and what I had to bring to the group. I felt like the expert in the room. It energized me to go back to the drawing table and make it better.

Next to running the courses, I also took a couple of experience trainers in the company through the course outline to gather their feedback. This helped me to gain further confidence on what I am developing. Making showed me that the proof of the pudding is in eating it.

Learning

Learning refers to the autodidactic ability to learn new skills at will. According to Neumeier the talent of learning is a form of metacognition or

knowing about the knowing. It refers to the self-awareness that comes from observing what you think while you are thinking it. It also needs to serve a purpose coupled with a strategy, a plan to own and defend a niche what matters.

Learning helped me to make things happen. Integrating creative thinking in our daily lives at work and at home makes us more rounder and richer thinkers. So far during the master, this has remained more a theoretical concept. The development of this course and the actual teaching of it moved me along the path of being a creative leader by doing it.

It helped me to appreciate the power of reaching out to others. Although no actual collaboration took place during this course, I solicited a lot of input and feedback from others. This does not come natural to me. It costs me energy as I always think that I need to be able to do it on my own. But I learned during the project that even small nuggets of input or feedback have a major influence on what you are doing. It gives energy, inspiration and makes the end product better.

Asking for input and feedback was not the only thing I did differently. As mentioned before I tried to stay open and in the divergent stage as long as possible. To do that I tried mind mapping programs, different format of course outline (I most have tried half a dozen) etc. This enabled me to look at things in a different way and figuring out what worked for me, and out me on a path of continuously learning and doing.

SECTION SIX: CONCLUSIONS

The objective of this project was to develop a leadership curriculum to enable leaders to lead and coach creative and innovative behavior, and to pilot it. I am proud to have met this objective. The motive to develop this curriculum was a little opportunistic, as I had agreed at work that I would develop a course before I knew I would do this as a project. I am grateful to the faculty for being accommodating and allowing me to start the project earlier then planned. The development of this curriculum would have happen whether or not it being the topic of my master project, however, it would not have resulted in the same end result. Going through discipline of doing it as a project brought the rigor, dedication and reflection needed to create a good end result. It has forced me to be purposeful, spent the necessary time on it and solicit the input from others. During this journey I deepened my knowledge both on the 'what' (literature) and the 'how' (creating a curriculum).

As part of this project I also set out to develop creativity skills like Highlight the Essence, Let Humor Flow and Use it, Visualize it Richly and Colorfully, and Put Your Ideas in Context (see Torrance & Safter, 1999; Burnett & Figliotti, 2015). Running this project has put me on the right path to develop these skills. I have been conscious to unclude and focus on the essence, and I see myself being even sharper in the future. I have added playful things to the course content, and it feels good and odd at the same time. Practice and confidence might make things perfect here. Similar for Visualize it Richly and Colorfully, I always wear black and love minimalism, do I need to say more. It is about finding my own voice here. On the last one, Put Your Ideas in Context, I have done a good job. The whole curriculum has been developed to fit with company strategy.

Overall while working on this project, I was able to put creative leadership in action, and sparking creative confidence in others and myself. This project, together with the rest of this master program has given me the resources to be the creative leader as set out in my application letter for this master program. My vision was and is to become a better leader, to find a way to spark more creativity but also to be that change agent to make things happen. I also want to become more thoughtful, purposeful and disciplined at work while using the tools I learned to master during this master's degree.

On the way I have learned that next to assistors, there are resistors on my path. I wanted to end with a recent blog from Seth Godin on laziness (which means to me all the potential resistors such as not enough time, other priorities, other interests) as it perfectly words what I need to do now the masters draws to an end.

> **Lazy but talented**
> That is most of us
> You can work really hard to get a little more talented.
> And you can also work to get a little less lazy.
> It turns out that getting less lazy, more brave - more clear about your fears, your work and your mission- are all easier then getting more talented.
> Source: http://sethgodin.typepad.com/

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Appendix A: Description of the course (as it appears in the course curriculum for EMEA region)

Creativity, Innovation and Leadership

Costs	No costs (excl. travel and accommodation; max. of 10 participants)
Class length	1/2 day
Recommended for	New & Incumbent 1st and 2nd level B&T Supervisors

Content: Creativity, Innovation and Leadership.

Cancellation policy:
You must cancel out of the class 14 calendar days prior start date in order to not be charged for the class! If you cancel in less than 14 days, you may be charged the fee for this class.

Course Description
Innovation is key driver to Eastman's long term success and creativity or creative problem solving is a necessary condition for innovation. Supervisors and managers who are able to build a positive work environment that enable creative thinking and innovation is a competitive advantage. The overall objective of course is to build a "coaching toolbox" for the supervisor, which will enable them to develop their own and their team's innovative and creative behavior and to successful build the type of work environment and work culture desired at Eastman Chemical Company.

Learning Objectives
After completing the course, you will be able to:
- Define innovation and creative thinking in relation to your own function and discipline
- Understand how to assess creativity and innovation as a behavior
- Understand the role of leaders in building an innovation and creative culture.
- Understand your creative and innovative style and preferences.
- Use tools to coach and build creative and innovative behaviors in teams and individuals.

Course Content
The course is set up as workshop to maximize learning
- Creativity, Innovation and Leadership: Overview of key models
- Case study to practice assessing creativity and innovation as a behavior
- Overview of coaching tools

Appendix B: Layout of the pilot course (13 March 2017)

