Master Thesis Nick Hopmans

From Intuition to Evidence

The effects of an evidence-based creativity training, aimed at debunking common lay theories about creativity, on employees' knowledge of how to foster creativity in business contexts

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ABSTRACT

In today's fast-paced, innovation-driven organizational landscape, understanding and fostering creativity has become increasingly critical. This study, conducted in the Netherlands, examines whether a brief, evidence-based (EB) online training focused on debunking frequently held lay theories about creativity, can strengthen applied creativity knowledge in a workplace context. A total of 290 Dutch employees (aged 20–85) spanning Marketing, HR, R&D, and Facility Management were randomly assigned to either 15-minute video debunking creativity myths or a control group which did not receive an intervention. Creativity knowledge was assessed both before and after the intervention using validated, theory-informed tests grounded in Rhodes' 4P framework. Results showed participants initially endorsed approximately 40% of common creativity myths. Post-training, those in the EB-training group significantly improved their applied creativity knowledge (increase ≈ 1.7 points out of 9) particularly among individuals with lower baseline scores. No significant differences were found across age groups, indicating the training's equal effectiveness across generations. Departmental experience did not predict baseline knowledge. These findings suggest that brief, online EB-training effectively challenges misconceptions and enhances creativity understanding in professional settings in the Netherlands.

1. INTRODUCTION

1.1 Theoretical background

Creativity is increasingly recognized as a crucial life skill, particularly in the 21st century (Valverde et al., 2020). It is seen as essential for adapting to changing environments and for solving complex problems. As society faces increasing demands for innovation, there is a growing need for creative, flexible, and competent individuals capable of tackling complex tasks without predetermined procedures (Blidaru, 2022; Sternberg & Lubart, 1998).

In organizational context, creativity is valued for its potential to drive innovation, improve competitiveness, and to enhance managerial effectiveness (Yordanova, 2016). As workplaces continue to evolve in response to technological advancements and shifting market demands, creative thinking is gaining prominence as a core skill (WEF, 2025). It is thus logical that organizations increasingly prioritize creativity as a key competency in their workforce.

According to the World Economic Forum's Future of Jobs Report 2025, employers rank creative thinking among the top essential skills for the workforce. 57% of the employers considers it a core skill (WEF, 2025). It ranks fourth overall, following analytical thinking (69%), resilience, flexibility, and agility (67%), and leadership and social influence (61%). Additionally, it is closely followed by motivation and self-awareness (52%), technological literacy (51%), and empathy and active listening (50%), highlighting its important role in the job market.

Beyond its current relevance, creative thinking is also one of the skills projected to see a significant rise in demand between 2025 and 2030, with a net increase of 66% according to employer expectations (WEF, 2025). This places it among the top-growing skills, alongside AI and big data (87%), networks and cybersecurity (70%), and technological literacy (68%) (WEF, 2025). This rising demand was already evident in earlier data from the World Economic Forum's Future of Jobs Report 2023, which identified creative thinking as the fastest-growing core skill across all industries, with 73.2% of companies expecting its importance to increase by 2027, surpassing even AI and big data (WEF, 2023). This continuity between the 2023 and 2025 reports underscores the urgency for organizations to not only recognize, but also actively develop and embed creativity across their workforce.

Creativity has captivated and held significance for people not only in contemporary society, but throughout human history (Mithen, 1998). It is therefore logical that individuals strive to understand creativity, often forming lay theories. Those are ‘’informal theories and beliefs that lay people hold about a phenomenon and its causes or consequences’’ (e.g., Furnham, 1988). However, the lack of understanding about what can foster creativity, such as optimized (virtual) environments (e.g., Ritter et al., 2012; Hooijdonk et al., 2022) and effective creative thinking techniques (e.g., Gu et al., 2022), can lead to inefficient resource allocation and missed opportunities for success.

People hold various Lay theories about creativity. Many believe creativity is innate, possessed by few, and manifests as sudden, unexplained inspiration (Nakano et al., 2023). These lay beliefs contradict scientific evidence (Baas et al., 2015).

One useful framework for categorizing these lay theories is the ‘Four P’ model of creativity, which differentiates between the creative Person, Process, Press (or Place), and Product (Rhodes, 1961). This model is widely used in creativity research (Ritter & Rietzschel, 2017). For this study, it serves as a structure to identify and analyze the various misconceptions about creativity. Specifically, it helps to distinguish between lay theories regarding who is

considered creative (Person), how creativity occurs (Process), which environmental conditions influence creativity (Place), and what is creative (Product).

1.2 Practical Relevance

Misconceptions about creativity can influence how individuals judge, expect, and cultivate creativity (Paek, 2020). Because understanding these misconceptions impacts people's choices in shaping circumstances to stimulate creativity, it is crucial, to understand them. Not only do they impact people's choices, they also have a counterproductive effect on creative performance (Agogué et al., 2024). As a result of these misconceptions, business leaders and managers may develop or implement costly, ineffective, even harmful strategies. (Ritter & Rietzschel, 2017). Therefore, it is important to address the misconceptions about creativity and promote understanding of creativity to unlock the creative potential in corporate environments to drive innovation, and to maintain a competitive edge in the market (Nakano et al., 2023). Many organizations claim to value creativity and innovation, but in reality, translating these ideals into practice remains a challenge (Baryniene & Dauknyte, 2015).

1.3 Academic Relevance

Misconceptions about creativity shape the design and delivery of creativity training: while numerous programs claim to enhance creative thinking, many lack grounding in empirical research and may inadvertently reinforce popular myths rather than dispel them (Kim, 2019). This underscores the critical need for evidence-based interventions that not only teach creative thinking techniques but also correct false beliefs. Our study addresses this need by connecting theory to practice in workplace settings and empirically testing whether evidence-based training (EB-training) can enhance conceptual understanding of creativity.

From an academic standpoint, this research fills two important gaps in the literature. First, most creativity training focuses on enhancing divergent thinking, with little attention paid to improving individuals' conceptual knowledge of creativity itself. As highlighted by Baas et al. (2015), a stronger grounding in scientific understanding is essential for effective creativity management. Second, despite frequent calls for rigor, many existing studies on creativity training still suffer from weak research designs, such as lacking control groups, relying on small or unbalanced samples, or using ambiguous outcome measures (Scott et al., 2004; van

Broekhoven et al., 2020). This limits their credibility and slows theoretical advancement. By addressing these issues, our study contributes both theoretical clarity and methodological rigor to the field of creativity training.

1.4 Research Objectives

This study addresses these issues by employing a controlled experimental design with a relatively large and diverse sample (N = 290), the inclusion of a control group, and clearly operationalized and theory-informed measures for both baseline knowledge and knowledge of creativity enhancement, grounded in prior literature but not yet formally validated psychometrically.

By addressing these gaps, this study aims to evaluate whether an evidence-based (EB) training can effectively correct misconceptions about creativity and improve employees' knowledge of creativity enhancement. To this end, the study first identifies which lay theories or misconceptions are most widespread, based on their prevalence in academic literature. It then investigates the effectiveness of the EB-training in correcting these misconceptions.

Additionally, the study explores two contextual factors. First, it examines the extent to which age moderates the effectiveness of the training, based on literature suggesting that younger individuals tend to be more receptive to new information due to greater curiosity and cognitive flexibility, whereas older individuals may be more resistant to belief change (Ng & Feldman, 2012; Shearring, 1992). Second, it investigates whether baseline knowledge of creativity differs across departments. Drawing on Domain-Specificity Theory (Baer, 1998) and Situated Cognition Theory (Brown, Collins, & Duguid, 1989), it is assumed that individuals develop different intuitive beliefs about creativity depending on the professional context in which they work. This leads to the following research question:

Does an EB-training aimed at debunking misconceptions about creativity enhance employees' knowledge on how to foster creativity in a business context, even when accounting for their baseline knowledge, and what role does age play in moderating this effect?

2. THEORETICAL FRAMEWORK

2.2 Creativity

2.1.1 Defining Creativity.

A clear definition of creativity is an essential starting point, as it forms the foundation for both the measurement instruments and the EB-training that are used in this study. The definition of creativity is a topic of ongoing debate within academic research. While some argue that creativity lacks a single, clear definition (Valcheva, 2019), others suggest there is a growing consensus around core components (Dow, 2022). The most widely accepted and frequently cited definition characterizes creativity as the ability to produce ideas, solutions, or products that are both original and useful (Amabile, 1983; Mumford, 2003; Sternberg & Lubart, 1999). In this definition, originality refers to novelty, uniqueness, or non-conformity, whereas usefulness concerns appropriateness, practicality, or value to an individual or social group (Barron, 1955; Runco, 1988; Stein, 1953). This definition has also received critique. For example, Green et al. (2023) argue that traditional definitions overly emphasize creative products, neglecting the underlying creative processes. In response, they propose a process-oriented definition, viewing creativity as "internal attention constrained by a generative goal." Similarly, other scholars have emphasized that creativity is not solely an outcome but also a cognitive and behavioral process (MacKinnon, 1962; Guilford, 1967; Sternberg & Kaufman, 2010).