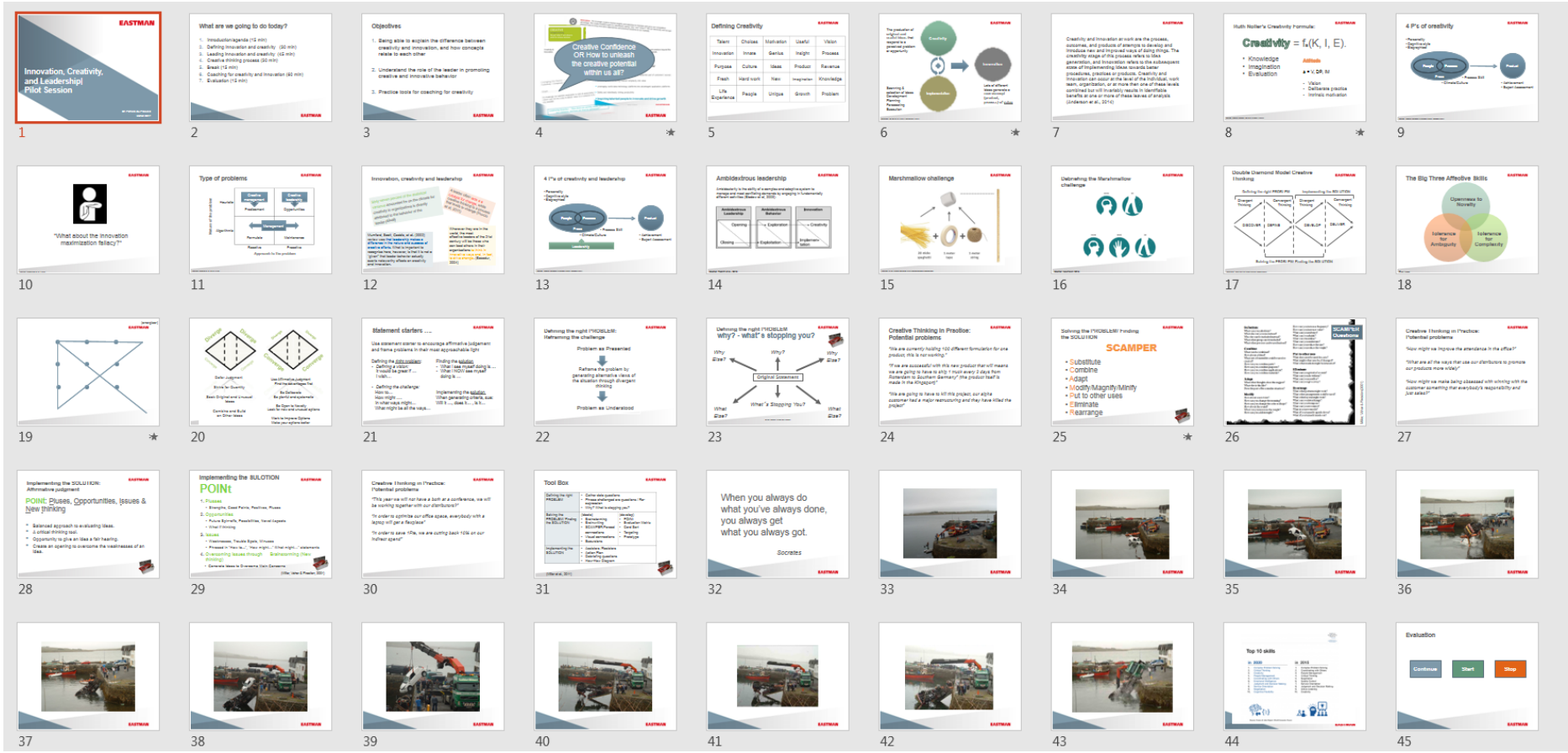
Course Objectives| To go give leaders insight in:

1. Difference between creativity and innovation
2. Role of the leader in the creative and innovative process
3. How to coach for creativity

Topic	Duration	Key Take away	Exercises	PowerPoint	Materials	Extended Learning
Introduction/ Agenda	15 min	Objectives of the course	Exercises when entering the room: 1. Rate yourself who creative you are on a scale of 1 to 10 (write one number on a post-it) 2. Write down 1 word that links these 3 words: creativity, innovation and leadership on a post-it	Agenda	• Post-its	N/A
Definig Innovation and creative	45 min	1. Participants can explain the difference between innovation and creativity, and how they relate to each other 2. Participant can explain why creativity and innovation are important for their function	1. Defining innovation: Show picture of innovation and ask to define innovation 2. Defining creativity: Pick 3 words to define creativity for a word grid 3. Discussion how both concepts relate to each other	• Relation between innovation and creativity (incl. definitions) (slides) • 4 P's of creativity • When is creativity needed: Table of problem from Puccio et al. 2011	• Pictures • Word grid	• Ruth Noller's Creativity Formula • Vehar's definitions
Leading inovation and creativity (including Creative Thinking process)	60 mi	1. Participant have a basic awareness of the notion of ambidextrous leadership 2. Participants can explain the creative thinking process in terms of divergent and convergent thinking 3. Participants understand what the key skills for	1. Short discussion: Do you ever feel like you opposite things are asked from you. 2. Exercise to experience the process: Marshmallow Challenge	• Model ambidextrous leadership • Double diamond model on creative thinking • Overview of 3 key skills: • Openness to novelty, Tolerance for Ambiguity, Tolerance for Complexity	• Spaghetti • Tape • String • Marshmallows	Adding depth to: • P of Person: e.g. Foursight, Kirton • P of Press: Ekvall

		leaders on creative thinking				
Break	15 min					
Coaching innovation and creativity	90 min	1. Participants understand and practices 2 divergent tools and 1 convergent tool works 2. Participants understand how they can coach individual /team	Practice tools: Divergent: • Forced connections • Why? What is stopping you? Convergent • Point/PPCo Note the participants will be asked to come up with their own coaching examples	• Divergent & convergent rule • Overview of tools • Overview of statement starters	• List of scenarios to kick start the coaching • Description of the tools	List of more tools
Evaluation						

Appendix C: Pilot Course PowerPoint



Appendix D: Course set up | Innovation, Creativity and Leadership

Class Length: 4 hours

Audience: Managers and supervisors

Course Description
Growth and innovation are key drivers to company's long-term success. Creativity (creative thinking) is a necessary condition for innovation. Supervisors and managers who are able to build a positive work environment that enable creative thinking and innovation have a competitive advantage. The course focuses on how creativity feeds innovation and when creative thinking is needed, and looks at what leadership behaviors, skills and style facilitates creativity. It also provides a "coaching toolbox" for supervisors to develop their own and their team's innovative and creative behavior.
This 1/2 day workshop is based 1) on the curriculum taught at the International Center for Studies in Creativity, Buffalo State of the State University of New York, the world's longest running creativity program, as part of the distance master and 2) additional pertinent literature.

Learning Objectives
After completing the course, participants will be able to:
- Define innovation and creative thinking
- Describe how creativity relates to your own function and discipline
- Describe your role as leader in building an innovation and creative culture.
- Apply tools to coach and build creative behaviors in teams and individuals.

Course Outline
- Why a course on innovation, creativity and leadership? Link with the corporate strategy
- What is creativity and how does it relate to innovation?
- How to lead for innovation and creativity? What leadership behaviors, skills and style foster creativity?
- Introduction to Creative Thinking Process (Creative Problem Solving)
    - Essentials of divergent thinking
    - Essentials of convergent thinking
- Tips and tools to improve divergent and convergent thinking in a team

Detailed outline
1. *Introductions & Expectation (20 min)*
    a. Exercise when entering the room:
        i. Rate yourself how creative you are on a scale of 1 to 10 (write one number on a post-it)
        ii. Write down what skill you need as a leader to coach innovation and creativity (on a post-it)
    b. Purpose of the course and link to the company's strategy
    c. Agenda and objectives
    d. Introductions & expectations

Key takeaway:
- How creative thinking can contribute to the company's strategy
- Alignment on expectations and objectives