In entrepreneurship and organizational literature, creativity is similarly viewed as a universal and multidimensional construct, encompassing novel and valuable ideas or solutions that drive innovation (Batey & Furnham, 2006; Cropley, 2009). Two major perspectives guide creativity research. The first one is the functionalist perspective, which highlights the production of new and useful ideas. The second is the outcome-based perspective, which focuses on the generation of valuable products and services (Allen, 2009; Drazin, Glynn, & Kazanjian, 1999; Woodman, Sawyer, & Griffin, 1993). To comprehensively study creativity, researchers often apply Rhodes' (1961) 4P model, which conceptualizes creativity as the interaction between four components: Person (the individual and their traits), Process (characteristics and behavioral mechanisms), Product (the outcome), and Press (the environment).

2.1.2 How Creativity Creates Value in Organizations.

Creativity plays a crucial role in generating value for organizations, particularly in this dynamic and competitive business environment (Abimiku, 2016). It is widely recognized as the foundation for innovation, driving competitive advantage, economic growth, and long-term sustainability (Schwab & Schwab, 1997; Vakanjac, 2020). Encouraging creativity across all organizational levels is essential for fostering a culture of innovation and enabling the development of new products, services, and processes (Ogbari et al., 2015; Abimiku, 2016).

Research shows that creative practices not only support strategic differentiation but also contribute to tangible business outcomes such as increased return on investment and a broader customer base (Ogbari et al., 2015). Therefore, creativity in organizations leads to competitive advantages. Moreover, creativity serves as the starting point of the innovation process, initiating the progression from idea generation to implementation and organizational change (West & Farr, 1990). It enables companies to develop innovative solutions, explore new business models, and to strengthen their competitive position in the market (Smailhodzic & Berberović, 2020; Laužikas & Mokšeckienė, 2013). Given the importance, it is essential that creativity is understood correctly and used optimally across the organization.

2.1.3 Knowledge of Creativity.

Understanding creativity not only requires a clear definition and appreciation of its organizational value, but also insight into how it is cognitively represented by individuals. Although knowledge of creativity as a formal construct is not widely standardized in existing literature, it can be understood as an individual's beliefs, awareness, and understanding of what creativity entails, how it can be identified, and how it may be stimulated in oneself or others (Baas et al., 2015; Ritter & Rietzschel, 2017; Karwowski & Barbot, 2016). Knowledge of creativity plays a central role in how individuals approach creativity in practice. For instance, in evaluating your own creative abilities, engaging with creative tasks, or supporting creativity in others.

Although many studies focus on measuring creativity as a trait or performance outcome, less attention has been paid to assessing how people understand creativity itself. Existing tools, such as divergent thinking tasks or self-reports, are not designed to measure individuals' knowledge of creativity. They often face conceptual or psychometric limitations (Said-Metwaly et al., 2017; Reiter-Palmon & Schoenbeck, 2020). Because such knowledge plays a key role in how creativity is fostered, there is a need for more targeted assessment tools. Therefore, this

study introduces two new constructs: baseline knowledge of creativity and knowledge of creativity enhancement. These will be discussed in the following section.

2.1.4 Baseline Knowledge of Creativity.

Baseline knowledge of creativity refers to individuals' existing, often unexamined and intuitive understanding of creativity. This form of knowledge is typically shaped by personal experience, cultural exposure, education, and social context, and aligns with the concept of lay theories (Furnham, 1988; Ritter & Rietzschel, 2017) and implicit theories of creativity (Dweck, 1999; Karwowski, 2014). It includes beliefs about the nature of creativity, who is creative, and whether creativity is innate or malleable. Because these beliefs are not always grounded in empirical evidence, they may be incomplete, biased, or inaccurate.

2.1.5 Knowledge of Creativity enhancement.

Knowledge of creativity enhancement refers to a more applied and reflective understanding of the strategies, interventions, environmental conditions or actions that enhance creativity in individuals and teams. This concept draws on metacognitive theory (Flavell, 1979), which emphasizes the role of self-awareness and regulation in guiding effective thinking and learning. Knowledge of creativity enhancement includes an individual's ability to recognize and select evidence-based practices that enhance creativity.

2.1.6 Lay theories of creativity.

Although creativity is increasingly recognized as a key competency in modern organizations, many people still hold inaccurate or oversimplified beliefs about creativity. These informal beliefs, known as lay theories, stem from cultural norms, personal experiences, or popular media, rather than from scientific evidence (Ritter & Rietzschel, 2017). As such, they can distort how creativity is evaluated, supported, and developed in professional settings. These lay theories are discussed in more detail in Section 2.2

Before exploring the effects of a training intervention to address these misconceptions, it is first necessary to assess whether individuals actually reject them. To examine this, the following hypothesis is proposed:

H1: individuals do not successfully reject common lay theories about creativity.

2.1.7 Department based Baseline Knowledge of Creativity.

According to Domain-Specificity Theory (Baer, 1998), creativity develops within specific domains rather than being universally. Similarly, Situated Cognition Theory (Brown, Collins, & Duguid, 1989) posits that knowledge is formed and shaped by the context in which it is applied. Building on these perspectives, this research assumes that individuals develop knowledge about creativity through their work-related experiences. Consequently, these experiences lead to department-specific baseline knowledge of creativity, whereby employees in each department develop a relatively stronger understanding of the aspect of creativity most relevant to their department. Drawing on Rhodes' 4P model of creativity (Person, Process, Press, Product; 1961) Each of the four dimensions will be discussed in relation to the departmental contexts, followed by a hypothesis that reflects the expected variation in baseline knowledge across departments.

Person. focuses on the traits, abilities, and motivational factors that contribute to individual creativity. This includes characteristics such as openness, curiosity, and intrinsic motivation. Professionals in Human Resources (HR) are closely involved with identifying and developing such qualities through activities like recruitment, training, performance evaluation, and talent development (Chaudhary, 2024; Chillala, 2024; Arbatani et al., 2016). As a result, HR employees are likely to develop a better understanding of the creative person than employees from other departments do, aligning their knowledge with the Person component. Therefore, it is hypothesized that:

H2: Human Resource employees demonstrate higher baseline knowledge of creativity related to the creative person than employees from other departments.

Press. refers to the physical and social environment in which creativity occurs. This includes factors such as workspace design, infrastructure, and the overall atmosphere that can either support or hinder creative thinking. The Facility Management (FM) department plays a key role in shaping these conditions through services like maintenance, energy systems, infrastructure, cleaning, and security (Viera & Katarina, 2018; Fildier, 2009). By managing the environments where creative work takes place, FM employees are likely to develop better understanding related to the creative environment than employees from other departments do. These responsibilities align their understanding of creativity most closely with the Press component. Therefore, it is hypothesized that:

H3: Facility Management employees demonstrate higher baseline knowledge of creativity related to the creative environment (press) than employees from other departments.

Product. focuses on the outcomes of creative effort, such as tangible goods, services, or ideas. In organizational contexts, Marketing departments are closely involved in managing and evaluating these outputs through activities such as product development, pricing, distribution, promotion, and market research (Batsenko et al., 2022; Smith et al., 2020; Eavani & Nazari, 2012). Their responsibility for shaping and communicating product value positions them to engage frequently with the end results of creative processes. As such, marketing professionals are likely to develop better knowledge of the creative product than employees from other departments do. Therefore, it is hypothesized that:

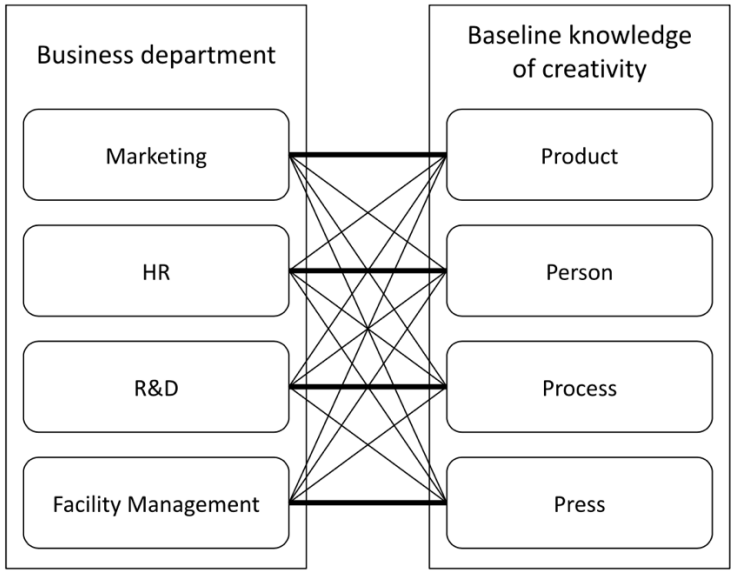
H4: Marketing employees demonstrate higher baseline knowledge of creativity related to the creative product than employees from other departments.