2. *Defining innovation and creativity, and how both concepts related to each other (50 min)*
    a. Exercises (warm up):
        i. Adding numbers (to demonstrate the power of habit)
        ii. Wheelbarrow (to demonstrate the power of using fresh eyes)
    b. Video on blocks to creativity (see creativity.buffalostate.edu/creativity-101) + Discussion on how they rated themselves on creativity and what is holding them back to be creative
    c. Defining innovation and creativity:
        iii. Exercise: Picking 3 words to define innovation/creativity for a word grid
        iv. Discussion how both concepts relate to each other
        v. Zooming in on creativity:
            - Ruth Noller's Creativity Formula
            - 4 P's of creativity (including video)
        vi. When is creativity needed and importance for their function (includes review of Puccio et al. (2011) of types of problem)

Key takeaway:
- Being able to define innovation and creativity and how the concepts relate to each other.
- Understand when is creativity needed.
- Understand how creativity relates to their function

(Break - 15 min)

3. *Leading Innovation and Creativity (30 min)*
    a. Discussion on role of leaders in the innovation and creativity process (including Creative Change Model from Puccio et al., 2011)
    b. Key leadership characteristics, behaviors and skills for forstering innovation (including feedback exercise)
    c. Left- right brain discussion: Do you ever feel like you opposite things are asked from you.
    d. Ambidextrous leadership as an 'and' & 'and' model

Key takeaway:
- Understand the leaders' role fostering in creativity
- Understand ambidextrous leadership

4. *Creative Thinking Process (40 min)*
   a. Exercise: Marshmallow Challenge (including debrief)
   b. Creative Problem Solving Process as an example of creative thinking process
   c. Divergent vs convergent thinking principles

Key takeaway:
- Understand the creative problem solving process
- Understand the divergent and convergent thinking principles

(break - 10 min)

5. *A toolbox for coaching (60 min)*
   a. Video creative confidence (see https://www.youtube.com/watch?v=Km-L90aEaYs)
   b. Exercise: Hippo in the bathroom (warm up)
   c. Overview of statement starters
   d. Practice tools (Participants understand and practices 2 divergent tools and 2 convergent tool works)
      vii. *Divergent:* Why? What is stopping you? & Scamper
      viii. *Convergent:* Point/PPCo & Assisters & Resisters
   e. Reflection on using tools. What skills did you recognize you needed to have?
   f. Overview of tools

Key takeaway:
- Gain confidence applying 2 divergent and convergent tools
- Have a tool box

6. *Wrap up and what are you going to do different tomorrow? (15 min)*

Appendix E: Course set up | Innovation, Creativity and Leadership (Extended Version)

Class Length: 7 hours

Audience: LT

Course Description

Growth and innovation are key drivers to company's long-term success. Creativity (creative thinking) is a necessary condition for innovation. Supervisors and managers who are able to build a positive work environment that enable creative thinking and innovation have a competitive advantage. The course focuses on how creativity feeds innovation and when creative thinking is needed, and looks at what leadership behaviors, skills and style facilitates creativity. It also provides insight in thinking style associated with creative thinking and a " toolbox " for supervisors to develop their own and their team's innovative and creative behavior.
This full day workshop is based 1) on the curriculum taught at the International Center for Studies in Creativity, Buffalo State of the State University of New York, the world's longest running creativity program, as part of the distance master and 2) additional pertinent literature.

Learning Objectives

After completing the course, participants will be able to:

- Define innovation and creative thinking
- Describe how creativity relates to your own function and discipline
- Describe your role as leader in building an innovation and creative culture.
- Describe different cognitive styles in creative thinking
- Apply tools to coach and build creative behaviors in teams and individuals.

Course Outline

- Why a course on innovation, creativity and leadership? Link with the corporate strategy
- What is creativity and how does it relate to innovation?
- How to lead for innovation and creativity? What leadership behaviors, skills and style foster creativity?
- Introduction to Creative Thinking Process (Creative Problem Solving)
    - Essentials of divergent thinking
    - Essentials of convergent thinking
  - Introduction to Foursight: Thinking Profiles
  - Tips and tools to improve divergent and convergent thinking in a team

Detailed outline

1. *Introductions & Expectation (30 min)*
    a. Exercise when entering the room:
        i. Rate yourself how creative you are on a scale of 1 to 10 (write one number on a post-it)
        ii. Write down what skill you need as a leader to coach innovation and creativity (on a post-it)
    b. Purpose of the course and link to the company's strategy
    c. Agenda and objectives
    d. Introductions & expectations

Key takeaway:

- How creative thinking can contribute to the company's strategy
- Alignment on expectations and objectives

2. *Defining innovation and creativity, and how both concepts related to each other (60 min)*
    a. Exercises (warm up):
        i. Adding numbers (to demonstrate the power of habit)
        ii. Wheelbarrow (to demonstrate the power of using fresh eyes)
    b. Video on blocks to creativity (see creativity.buffalostate.edu/creativity-101) + Discussion on how they rated themselves on creativity and what is holding them back to be creative
    c. Defining innovation and creativity:
        i. Exercise: Picking 3 words to define innovation/creativity for a word grid
        ii. Discussion how both concepts relate to each other
        iii. Zooming in on creativity:
            - Ruth Noller's Creativity Formula
            - 4 P's of creativity (including video)
        iv. When is creativity needed and importance for their function (includes review of Puccio et al. (2011) of types of problem)

Key takeaway:

- Being able to define innovation and creativity and how the concepts relate to each other.
- Understand when is creativity needed.
- Understand how creativity relates to their function

(Break - 10 min)

3. *Leading Innovation and Creativity* (60 min)
    a. Exercise: Storyboarding
    b. Discussion on role of leaders in the innovation and creativity process (including Creative Change Model from Puccio et al., 2011)
    c. Key leadership characteristics, behaviors and skills for fostering innovation (including feedback exercise)
    d. Left- right brain discussion: Do you ever feel like you opposite things are asked from you.
    e. Ambidextrous leadership as an 'and' & 'and' model

Key takeaway:

- Understand the leaders' role fostering in creativity
- Understand ambidextrous leadership

(break - 10 min)

4. *Creative Thinking Process (60 min)*
    a. Exercise: Marshmallow Challenge (including debrief)
    b. Creative Problem Solving Process as an example of creative thinking process
    c. Divergent vs convergent thinking principles

Key takeaway:

- Understand the creative problem solving process
- Understand the divergent and convergent thinking principles

(break - 10 min)

5. *Thinking preference and styles and creativity (60 min)*
    a. Exercise: How do you go about cooking a dinner for friend? How do you plan your holiday? What do you do if you have hard task at work?
    b. Inside or outside the box: Cognitive styles
    c. Foursight thinking styles (including exercise to establish own thinking style and how you would assess the thinking styles in your team)

Key takeaway:

- Gain insight in how different thinking preferences and styles affect creativity
- Understand how to recognize different thinking style

(break - 15 min)