Process. refers to the cognitive strategies, workflows, and problem-solving methods involved in generating and refining novel ideas. The Research and Development (R&D) department is fundamentally engaged in these activities through systematic innovation processes, experimentation, and iterative development aimed at improving products, services, and productivity (Albert et al., 2016; Gutterman, 2023). R&D teams apply strategic planning, performance evaluation, and quality improvement frameworks to manage and guide creative efforts (Lamb & Dale, 1994; Szakonyi, 1994). Given their continuous focus on discovery and innovation, R&D professionals are expected to develop a better understanding of the creative process than employees from other departments do. Therefore, it is hypothesized that:

H5: R&D employees demonstrate higher baseline knowledge of creativity related to the creative process than employees from other departments

Figure shows the hypothesized relationships between departmental roles and baseline knowledge of creativity across the four dimensions of Rhodes' 4P model (Rhodes, 1961).

Figure 1.



** A thicker line means a higher level of baseline knowledge*

2.2 Lay Theories

2.2.1 Defining Lay theories.

Lay theories refer to the '*'informal beliefs and assumptions that individuals hold about a phenomenon, including its causes and consequences''* (Furnham, 1988). According to Ritter and Rietzschel (2017), these theories are not typically grounded in scientific evidence or systematic analysis, but rather emerge from personal experience, cultural norms, and social interactions. As such, they often resemble stereotypes or common sayings (e.g., "everybody knows that..."). Lay theories can be encountered in everyday conversations, popular media, books, news articles, and websites. They are not always explicitly stated but may also exist as unspoken assumptions or implicit beliefs (Ritter & Rietzschel, 2017). People use lay theories to make sense of the world around them and to predict outcomes in their daily lives (Ramírez & Levy, 2010).

2.2.2 Lay theories compared to Scientific theories.

According to Saracho (2011), scientific theories are developed by psychologists and other social scientists based on empirical research into individuals' creative performance. In contrast, lay theories are formed by non-experts and are rooted in everyday experiences, and intuitive assumptions about creativity (Saracho, 2011). Furnham (1988) outlines several key

characteristics that distinguish lay theories from scientific theories. First, lay theories often lack explicitness, meaning that individuals may struggle to clearly articulate their beliefs. Second, they tend to be fragmented and inconsistent, lacking the coherence typically found in scientific frameworks. Third, lay theories are usually geared toward verification rather than falsification, as people are more inclined to apply their beliefs than to rigorously test them. Finally, they tend to focus more on describing content, such as types or categories, than on explaining the underlying processes that produce certain outcomes. The distinction between lay and scientific theories justifies the need to identify and address common misconceptions about creativity. As these lay theories often guide workplace beliefs and practices despite lacking empirical support, correcting them through evidence-based training may help align organizational approaches with scientifically grounded understandings of creativity.

2.2.3 Lay theories of Creativity.

Lay theories of creativity refer to the informal, often implicit beliefs that individuals hold about the nature, origins, and manifestations of creative ability (Ritter & Rietzschel, 2017). Although widely held, research shows that many of these lay theories of creativity are inaccurate or only partially aligned with scientific findings (Ritter & Rietzschel, 2017). They often reflect assumptions about whether creativity is an innate talent or a skill that can be developed, as well as about the traits, behaviors, and even mental health conditions associated with creativity (Kasof, 1995; Runco & Johnson, 2002; Rudowicz et al., 2009; Schlesinger, 2009; Sternberg, 1985; O'Connor et al, 2013). Other common lay theories of creativity relate to gender stereotypes (Kaufman, 2006) and cross-cultural differences in creative ability (Wong & Niu, 2013). These beliefs are not merely passive assumptions since they shape how people perceive and evaluate creativity in themselves and others (Runco et al., 1993) For instance, people who view creativity as malleable, tend to show greater interest in creativity and demonstrate better creative problem-solving skills (O'Connor et al., 2013). Moreover, lay theories influence judgments about what counts as creative, who is considered creative, and which environments or outcomes are seen as conducive to creativity (Ritter & Rietzschel, 2017). They function as evaluative standards that affect how creativity is fostered, recognized, and rewarded within social and organizational settings (Levy, Stroessner, & Dweck, 1998; Sternberg, 1985).

Benedek et al. (2021) conducted a large-scale survey of 1,261 adults across six countries and confirmed the widespread endorsement of several creativity myths, such as beliefs that creative achievements stem from sudden inspiration or arise primarily from right-brain processes. They also found that stronger belief in these myths correlated with lower

education levels, greater reliance on popular media (like TV and social media), and personality traits associated with openness to dubious claims and conformity

2.2.4 Consequences of Lay Theories of Creativity in Organizations.

In organizational contexts, managers and decision-makers may unknowingly rely on lay theories when designing interventions, shaping work environments, or allocating resources. According to the Theory of Reasoned Action (Fishbein & Ajzen, 1975) and its extension, the Theory of Planned Behavior (Ajzen, 1991), beliefs form the foundation of attitudes and behavioral intentions, which ultimately drive decision-making. Inaccurate beliefs about creativity, therefore, can directly lead to misguided actions in organizational practice. For instance, a manager who assumes that relaxation inherently enhances creativity might invest heavily in creating relaxation rooms. (Baas, 2015). Although such decisions may be well-intentioned, they are often based on inaccurate assumptions. As a result, lay theories of creativity misguide managerial action, leading to suboptimal practices, wasted resources, and missed opportunities for innovation (Baas et al., 2015; Ritter & Rietzschel, 2017).

Importantly, Benedek et al. (2021) provide empirical support for these concerns. Using a large-scale international sample, they found that belief in creativity myths is not only a reflection of knowledge gaps but is also significantly associated with personality traits like higher authoritarianism and lower critical-thinking disposition. These traits make individuals more prone to accept simplistic or appealing narratives, which may further drive organizational choices toward visible but ineffective creativity initiatives.

2.2.5 Using Rhodes 4P's model to structure lay theories of creativity.

To better understand and systematically categorize diverse lay theories of creativity, a structured framework is needed. One way of structuring the lay theories of creativity, as suggested by Ritter and Rietzschel (2017), is through the 'Four P' model of creativity. The model differentiates between Person, Process, Press (or Place), and Product (Rhodes, 1961) and is widely used in the academic literature to categorize various aspects of creativity. For this reason, this model will be applied in this study. Accordingly, the following dimensions of creativity will be addressed: the characteristics attributed to creative individuals (Person), the skills and processes thought to underlie creativity (Process), the environmental or contextual factors that are believed to support or hinder creativity (Place), and the outcomes that are typically perceived as creative (Product).

2.3 Evidence-based Training

Evidence-based (EB) training refers to structured learning programs that are grounded in scientific evidence, rather than on intuition, tradition, or anecdotal beliefs (Melnyk & Fineout-Overholt, 2019). These trainings are designed to improve knowledge, skills, and decision-making by using methods that have been empirically validated. In this study, EB-training specifically aims to debunk lay theories and strengthen employees' knowledge of creativity enhancement.

2.3.1 Effect of EB-training on creativity and knowledge of creativity.

Empirical evidence indicates that many creativity training programs like Creative Problem Solving (Puccio et al., 2006), Six Thinking Hats, TRIZ, and narrative-based approaches, can significantly improve divergent thinking, creative problem solving, and creative self-efficacy, typically yielding medium-to-large effect sizes ($d \approx 0.5–1.0$) However, a recent meta-analysis of workplace creativity interventions (McKay et al., 2024) found that only learning outcomes are consistently strong ($g \approx 0.73$), while real-world behavior change remains weak ($g \approx 0.34$. Additionally, the quality and durability of training effects depend heavily on training rigor, delays in measurement, and organizational support.

Building on this, Scott, Leritz, & Mumford (2004) classified training types based on targeted cognitive processes, highlighting that programs emphasizing idea generation heuristics and realistic exercises consistently outperform those based on imagery or vague inspiration techniques.

While traditional programs rightly encourage divergent thinking and creative strategy application, they often fail to challenge participants' underlying lay theories of creativity, such as beliefs in spontaneous inspiration, or reliance on right-brained thinking. This means programs risk reinforcing misconceptions rather than correcting them.

The evidence-based (EB) training in this study is designed to fill this gap. Unlike conventional approaches, our intervention is explicitly crafted to debunk common creativity myths, present scientifically grounded creativity techniques, and encourage metacognitive reflection. In doing so, it aims not only to bolster creative cognition but also to reshape participants' conceptual understanding of creativity.

Given that accurate conceptual knowledge is essential for workplace creativity interventions to produce genuine organizational change, and considering that prior meta-

analyses highlight both the potential and limitations of standard training formats, our training is uniquely positioned to yield more durable and transferable outcomes. Therefore, it is hypothesized that:

H6: Respondents who have received the EB-training demonstrate a significantly higher level of knowledge about creativity enhancement compared to those who have not received the training, when controlling for their baseline knowledge.

2.3.2 The Moderating Role of Age on the Effectiveness of EB-Training.

Age may be an important moderating factor in the effectiveness of EB-training. Research shows that older adults tend to exhibit stronger belief perseverance, meaning they are likely to cling to prior beliefs even when presented with contradicting evidence (Bruckner et al., 2020). This phenomenon can hinder their ability to update or revise inaccurate conceptions during training. This may negatively impact the effectiveness of the EB-training.