6. *A toolbox for coaching (90 min)*
    a. Video creative confidence (see https://www.youtube.com/watch?v=Km-L90aEaYs)
    b. Exercise: Hippo in the bathroom (warm up)
    c. Overview of statement starters
    d. Practice tools (Participants understand and practices 2 divergent tools and 2 convergent tool works)
        i. Divergent: Why? What is stopping you? & Scamper
        ii. Convergent: Point/PPCo & Assisters & Resisters
    e. Reflection on using tools. What skills did you recognize you needed to have?
    f. Overview of tools

Key takeaway:

- Gain confidence applying 2 divergent and convergent tools
- Have a tool box

7. *Wrap up and what are you going to do different tomorrow? (15 min)*

Appendix F: A Model of Learning Objectives

A Model of Learning Objectives

based on

A Taxonomy for Learning, Teaching, and Assessing:
A Revision of Bloom's Taxonomy of Educational Objectives

Among other modifications, Anderson and Krathwohl's (2001) revision of the original Bloom's taxonomy (Bloom & Krathwohl, 1956) redefines the cognitive domain as the intersection of the Cognitive Process Dimension and the Knowledge Dimension. This document offers a three-dimensional representation of the revised taxonomy of the cognitive domain.

Although the Cognitive Process and Knowledge dimensions are represented as hierarchical steps, the distinctions between categories are not always clear-cut. For example, all procedural knowledge is not necessarily more abstract than all conceptual knowledge; and an objective that involves analyzing or evaluating may require thinking skills that are no less complex than one that involves creating. It is generally understood, nonetheless, that lower order thinking skills are subsumed by, and provide the foundation for higher order thinking skills.

The Knowledge Dimension classifies four types of knowledge that learners may be expected to acquire or construct—ranging from concrete to abstract (Table 1).

Table 1. The Knowledge Dimension – major types and subtypes

concrete knowledge → abstract knowledge			
factual	**conceptual**	**procedural**	**metacognitive***
knowledge of terminology knowledge of specific details and elements	knowledge of classifications and categories knowledge of principles and generalizations knowledge of theories, models, and structures	knowledge of subject-specific skills and algorithms knowledge of subject-specific techniques and methods knowledge of criteria for determining when to use appropriate procedures	strategic knowledge knowledge about cognitive tasks, including appropriate contextual and conditional knowledge self-knowledge

(Table 1 adapted from Anderson and Krathwohl, 2001, p. 46.)

*Metacognitive knowledge is a special case. In this model, "metacognitive knowledge is knowledge of [one's own] cognition and about oneself in relation to various subject matters . . . " (Anderson and Krathwohl, 2001, p. 44).

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This taxonomy provides a framework for determining and clarifying learning ***objectives***.
Learning ***activities*** often involve both lower order and higher order thinking skills as well as a mix of concrete and abstract knowledge.

The Cognitive Process Dimension represents a continuum of increasing cognitive complexity—from lower order thinking skills to higher order thinking skills. Anderson and Krathwohl (2001) identify nineteen specific cognitive processes that further clarify the scope of the six categories (Table 2).

Table 2. The Cognitive Processes dimension — categories & cognitive processes and alternative names

lower order thinking skills → higher order thinking skills

remember	understand	apply	analyze	evaluate	create
recognizing • identifying recalling • retrieving	interpreting • clarifying • paraphrasing • representing • translating exemplifying • illustrating • instantiating classifying • categorizing • subsuming summarizing • abstracting • generalizing inferring • concluding • extrapolating • interpolating • predicting comparing • contrasting • mapping • matching explaining • constructing models	executing • carrying out implementing • using	differentiating • discriminating • distinguishing • focusing • selecting organizing • finding coherence • integrating • outlining • parsing • structuring attributing • deconstructing	checking • coordinating • detecting • monitoring • testing critiquing • judging	generating • hypothesizing planning • designing producing • constructing

(Table 2 adapted from Anderson and Krathwohl, 2001, pp. 67–68.)

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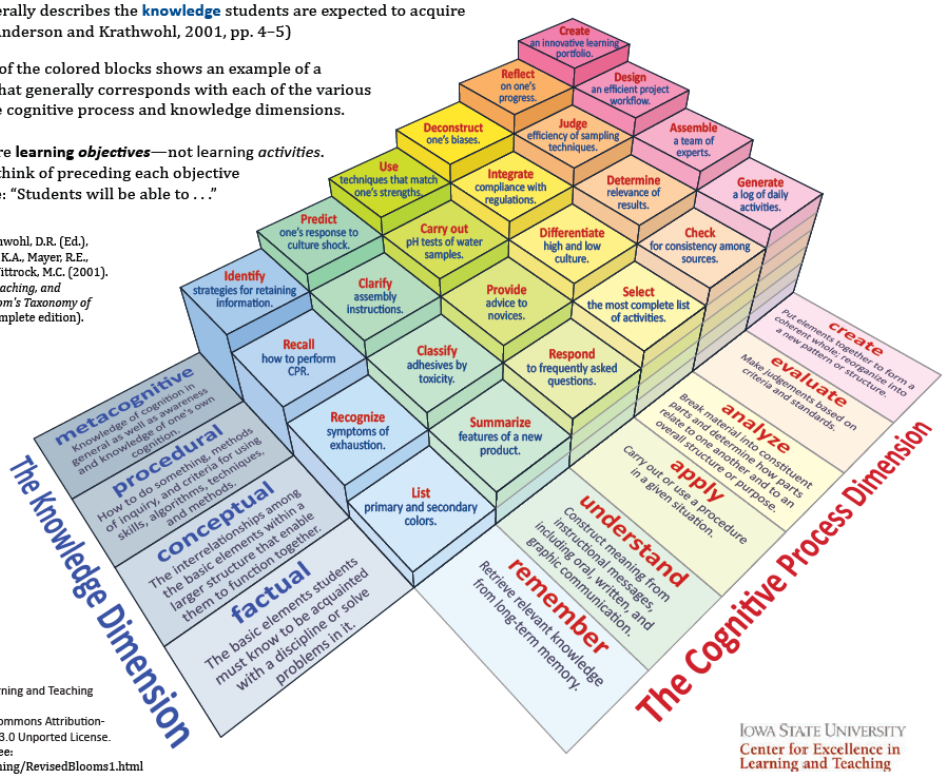
A statement of a **learning objective** contains a **verb** (an action) and an **object** (usually a noun).

- The **verb** generally refers to [actions associated with] the intended **cognitive process**.
- The **object** generally describes the **knowledge** students are expected to acquire or construct. (Anderson and Krathwohl, 2001, pp. 4–5)

In this model, each of the colored blocks shows an example of a learning objective that generally corresponds with each of the various combinations of the cognitive process and knowledge dimensions.

Remember: these are **learning *objectives***—not learning *activities*. It may be useful to think of preceding each objective with something like: "Students will be able to . . ."