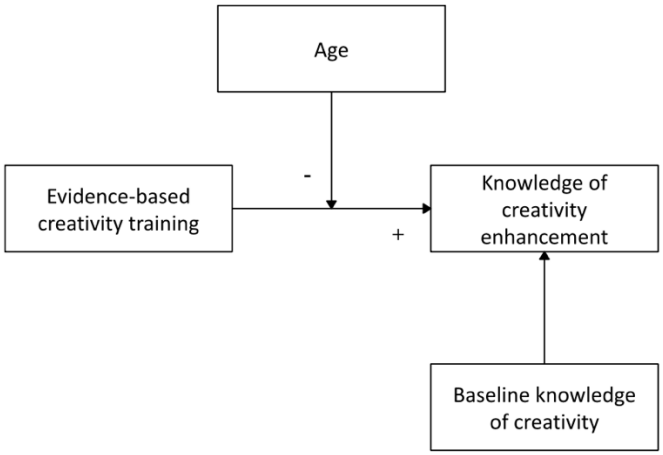
From a cognitive perspective, age-related declines in executive functioning, working memory, and processing speed can reduce the efficiency older individuals integrate and apply new information (Rhodes & Katz, 2017). Older adults are often capable of learning new skills, but they may require more time, and their performance gains tend to be smaller compared to younger adults, particularly in tasks requiring cognitive flexibility or strategy adjustment.

Additionally, younger adults are generally more responsive to feedback and more open to change (Ng & Feldman, 2012; Shearring, 1992), making them better suited to benefit from the EB-training. These findings suggest that age may moderate the effectiveness of an EB-training on improving knowledge of creativity enhancement. Therefore, it is hypothesized that:

H7: The effectiveness of the EB-training on improving knowledge about creativity enhancement is moderated by age.

Figure 1 illustrates the hypothesized effect of EB-training on knowledge of creativity enhancement, as well as the moderating role of age in this relationship.

Figure 1



3. METHODOLOGY

3.1 Sample

Data were collected over a two-week period using the Qualtrics platform with a combined convenience and purposive sampling strategy. Participants were recruited through the researchers' personal and professional networks (LinkedIn, WhatsApp, email) and relevant online communities focused on organizational development, creativity, and innovation. Special effort was made to include individuals from key departments: Marketing, Human Resources (HR), Research & Development (R&D), and Facility Management (FM).

The final sample comprised 290 Dutch employees (age range 20–85 years, M = 46.87, SD = 15.16), offering broad generational representation. Gender was evenly balanced: 145 males 145 females No participants identified as other or preferred not to say. All respondents completed at least one of the study's three core components: the baseline knowledge test, the evidence-based creativity training, or the creativity enhancement knowledge test. Analyses were conducted only on fully completed components, ensuring that each measure was based on complete data.

Departmental experience was self-reported, with overlap allowed for individuals working in multiple areas. Specifically, 38 participants had experience in Marketing, 41 in HR, 35 in R&D, and 22 in Facility Management. An additional 172 respondents reported experience in other departments. No financial incentive was provided; participants were informed about the study's academic purpose and the opportunity to gain evidence-based insights into

creativity. All participants provided informed consent, and ethical approval was secured prior to data collection. An overview of sample characteristics is presented in Table 1.

Table 1: *Descriptive Characteristics of the Sample (N = 290)*

Variable	Category or Range	N	%	M	SD
Group	Training	143	49.3%		
	Control	147	50.7%		
Age	20–85 years	290	100.0%	46.87	15.16
Gender	Male	145	50.0%		
	Female	145	50.0%		
Departmental Experience	Marketing	38	13.1%		
	Human Resources	41	14.1%		
	Research & Development	35	12.1%		
	Facility Management	22	7.6%		
	Other	172	59.3%		

Note: Percentages for departments may exceed 100% because participants could select multiple departments. Gender was binary in this dataset; no respondents selected "other" or "prefer not to say."

3.2 Measures

This study employed three theory-informed instruments to assess participants' knowledge about creativity: a baseline knowledge test, an evidence-based creativity training, and a creativity enhancement knowledge test. All items were grounded in creativity research and organized according to Rhodes' (1961) 4P model (Person, Process, Press, Product). The full questionnaire, including all survey items, is provided in Appendix A.

3.2.1 Baseline Knowledge Test

The baseline test consisted of 12 true/false statements measuring widely endorsed lay theories of creativity. Items were derived from validated sources in creativity literature (e.g., Baas et al., 2015; Kim, 2019; Ritter & Rietzschel, 2017) and categorized by the 4P framework. Following a preliminary analysis, three items were removed due to a ceiling effect (accuracy > 85%; Kline, 2005), resulting in a final set of nine items. Each correct answer yielded 1 point, with a total possible score ranging from 0 to 9. An example item is: "Brainstorming in a group is the best

way to generate innovative ideas." A complete list of items and their classification is provided in Appendix B1.

3.2.2 Evidence-Based Creativity Training

The intervention consisted of a 15-minute animation video, shown exclusively to participants in the experimental group. Professionally narrated animations were produced using Canva, and incorporated real-world workplace examples with clear segmentation to enhance comprehension and retention. Importantly, the content was grounded in scientific literature and specifically designed to debunk common lay theories and misconceptions about creativity. Participants were presented with evidence-based explanations that challenged these beliefs. The development of this video required substantial effort to translate academic insights into an engaging and accessible format, ensuring both visual clarity and conceptual rigor.

3.2.3 Knowledge of Creativity Enhancement Test

This test included 12 scenario-based multiple-choice questions assessing the application of creativity-enhancing strategies in realistic workplace settings. Items covered the four P-dimensions and addressed topics such as team ideation, workspace setup, and feedback practices. Similar to the baseline test, three items with ceiling effects were removed based on Kline's (2005) criterion, yielding a final set of nine items. Each scenario had three options with one correct, evidence-based option. A correct response was awarded 1 point, producing scores between 0 and 9. The full item set is provided in Appendix B2.

3.3 Procedure

The study followed a randomized controlled experimental design, implemented via an online survey created with Qualtrics. Upon accessing the survey, participants were automatically and sequentially assigned to either the training or control group, resulting in two approximately equal-sized conditions. The survey was administered in Dutch and took approximately 30 minutes to complete.

After providing informed consent, participants began by answering several demographic questions, including their age, gender, and departmental experience (i.e., Marketing, Human Resources, Research & Development, Facility Management, or Other).

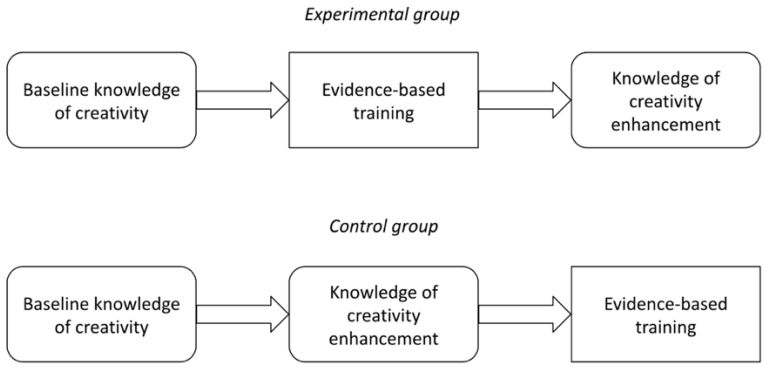
These variables were later used in the analysis to test hypotheses related to age and domain-specific baseline knowledge.

Subsequently, all participants completed the baseline knowledge test, which measured their understanding of creativity-related lay theories. Immediately after this test, participants in the experimental group were shown a 15-minute animation video that presented scientific explanations aimed at debunking common misconceptions about creativity. Participants in the control group did not view this training at this point and instead continued directly to the final knowledge test. The flowchart for both groups is visualized in Figure 2

The next component of the survey was the creativity enhancement knowledge test, which assessed participants' ability to apply evidence-based creativity-enhancing strategies in realistic workplace scenarios. After this final test, all participants completed two additional scales measuring creative self-efficacy and need for closure. These measures were included for exploratory purposes but were not analyzed as part of the this study.

Participants who requested more information about the scientific foundation of the training were provided with a brief overview of the academic literature used to design the intervention. Additionally, participants who indicated interest in the study results were offered the opportunity to receive a summary of the main findings after data collection had concluded.

Figure 2



3.4 Data Analysis Procedure

3.4.1 General Acceptance of Lay Theories of Creativity.

All analysis were conducted using SPSS 27. To examine whether participants generally accepted or rejected common lay theories about creativity, a one-sample t-test was conducted. The analysis assessed whether the average number of correct responses on the baseline

knowledge test differed significantly from the predefined success threshold. As described in Section 3.1, the final version of the test consisted of 9 true/false statements representing commonly held misconceptions about creativity. Each correctly rejected misconception was awarded one point, resulting in a total baseline knowledge score ranging from 0 to 9 per participant.

In this study, a score of 7 or more out of 9 (≈78%) was defined as the threshold for successful rejection of common lay theories about creativity. This cut-off was chosen for two key reasons. First, in binary-choice formats, random guessing yields an expected score of 4.5 out of 9.