*Anderson, L.W. (Ed.), Krathwohl, D.R. (Ed.), Airasian, P.W., Cruikshank, K.A., Mayer, R.E., Pintrich, P.R., Raths, J., & Wittrock, M.C. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's Taxonomy of Educational Objectives* (Complete edition). New York: Longman.



Model created by: Rex Heer
Iowa State University
Center for Excellence in Learning and Teaching
Updated January, 2012
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For additional resources, see:
www.celt.iastate.edu/teaching/RevisedBlooms1.html

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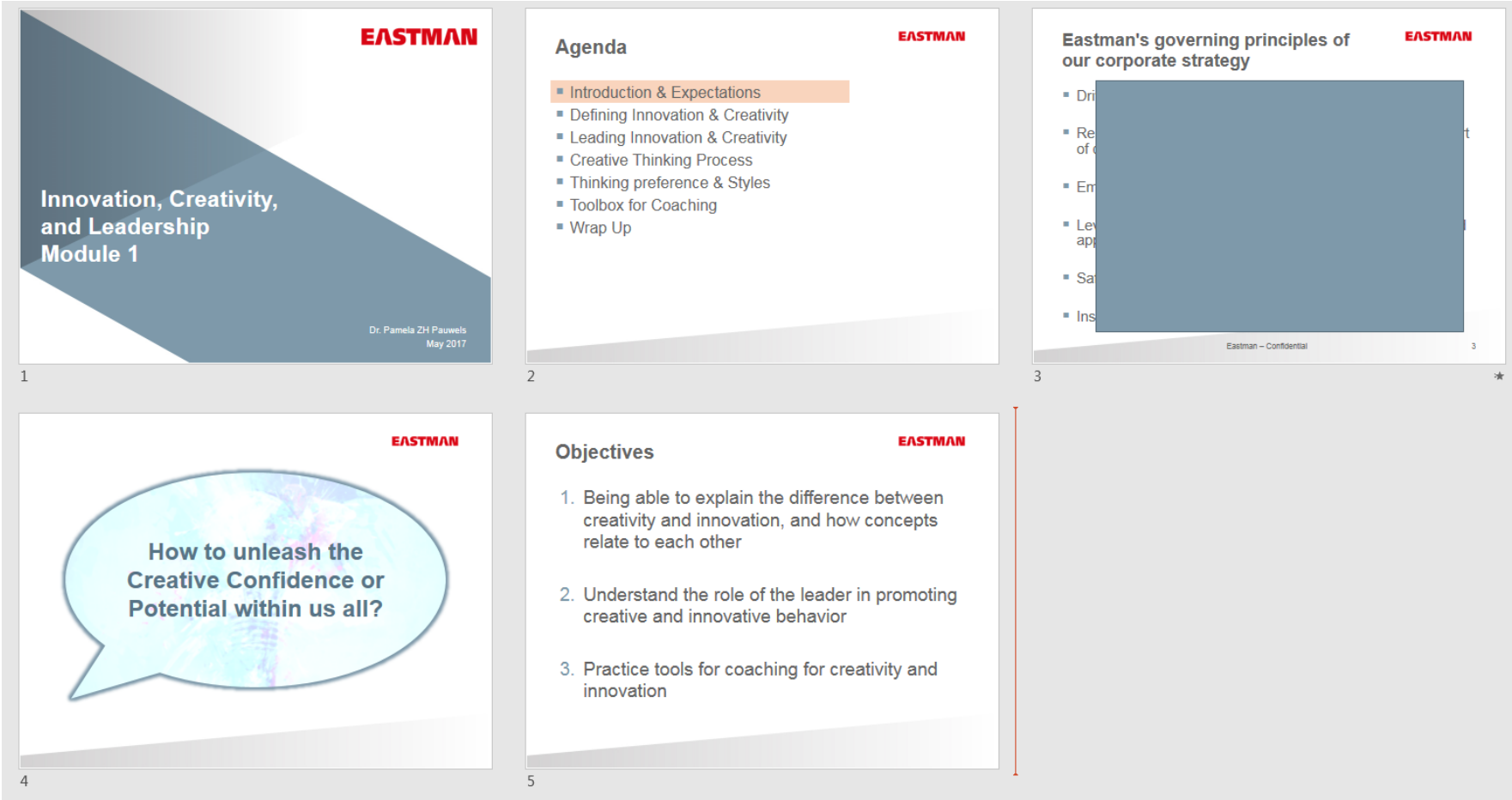
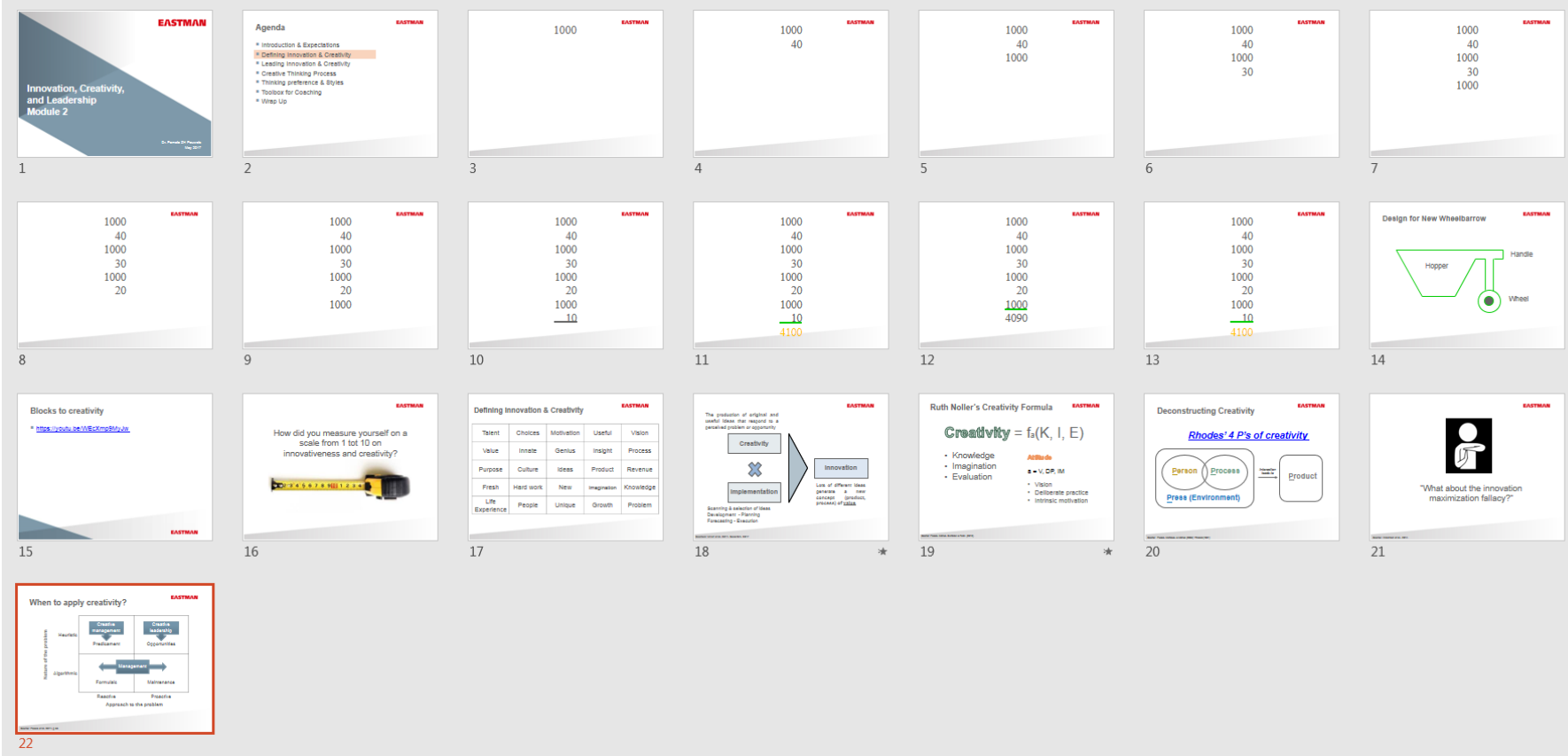
Appendix G: Overview of course modules (PowerPoint)

Module 1: Introduction & Expectation

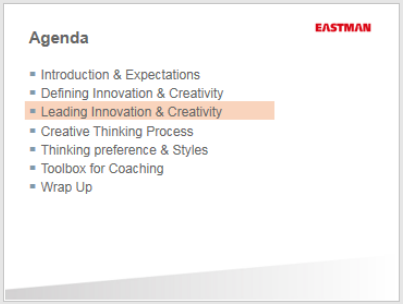


Module 2: Defining Innovation & Creativity



Module 3: Leading Innovation & Creativity

1



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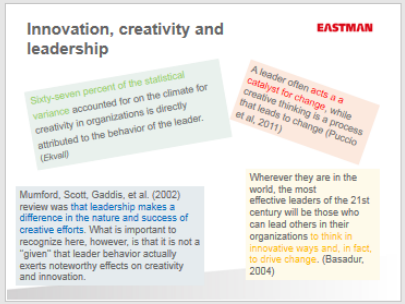

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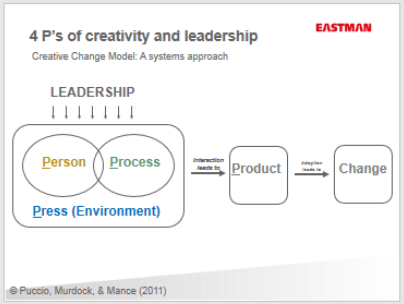

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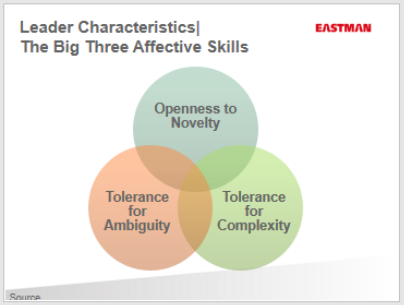

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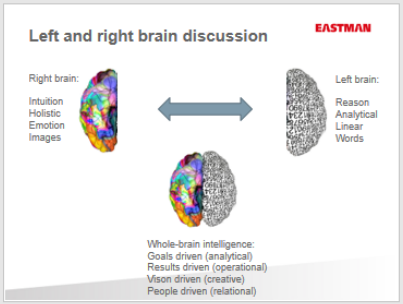

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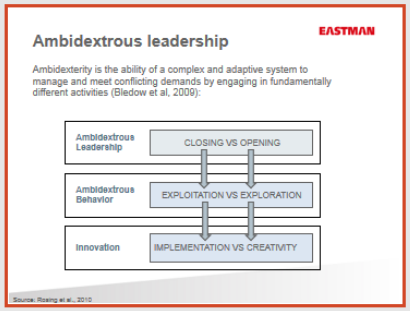