To ensure that correct answers reflect actual knowledge rather than chance, a guessing correction was applied. Second, in educational contexts, a 5.5 out of 10 is commonly used as the minimum passing grade which, when adjusted for guessing in a two-option format, corresponds to 7 correct answers on a 9-item test. This threshold therefore represents both a performance clearly above chance and a minimal level of conceptual mastery. The one-sample t-test compared the observed mean baseline knowledge score against this success threshold of 7. A significantly lower mean would suggest that participants, on average, did not successfully reject the misconceptions about creativity.

3.4.2 Effect of EB-Training on Knowledge of Creativity Enhancement.

To test Hypothesis 6, a hierarchical linear regression analysis was conducted to examine whether participation in the EB-training predicted higher knowledge of creativity enhancement, and whether this effect depended on participants' baseline knowledge. In Step 1, training condition (training vs. control) and baseline knowledge were entered as the predictors. In Step 2, the interaction between training condition and baseline knowledge was added to the model. This allowed us to assess not only the overall effectiveness of the EB-training, but also whether the relationship between baseline knowledge and enhancement knowledge differed between the two groups. This approach accounts for possible differences in how individuals with varying levels of initial knowledge respond to the training. By modelling the interaction, the analysis enables a conditional interpretation of the training effect. This moderation model aligns with procedures for interaction testing in multiple regression outlined by Hair et al. (2018) and Field (2018). That is, how the effect of the training varies as a function of baseline knowledge.

3.4.3 Departmental Differences in Baseline Knowledge of Creativity.

To investigate whether baseline knowledge of creativity differed systematically across departments, in line with the Four P model of creativity (H2–H5), four independent samples t-tests were conducted. Each analysis tested whether employees from a specific department scored significantly higher on the corresponding P-dimension than employees from all other departments combined. Specifically, baseline knowledge of the "Person" component was compared between Human Resources (HR) employees and non-HR employees (H2), the "Product" component between Marketing employees and non-Marketing employees (H3). the "Process" component between R&D employees and non-R&D employees (H4), and the "Press" component between Facility Management employees and non-FM employees (H5).

Participants could select multiple departments in the survey, which meant that individuals with cross-departmental experience were included in each applicable comparison.

3.4.4 Moderating Effect of Age on the Training Outcome.

a hierarchical multiple regression analysis was conducted with creativity enhancement knowledge score as the dependent variable. In the first step, training condition (0 = control, 1 = training group) and centered age were entered as predictors. In the second step, the interaction term between training condition and age (Group × Age) was added to the model. A significant interaction effect would indicate that the impact of the EB-training on creativity enhancement knowledge differed depending on participants' age.

The steps in this hierarchical regression model were guided by recommendations for moderation analysis from Field (2018) and Hair et al. (2018), including the use of mean-centered predictors. Mean-centering involves subtracting the sample mean from each value of a variable, this makes the regression intercept more interpretable without affecting the model's fit.

3.4.5 Post-hoc Power Analysis

A post hoc power analysis was conducted using G*Power, with a two-sided $\alpha = .05$. The sample size varied depending on the specific analysis, and the effect size (d) was chosen based on the outcomes of each respective analysis, in order to determine the likelihood of detecting an effect of that magnitude.

4. RESULTS

This chapter presents the results of the statistical analyses conducted to test the hypotheses formulated in the theoretical framework. The chapter begins in Section 4.1 with a brief overview of the statistical assumptions that were checked prior to analysis. Section 4.2 addresses Hypothesis 1 by examining the general acceptance of creativity-related lay theories among participants. Section 4.3 tests Hypotheses 2 through 5 by comparing baseline creativity knowledge across departments using the 4P model (Rhodes, 1961). In Section 4.4, the effect of the evidence-based training on participants' knowledge of creativity enhancement is tested (Hypothesis 6). Section 4.5 investigates whether this effect is moderated by participants' age (Hypothesis 7). Finally, Section 4.6 summarizes the key findings of all analyses.

4.1 Assumption Checks for Statistical Analyses

Prior to conducting the regression analyses, key statistical assumptions were examined and met. Linearity, normality of residuals, and homoscedasticity were visually assessed using residual plots and P–P plots, all of which indicated satisfactory adherence to the respective assumptions. Multicollinearity was evaluated through Variance Inflation Factor (VIF) and Tolerance values, which fell within acceptable ranges. A full overview of the diagnostic checks and corresponding plots is presented in Appendix C**.**

4.2 Rejection of Common Lay Theories of Creativity (H1)

To evaluate whether individuals successfully rejected commonly held lay theories about creativity (H1), a one-sample t-test was conducted comparing participants' average baseline knowledge score to a predefined success threshold of 7 out of 9 correct answers.

The analysis revealed that the average baseline knowledge score (M = 5.45, SD = 1.85) was significantly lower than the success threshold of 7, $t(289) = -14.26$, $p < .001$, with a mean difference of –1.55 (95% CI [–1.76, –1.33]). This indicates that, on average, participants failed to correctly reject approximately 28% of the lay theories needed to meet the success criterion.

The effect size was very large, with Cohen's $d = 1.85$ and Hedges' $g = 1.85$, indicating

a substantial and practically meaningful deviation from the defined benchmark. These findings provide strong empirical support for H1, demonstrating that individuals generally do not successfully reject common lay theories about creativity. A detailed table of the results is provided in Appendix D.

4.3. Departmental Differences in Baseline Creativity Knowledge (H2–H5)

This section examines whether employees from different departments vary in their baseline knowledge of creativity, based on four dimensions: person, product, process, and press. Independent samples t-tests were conducted to compare each department to all other employees not in that department. The results are summarized in **Fout! Verwijzingsbron niet gevonden.**

4.3.1 Human Resources – Person Dimension (H2).

An independent-samples *t*-test revealed no significant difference in score between the HR group (M = 1.71, SD = 0.46) and the non-HR group (M = 1.62, SD = 0.56), $t(61.50) = -1.06$, p = .295, d = 0.15. Thus, H2 was not supported. Additionally, an exploratory comparison of the total baseline creativity score between HR and non-HR employees showed no significant difference, $t(288) = 0.14$, p = .890, with a negligible effect size (d = 0.02).

4.3.2 Marketing – Product Dimension (H3).

Marketing employees (M = 1.08, SD = 0.78) scored significantly lower than their non-Marketing counterparts (M = 1.32, SD = 0.64), $t(288) = 2.11$, p = .036, d = 0.66, indicating a medium effect size. Therefore, H3 was rejected due to a reverse effect: instead of outperforming others, the Marketing group demonstrated significantly lower baseline knowledge of the *product* aspect of creativity.

Furthermore, an exploratory comparison of the total baseline creativity score showed that Marketing employees (M = 4.87, SD = 2.33) again scored significantly lower than non-Marketing employees (M = 5.54, SD = 1.75), $t(288) = –2.10$, p= .037, d = –0.37. This indicates a small-to-medium effect size.

4.3.3 Research & Development – Process Dimension (H4).

An independent-samples *t*-test revealed no significant difference between R&D employees

(M = 1.60, SD = 0.88) and non-R&D employees (M = 1.58, SD = 0.89), $t(288) = –0.15$, p = .884, d = 0.03, indicating a negligible effect size. Therefore, H4 was not supported.

Interestingly, an exploratory comparison of total baseline creativity scores revealed a significant difference. R&D employees (M = 6.06, SD = 1.75) scored higher than their non-R&D counterparts (M = 5.37, SD = 1.85), $t(45.10) = –2.17$, p = .035, d = –0.38, suggesting a small-to-medium effect in the unexpected direction. Although this was not the focus of the hypothesis, it suggests that R&D employees may generally be more knowledgeable about creativity than other departments, but not specifically in the process dimension.

4.3.4 Facility Management – Press Dimension (H5).

An independent-samples t-test showed that Facility Management employees (M = 0.64, SD = 0.85) scored lower than non-Facility Management employees (M = 0.97, SD = 0.79), $t(288)$ = 1.92, p = .056, d = 0.43. Although this result did not reach conventional significance ($\alpha = .05$), it suggests a medium-sized effect in the opposite direction of what was hypothesized. Therefore, H5 was not supported.

A similar pattern emerged in the exploratory comparison of total baseline creativity scores. Facility Management employees (M = 4.73, SD = 2.12) scored lower than their non-Facility Management counterparts (M = 5.51, SD = 1.82), $t(288) = –1.92$, p = .056, d = 0.43. While not statistically significant, this consistent trend may point toward a moderately strong reverse effect that warrants further investigation in future research.