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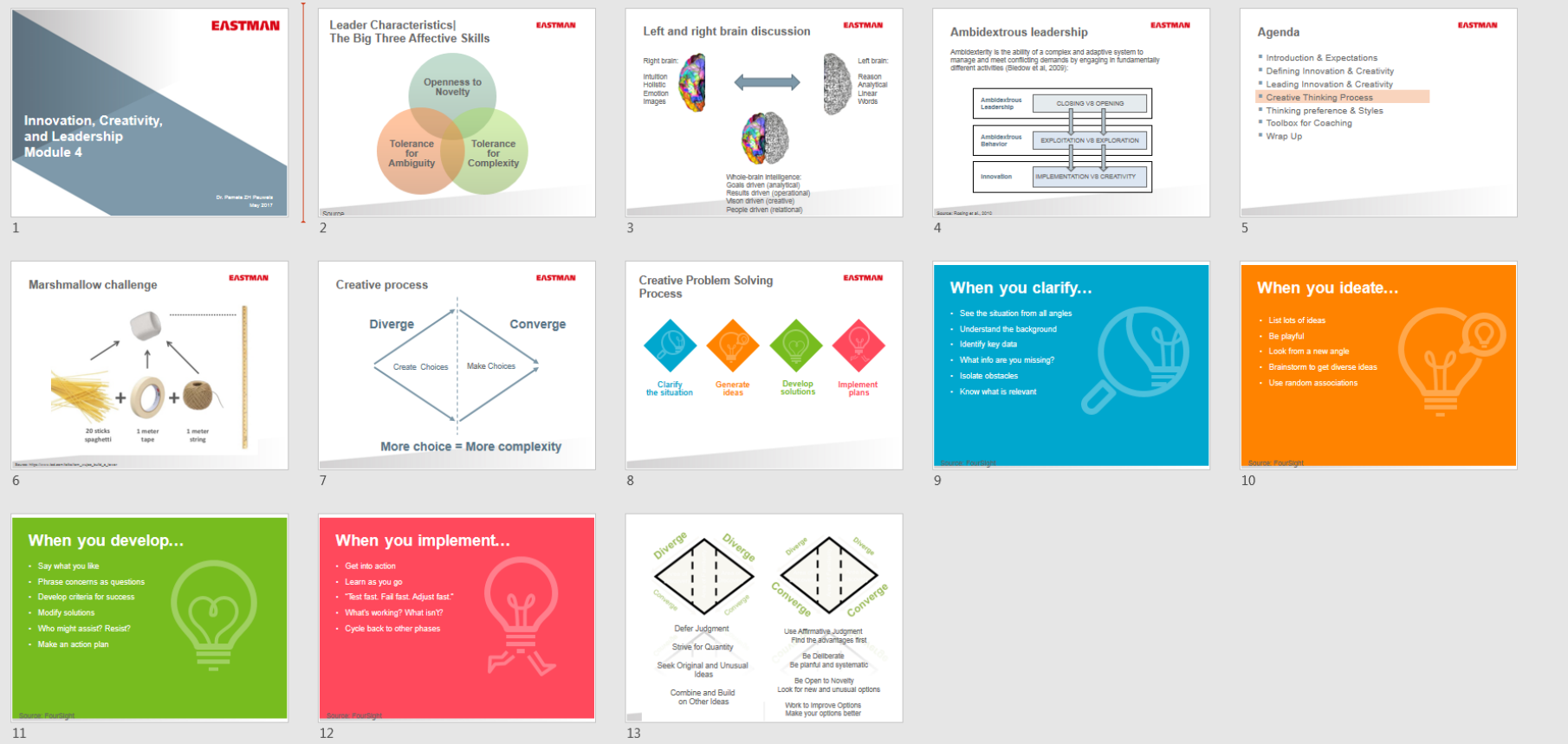
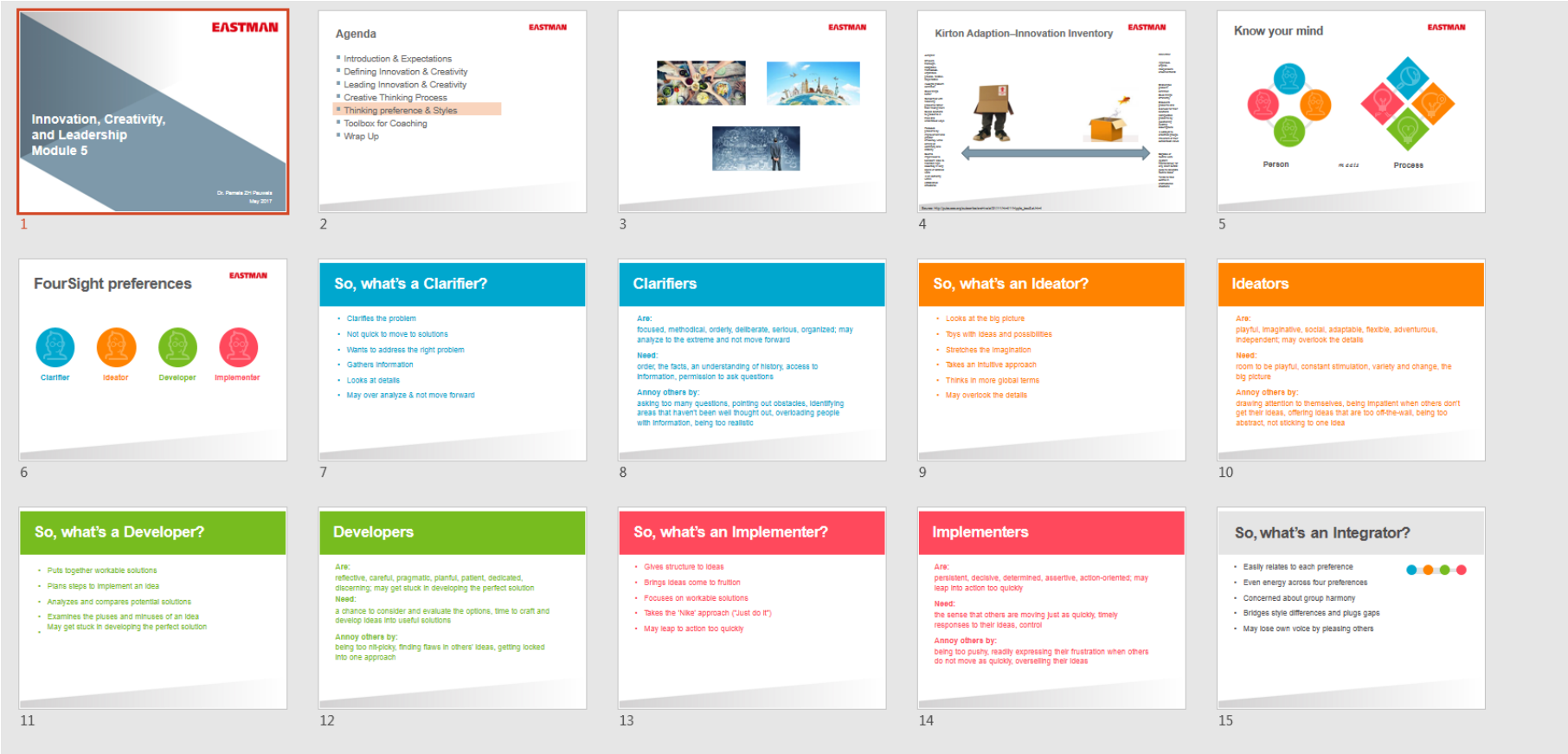
Module 4: Creative Thinking Process



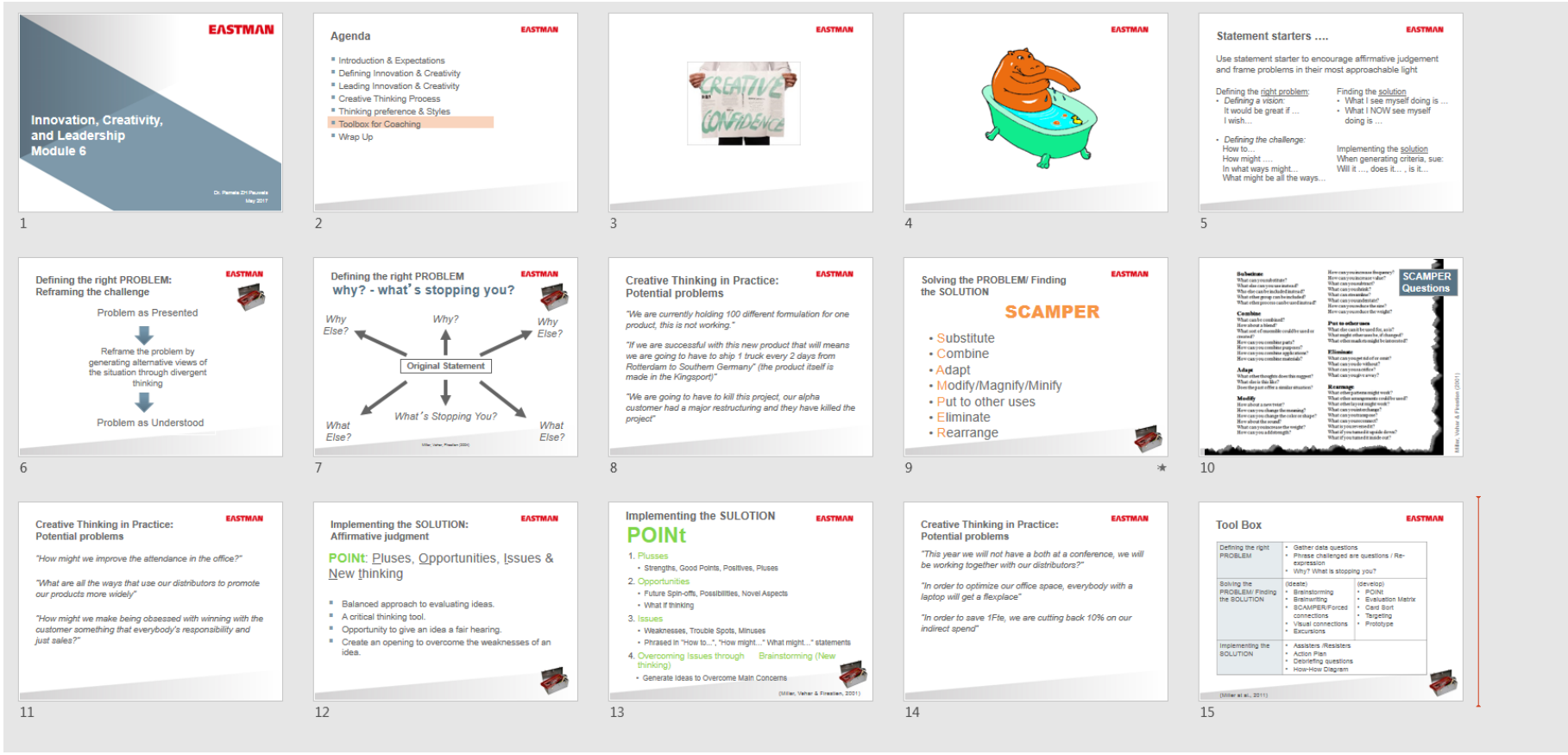
Note: FourSight slides used with permission from Dr. G. Puccio

Module 5: Thinking Preference and Styles

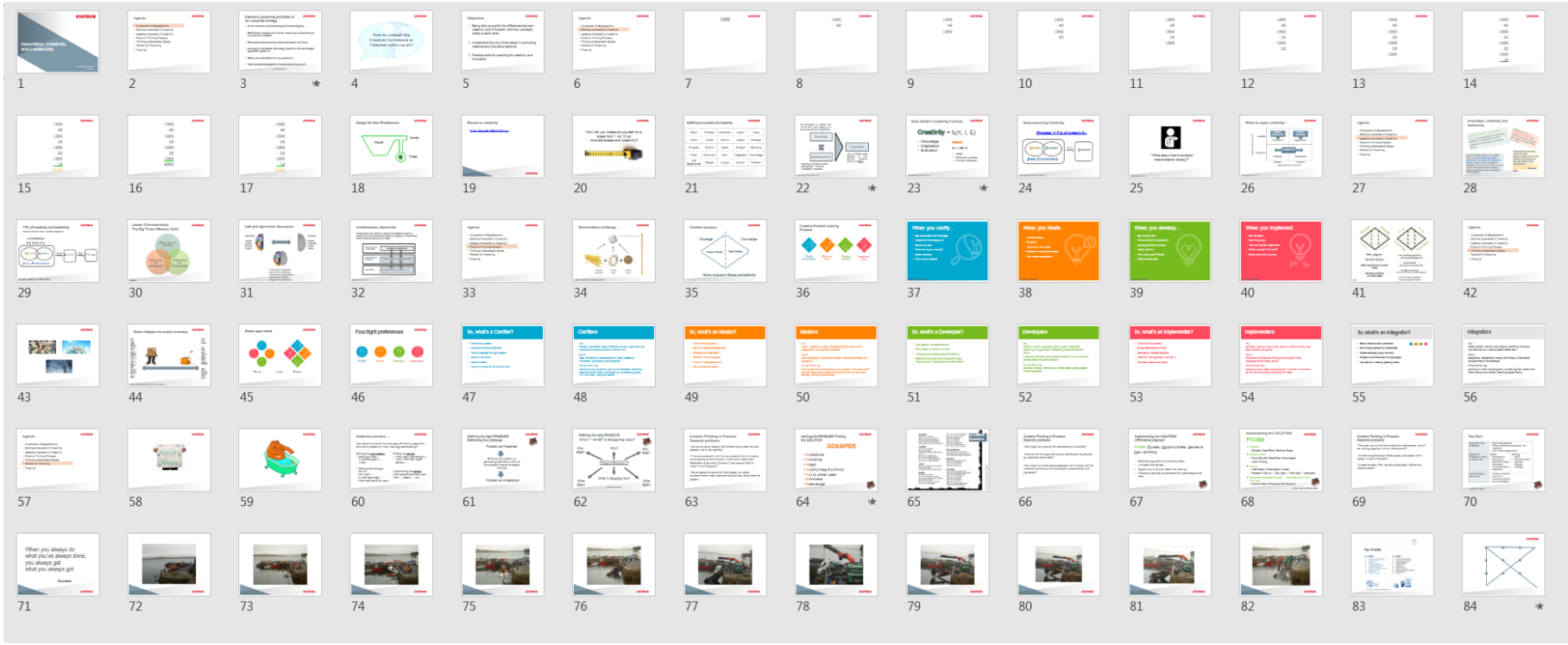


Note: FourSight slides used with permission from Dr. G. Puccio

Module 6: Toolbox for Coaching



Example: Full day course



Appendix H: Feedback on Full Day Course Delivered on 4 May

"...., just wanted to add my thoughts. Pamela did a fantastic job of facilitating a conversation with this group about leadership barriers to creativity and innovation AND taught us some great tools to use to get better at it. My team is planning to utilize some of the assessment tools to make sure we are getting everyone's best natural talent in the innovation process." (VP Innovation)

"I just wanted to follow up to let you know how many great comments and feedback I have received on last Thursday's session. I am sorry I had to miss it but I know that it was very beneficial to many. Congratulations and thank you for a great job!" (VP Marketing and Sales)

"It was wonderful! Thank you for your time, energy and knowledge! J " (Director Marcom)

"I really enjoyed your class Pamela! The balance of lecture, discussion and exercises like the wheelbarrow was perfect. There is quite a bit of content that I will find useful to share with team members too. Thank you. " (Director Application Innovation)

"Thanks as I actually used some of your suggestions this morning with my team on brainstorming some problem areas for ……" (Director Functional Films)

" .., the creativity training was EXCELLENT! Pamela did a fantastic job and the whole group was SO engaged. We learned a lot and had many wonderful discussions. I took away a lot of ideas and techniques that I want to apply during the xxxx work, and I think a lot of what we talked about would be VERY beneficial to the BOM teams." (Director Global Marketing)

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Pamela ZH Pauwels

9 May 2017

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Date