Table 2: *Independent Samples t-Tests Comparing Baseline Creativity Knowledge Across Departments Based on the 4P Model*

H	Compared Groups	Score	M_1 (SD)	M_2 (SD)	t(df)	*p-value*[a]	Cohen's *d*	Interpretation
H2	HR_1 vs non-HR_2	Person	1.71 (0.46)	1.62 (0.56)	-1.06 (61.5)	.295	0.15	H2 Rejected
-	HR_1 vs non-HR_2	Total	5.41 (1.82)	5.46 (1.86)	0.14 (288)	.890	0.02	
H3	$Marketing_1$ vs non $marketing_2$	Product	1.08 (0.78)	1.32 (0.64)	2.11 (288)	.036*	0.66	H3 Rejected (reversed effect)
-	$Marketing_1$ vs non marketing	Total	4.87 (2.33)	5.54 (1.75)	-2.10 (288)	.037*	-0.37	
H4	$R\&D_1$ vs non-$R\&D_2$	Process	1.60 (0.88)	1.58 (0.89)	-0.15 (288)	.884	0.03	H4 Rejected

-	$R\&D_1$ vs non-$R\&D_2$	Total	6.06 (1.75)	5.37 (1.85)	-2.17 (45.1)	.035*	-0.38	
H5	FM_1 vs non-FM_2	Press	0.64 (0.85)	0.97 (0.79)	1.92 (288)	.056**	0.43	H5 Rejected (reversed effect)
-	FM_1 vs non-FM_2	Total	4.73 (2.12)	5.51 (1.82)	-1.92 (288)	.056**	0.43	

[a]$\alpha = .05$; ** = $p < .05$, * = $p < .10$

4.4. Effect of EB-Training on Creativity Enhancement Knowledge (H6)

The overall model was significant, $R^2 = .271$, $F(3, 243) = 30.16$, $p < .001$, indicating that the predictors together explained 27.1% of the variance in enhancement knowledge. Training condition was a significant predictor in both steps. In Step 1, $B = 1.664$, $p < .001$; in Step 2, $B = 1.689$, $p < .001$. This shows that participants in the training group scored significantly higher on enhancement knowledge than those in the control group, even after controlling for baseline knowledge.

Baseline knowledge also significantly predicted enhancement scores, B = .277, p < .001, confirming that participants with more prior knowledge also tended to score higher after the intervention.

Furthermore, the interaction between training condition and baseline knowledge was significant ($B = –0.395$, $p = .001$), indicating that the effect of the training on enhancement knowledge depended on participants' prior knowledge levels. Specifically, the training effect was stronger for participants with lower baseline knowledge and diminished as baseline knowledge increased.

Importantly, an independent samples t-test confirmed that there was no significant difference in baseline knowledge between the training and control groups prior to the intervention, $t(288) = –0.85$, $p = .395$. This suggests that the moderation effect was not driven by pre-existing group differences.

These findings provide support for H6: the EB-training significantly improved creativity enhancement knowledge, especially for participants who began with less prior knowledge. Regression results are summarized in Table 2

Table 2: *Hierarchical Regression Predicting Creativity Enhancement Knowledge from Training Condition, Baseline Knowledge, and Their Interaction*

Predictor	B	SE B	β	t	*p*	R^2	ΔR^2
Step 1						0.239	

Predictor	B	SE B	β	t	*p*	R^2	ΔR^2
(Intercept)	5.577	0.155		35.866	<.001		
Group	1.664	0.227	0.409	7.227	<.001		
Baseline Knowledge	0.277	0.061	0.252	4.514	<.001		
Step 2						0.271	0.032
(Intercept)	5.579	0.152		36.589	<.001		
Group × Baseline Knowledge	-0.395	0.121	-0.243	-3.271	.001		

Note. Step 1: $R^2 = .239$, $p < .001$. Step 2: $R^2 = .271$, $\Delta R^2 = .032$, $p = .001$. Dependent variable: *Knowledge of Creativity Enhancement Score*.
In Step 2, the interaction term was added to the model. Training condition and Baseline Knowledge remained in the model as main effects.

4.5 Moderating Role of Age on Training Effectiveness (H7)

The hypothesis stated that the effectiveness of the EB-training on improving knowledge about creativity enhancement would be moderated by age, such that the training would be less effective for older participants. To test this hypothesis, a hierarchical multiple regression analysis was conducted with creativity enhancement knowledge score as the dependent variable. In the first step, training condition (0 = control, 1 = training group) and centered age were entered as predictors. In the second step, the interaction term between training condition and age (Group × Age) was added to the model. The overall regression model was significant, $F(3, 243) = 18.484$, $p < .001$, accounting for 18.6% of the variance in enhancement knowledge ($R^2 = .186$, Adjusted $R^2 = .176$).

The main effect of training condition was statistically significant ($B = 1.743$, $SE = .236$, $t = 7.374$, $p < .001$), indicating that participants who received the training scored significantly higher on the creativity enhancement test than those in the control group. The main effect of age was not significant ($B = –0.015$, $SE = .011$, $t = –1.303$, $p = .194$), suggesting that age alone did not predict knowledge scores.

Critically, the interaction term was not statistically significant ($B = 0.002$, $SE = .016$, $t = 0.128$, $p = .899$) and did not explain additional variance in the outcome ($\Delta R^2 = .000$, $p = .899$). This indicates that the effect of the training did not differ as a function of age. In other words, age did not moderate the relationship between training and knowledge of creativity enhancement.

These results do not support H7. Contrary to expectations, the EB-training was equally effective across age groups. A full overview of the regression coefficients is provided in Table 3

Table 3: *Hierarchical Regression Predicting Creativity Enhancement Knowledge from Training Condition, Age, and Their Interaction*

Predictor	B	SE	β	t	*p*	R^2	ΔR^2
Step 1						0.186	
(Intercept)	5.555	0.161		34.462	<.001		
Group	1.743	0.236	.429	7.374	<.001		
Age	–0.013	0.008	–.108	–1.732	.085		
Step 2						0.186	0
(Intercept)	5.553	0.162		34.311	<.001		
Group × Age	0.002	0.016	.011	0.128	.899		

Note. $N = 247$. Step 1: $R^2 = .186$, $p < .001$. Step 2: $\Delta R^2 = .000$, $p = .899$. Training condition was coded as 0 = control and 1 = training. Age was mean centered prior to analysis. In Step 2, the interaction term was added while training condition and age remained in the model as main effects. Dependent variable: *Knowledge Enhancement Score*.

4.6. Post-hoc Power Analysis

The post hoc power analysis revealed strong sensitivity (power = 1.00) for H1 (d = 0.84, n = 290), indicating excellent detection of a large effect. H2 (HR vs. non-HR, d = 0.15, n = 41 vs. 249) was underpowered (0.14), insufficient for small effects. H3 (Marketing vs. non-Marketing, d = 0.66, n = 38 vs. 252) had high power (0.97), while H4 (R&D vs. non-R&D, d = 0.03, n = 35 vs. 255) was underpowered (0.05). H5 (FM vs. non-FM, d = 0.43, n = 22 vs. 268) achieved moderate but inadequate power (0.49). H6, examining the training × baseline knowledge interaction ($f^2 = 0.044$, N = 246), had high power (0.91). H7 was not analyzed, as its interaction effect was zero. The post hoc analysis results are provided in

Appendix H.

5. DISCUSSION

This study aimed to investigate whether an evidence-based (EB) training could improve employees' knowledge of how to enhance creativity by debunking widely held misconceptions. Additionally, the study explored whether this effect varied by age and examined departmental differences in baseline creativity knowledge. This chapter reflects on the findings. It discusses the extent to which the hypotheses were supported, considers the validity of the results, and

explores their broader significance. In addition, this chapter addresses the study's limitations and offers directions for future research.

The results provide strong support for Hypothesis 1, which proposed that individuals do not successfully reject common lay theories about creativity. On average, participants correctly rejected only 5.45 out of 9 false statements, meaning they incorrectly accepted approximately 39% of the myths presented in the baseline test. This substantial acceptance rate illustrates how deeply ingrained such misconceptions are. The statistical test ($t(289) = -14.26$, $p < .001$) and the large effect size (Cohen's $d = 1.85$) confirm both the practical and statistical significance of this finding. It echoes earlier research by Baas et al. (2015) and Ritter & Rietzschel (2017), who found that people often rely on intuitive, untested beliefs about creativity, many of which contradict empirical evidence. This finding underscores the necessity of explicitly debunking such beliefs through educational interventions.

By contrast, Hypotheses 2 through 5, which posited department-specific strengths in baseline creativity knowledge based on Rhodes' 4P model, were not supported. Surprisingly, in some cases, the observed effects were in the opposite direction. For example, Marketing employees, who were expected to score higher on knowledge of the "Product" dimension, actually scored significantly lower than non-Marketing employees ($M = 1.08$ vs. 1.32, $p = .036$). Similarly, Facility Management employees scored lower on Press-related items ($M = 0.64$ vs. 0.97, $p = .056$). These findings challenge the expectations derived from Domain Specificity Theory (Baer, 1998) and Situated Cognition Theory (Brown et al., 1989), which propose that professional context fosters domain-specific understanding.

Contrary to these theoretical assumptions, individuals embedded in creativity-relevant departments such as Across all four departments: Marketing, Human Resources, Research & Development, and Facility Management. No group outperformed others on the creativity dimension most relevant to their domain. In fact, some departments scored significantly lower than others on the expected dimension: Marketing on Product, Facility Management on Press, and so on. This pattern suggests that routine exposure to creativity-related tasks, environments, or outcomes does not necessarily foster accurate, evidence-based knowledge of creativity. As highlighted in the introduction, many organizational practices regarding creativity are not based on scientific literature, which means they may inadvertently reinforce existing misconceptions rather than challenge them. The current findings suggest that such misconceptions may be socially maintained or even amplified within professional settings. Employees may adopt inaccurate lay theories through informal learning, organizational culture, or outdated training programs. Consequently, professionals assumed to have domain-specific expertise in creativity

may unknowingly perpetuate intuitive but incorrect beliefs, a dynamic that reflects an expertise paradox, where greater exposure correlates with stronger incorrect beliefs. This highlights the need for targeted educational interventions even in fields typically associated with creativity.

The strongest support was found for Hypothesis 6, which tested the effect of the EB-training on participants' knowledge of creativity enhancement. Participants who received the EB-training scored on average 1.69 points higher on the enhancement test than those in the control group ($B = 1.689$, $p < .001$). Given that the maximum score on this scale was 9, this improvement of nearly 19% represents not only a statistically significant gain but also a substantial and meaningful increase in applied knowledge following a brief, 15-minute training. This effect remained significant even when controlling for participants' baseline knowledge of creativity, which was included in the model as a covariate ($B = 0.457$, $p < .001$).

In practical terms, this means that the observed difference of 1.69 points reflects the estimated effect after accounting for individual differences in prior knowledge. Without this statistical control, the raw mean difference was slightly higher (1.74 points), suggesting that the effect of the training is robust and only marginally influenced by pre-existing knowledge levels. A pre-test comparison confirmed that the two groups did not differ in baseline knowledge prior to the intervention, $t(288) = –0.85$, $p = .395$.

The regression model explained 27.1% of the variance in creativity enhancement scores, indicating a strong model fit for a psychological intervention. Importantly, a significant interaction effect was found between training condition and baseline knowledge ($B = –0.395$, $p = .001$), demonstrating that the training was especially effective for participants with initially lower knowledge levels. This compensatory effect reinforces the educational value of the training: it not only elevates overall knowledge but is particularly beneficial for those who need it most. The ability to bring lower-knowledge individuals up to speed quickly and effectively has important implications for equity, organizational learning, and innovation culture. Rather than widening gaps, the intervention appears to level the playing field, equipping a broader base of employees with scientifically supported insights and practices.

Regarding Hypothesis 7, the predicted moderating effect of age on training outcomes was not supported. Although previous literature suggests that older adults may struggle more with updating prior beliefs (Bruckner et al., 2020), no significant interaction was found between age and training condition ($p = .899$). This implies that the EB-training was equally effective across age groups. One possible explanation is the accessibility and design of the training format, which consisted of a concise, visually supported video. This format may have reduced cognitive load and made the material easier to process for both younger and older participants.

According to Mayer's (2009) Cognitive Theory of Multimedia Learning, combining visual and auditory input can enhance learning by engaging dual processing channels (visual and verbal) and reducing reliance on working memory. This is particularly relevant for older adults, who often experience declines in processing speed and working memory capacity (Rhodes & Katz, 2017). The structured and narratively coherent nature of the video may have further supported comprehension by segmenting information and emphasizing key takeaways.

In addition, the video format required no active recall or abstract reading comprehension, which can be more demanding for older individuals compared to interactive or text-heavy formats. Instead, the training relied on passive but engaging content delivery through narrated visuals, supported by concrete, real-world examples. Research shows that such example-based, structured formats reduce cognitive load and support comprehension and transfer, particularly for learners with reduced working memory capacity, such as older adults (Mayer, 2009; Park & Schwarz, 2000). This instructional approach is often better tolerated across age groups and may have created a cognitively accessible learning environment in which age-related differences in processing ability were minimized. As a result, participants of all ages appeared to benefit equally from the training content.

Taken together, the findings confirm the internal validity of the study. The use of mean-centered covariates, adequate assumption checks and a sample of N = 290 participants, spanning ages 20 to 85 years (M = 46.87, SD = 15.16), all contribute to the robustness of the conclusions. The magnitude of observed changes, and the statistical rigor of the analyses provide a strong foundation for interpreting these results as valid and meaningful.

5.2 Research Implications

This study contributes to the literature on organizational creativity and training effectiveness by providing empirical evidence that brief, evidence-based (EB) training can significantly improve individuals' applied knowledge of creativity enhancement. Previous research has shown that many individuals, regardless of role or experience, hold persistent lay beliefs about creativity that contradict scientific evidence (Baas et al., 2015; Ritter & Rietzschel, 2017). The observed increase in enhancement knowledge suggests that participants may have replaced or revised some of these misconceptions, enabling more accurate judgments about how to stimulate creativity in practice. This study supports those claims and shows that these beliefs are not only widespread but also measurable and, importantly, malleable through brief educational intervention.

The significant increase in knowledge scores following the EB-training, particularly among participants with lower baseline knowledge, demonstrates that brief, targeted training can produce meaningful improvements in evidence-based understanding of how to foster creativity in professional settings. This supports the growing emphasis on conceptual clarity and myth correction as central aims in creativity research and education.

A second contribution of this study lies in its challenge to domain-specific assumptions. Based on Situated Cognition Theory (Brown et al., 1989) and Domain Specificity Theory (Baer, 1998), it was hypothesized that employees would possess stronger baseline knowledge in the dimension of creativity most closely related to their department (e.g., Product for Marketing, Press for Facility Management). These hypotheses were not supported. In fact, in some cases, the effect was reversed. This suggests that professional context alone does not ensure accurate or deep understanding of creativity. Instead, lay theories may persist even in environments where creativity is frequently discussed or applied, highlighting the need for explicit, evidence-based education.

Finally, the study offers novel insight into the role of age in conceptual learning. Despite previous findings suggesting that older individuals may be more resistant to updating beliefs (Bruckner et al., 2020), age did not moderate the effectiveness of the EB-training. This indicates that well-designed training can be equally effective across age groups, provided it is accessible, engaging, and grounded in evidence.

Taken together, this study adds empirical weight to the argument that misconceptions about creativity are common but correctable, and that even short interventions can shift conceptual knowledge, provided they are grounded in science and delivered in an accessible format. It also cautions against assuming that practical experience or job function guarantees accurate creativity knowledge, reinforcing the importance of evidence-based learning in organizational development.

5.3 Managerial Implications

Managers who aim to strengthen creativity within their organization often rely on intuition, best practices, or assumptions rooted in experience. This study challenges that approach by showing that even seasoned professionals hold widespread misconceptions about creativity. Prior to training, participants in this study incorrectly accepted nearly 40% of tested myths. These incorrect beliefs can quietly shape how teams work, how resources are allocated, and how potential is evaluated. To lead creative teams effectively, managers must first acknowledge that

misconceptions are likely present and take ownership of creating a shared understanding that is grounded in science rather than intuition.

Rather than implementing large-scale innovation programs or expensive brainstorming sessions, managers can make meaningful progress by investing in short, evidence-based learning interventions. The training used in this study lasted only 15 minutes, yet it significantly improved employees' ability to identify effective creativity-enhancing strategies. This finding offers a practical insight: building creative capacity does not require vast budgets or time-consuming initiatives. With minimal effort, managers can incorporate targeted micro-learning moments, such as video modules, short workshops, or onboarding sessions, that directly address the most persistent misunderstandings and replace them with evidence-based insights.

Notably, the training was most effective for those with initially low knowledge. This presents an opportunity to close internal knowledge gaps and raise the collective level of understanding across a team. Managers can actively use such interventions to equalize creative literacy, particularly in cross-functional teams where diverse backgrounds may lead to conflicting assumptions about how creativity works. A shared language and set of expectations around creativity not only improves collaboration but also prevents marginalization of certain voices within teams, especially those who may hesitate to contribute due to incorrect self-beliefs about not being the "creative type."

An additional insight is the training's equal effectiveness across age groups. In many organizations, age is implicitly linked to resistance to change or lower adaptability. Yet, this study found no moderating effect of age on learning outcomes, suggesting that well-designed, accessible training can resonate with employees regardless of generation. For managers, this means there is no need to segment creativity training by age or tenure. They can confidently deploy the same intervention across the organization, knowing that it will be effective for both junior and senior staff alike.

Perhaps most surprising is the finding that domain experience, working in departments like Marketing, R&D, or Facility Management, did not lead to better baseline knowledge about the corresponding dimension of creativity (e.g., Product, Process, or Press). In some cases, employees in these roles even scored lower than their peers. This signals a blind spot: practical experience does not automatically translate into theoretical or evidence-based insight. Managers should therefore be cautious about assuming that creativity is something employees "just pick up" through their work. Instead, they can elevate organizational creativity by approaching it as a teachable, learnable skill, one that benefits from structured support, reflection, and continued reinforcement.

In sum, fostering a creative culture requires more than encouragement or symbolic gestures. It involves reshaping how people think about creativity itself. This study demonstrates that brief, targeted interventions can increase applied knowledge and create a more equal foundation for innovation. For managers, the message is clear: if you want your teams to work more creatively, start by changing how they understand creativity, and give them the tools to do it right.

5.4 Limitations and Further Research

While the present study provides valuable insights into the effectiveness of evidence-based training in correcting creativity misconceptions, several limitations must be acknowledged. First, the study relied on a non-probability sampling method, combining convenience and purposive sampling. The survey was distributed via personal and professional networks and shared within online communities with a specific interest in creativity and innovation. As a result, the sample may be biased toward individuals who already have a greater awareness or interest in creativity, potentially inflating baseline knowledge compared to the general working population. This may limit the representativeness and generalizability of the findings. Future studies should aim to replicate these results using random or stratified sampling techniques to better reflect the broader workforce.

Second, while the baseline knowledge test and creativity enhancement test were constructed based on well-documented scientific misconceptions and strategies, they were designed specifically for this study and not formally validated. Their primary purpose was to detect pre- and post-intervention differences. Future research should focus on developing and validating standardized, psychometrically sound instruments to assess lay beliefs and applied creativity knowledge more reliably across diverse populations.

Third, the study assessed only short-term knowledge acquisition, with no follow-up measurement to determine the retention of knowledge or translation into actual creative behavior or workplace practices. While immediate gains were significant, it remains unclear whether the effects persist over time or influence job performance. Future research should adopt longitudinal designs to examine the durability and behavioral consequences of such interventions.

Fourth, the EB-training intervention was delivered in a passive video format. Although this format offers scalability and ease of distribution, it may not be as effective as more active learning methods (e.g., reflection, discussion, problem-solving). Future studies could compare

different instructional formats to determine which methods yield the strongest and most lasting improvements in creativity-related understanding.

Fifth, the study focused on age as the sole moderating variable, but other individual differences, such as openness to experience, cognitive flexibility, prior education, or organizational culture, may also influence the effectiveness of the training. A broader set of psychological and contextual moderators could help identify for whom and under what conditions such training is most beneficial. This study offers promising evidence that a brief, evidence-based training intervention can reduce misconceptions about creativity and improve applied knowledge. However, further research is needed to confirm these findings in more representative samples, test long-term effects, and explore how different delivery formats and learner characteristics influence training outcomes.

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APPENDIX

Appendix A

Appendix A1

Geef aan of u denkt dat de volgende stellingen juist of onjuist zijn:

Creativiteit kan niet worden ontwikkeld.
O Juist
O Onjuist

Creativiteit neemt af naarmate je ouder wordt.
O Juist
O Onjuist

Creativiteit is slechts weggelegd voor een bepaalde groep mensen.
O Juist
O Onjuist

Een idee is alleen creatief als het leidt tot innovatie.
O Juist
O Onjuist

Creativiteit is onmeetbaar.
O Juist
O Onjuist

Een idee is creatief als het heel uniek is.
O Juist
O Onjuist

Creatieve prestaties zijn vooral het resultaat van plotselinge inspiratie.
O Juist
O Onjuist

De rechterhersenhelft is verantwoordelijk voor creativiteit.
O Juist
O Onjuist

Ontspanning is een voorwaarde voor creativiteit.
O Juist
O Onjuist

Brainstormen in een groep is de beste manier om vernieuwende ideeën te genereren

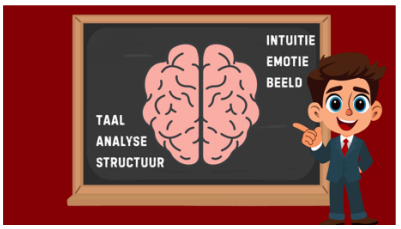
O Juist
O Onjuist

Creativiteit bloeit het best onder omstandigheden van totale vrijheid
O Juist
O Onjuist

De fysieke werkomgeving heeft weinig invloed op creativiteit
O Juist
O Onjuist

Appendix A2

Link to training:
https://www.canva.com/design/DAGmGeCZFzo/DiQKF8zoXSqQ8hLBGSrBkA/watch?utm_content=DAGmGeCZFzo&utm_campaign=designshare&utm_medium=link2&utm_source=uniquelinks&utlId=h3a6a40d2dc



Appendix A3

The correct answers are shown in **bold**

1: Stel: u wilt het creatieve denkvermogen binnen uw organisatie vergroten. Zou u overwegen om een externe training voor uw team in te zetten?
Kies de optie die het best uw aanpak weergeeft:

A: Geen training inzetten, omdat iemand nu eenmaal creatief is of niet.
B: Een training inzetten, omdat creatief denken gestimuleerd kan worden.
C: Een training inzetten, maar alleen voor medewerkers met aanleg voor creativiteit.

2: Stel: u beoordeelt ideeën die zijn gegenereerd tijdens een brainstormsessie. Wat is volgens u de beste manier om te bepalen of een idee creatief is?
Kies de optie die het best uw aanpak weergeeft:

A: Ik beoordeel enkel ideeën als creatief waarvan ik denk dat ze tot innovatie kunnen leiden.
B: Ik beoordeel alleen ideeën als creatief die op korte termijn merkbare impact of verandering teweegbrengen.

C: Ik beoordeel alleen ideeën als creatief wanneer ze zowel origineel als potentieel bruikbaar zijn, ongeacht directe toepasbaarheid.

3: Stel: u bent op zoek naar een effectieve manier om creatieve ideeën te stimuleren tijdens een productontwikkelingstraject. Wat zou volgens u de beste aanpak zijn?
Kies de optie die het best uw aanpak weergeeft:

A: Ik kies voor een gestructureerde aanpak waarbij creatieve ideeën doelgericht worden ontwikkeld en verder uitgewerkt.
B: Ik vertrouw vooral op spontane inspiratie en vermijd structuur, omdat dit creativiteit kan belemmeren.
C: Ik betrek alleen medewerkers die bekendstaan om hun spontane ideeën en creatieve invallen.

4: Stel: u wilt de creativiteit binnen uw organisatie verhogen. Welke rol speelt de fysieke werkomgeving daarbij volgens u?
Kies de optie die het best uw mening weergeeft:

A: De fysieke werkomgeving heeft weinig tot geen effect, omdat creativiteit vooral afhangt van persoonlijkheid en vaardigheden.
B: Een stimulerende fysieke werkomgeving, bijvoorbeeld door de inrichting van de ruimte, kan creativiteit bevorderen.
C: Zolang medewerkers goed samenwerken en duidelijke doelen hebben die gericht zijn op creativiteit, speelt de fysieke omgeving geen relevante rol.

5: Stel: u bent onderdeel van een leeftijdsdivers team. U mag een selecte groep medewerkers kiezen voor een brainstormsessie. Hoe gaat u hier het best mee om?
Kies de optie die het best uw aanpak weergeeft:

A: Ik kies vooral jongere medewerkers, omdat brainstormen beter past bij hoe hun brein werkt en hun denkpatronen nog niet zijn vastgeroest.
B: Ik kies vooral jongere medewerkers, omdat ik verwacht dat zij de meest waardevolle ideeën zullen aandragen.
C: Ik betrek zowel jongere als oudere medewerkers, omdat creativiteit niet aan leeftijd gebonden is.

6: Stel: u wilt beoordelen of een training over creatief denken effect heeft gehad op de werknemers. Hoe pakt u dit het beste aan?
Kies de optie die het best uw aanpak weergeeft:

A: Ik meet of de training effect heeft gehad door te evalueren of werknemers cognitieve flexibiliteit tonen en in staat zijn vastgeroeste denkpatronen te doorbreken.
B: Ik besteed geen tijd en geld aan effectmeting, omdat creatief denkvermogen niet objectief te meten is.

C: Ik vraag de werknemers hoe creatief zij zich voelen na de training, omdat creativiteit vooral een subjectieve ervaring is.

7: Stel: u ontwikkelt een training om de creatieve vaardigheden binnen het bedrijf te versterken. Waarop baseert u de inhoud van de training?
Kies de optie die het best uw aanpak weergeeft:

A: Ik richt me op oefeningen die de rechterhersenhelft activeren, omdat die als het meest belangrijk wordt gezien voor creativiteit.
B: Ik baseer de training op het samenspel van verschillende hersengebieden en cognitieve processen.
C: Ik richt me op expressie en gevoel, omdat de emotiegebieden in de rechterhersenhelft essentieel zijn voor toegang tot creativiteit.

8: Stel: u bent bezig met het ontwerpen van een nieuw werkbeleid dat creativiteit optimaal moet stimuleren. Welke aanpak kiest u?
Kies de optie die het best uw aanpak weergeeft:

A: Ik geef medewerkers volledige vrijheid zonder doelen of kaders, omdat beperkingen het creatieve denken belemmeren.
B: Ik bied medewerkers voldoende autonomie, maar binnen duidelijke kaders en met concrete doelen.
C: Ik verplicht medewerkers om maandelijks te rapporteren over hun creatieve voortgang en beloon alleen de meest creatieve medewerkers met extra tijd voor creativiteit.

9: U heeft een kennisclip over creativiteit bekeken. Naar wie stuurt u deze binnen uw organisatie?
Kies de optie die het best uw aanpak weergeeft:

A: Ik stuur de kennisclip alleen naar medewerkers in creatieve functies, zoals marketing en design.
B: Ik stuur de kennisclip naar alle medewerkers, omdat kennis over creativiteit relevant is voor uiteenlopende functies.
C: Ik stuur de kennisclip naar niemand, creativiteit is toch alleen weggelegd voor mensen die van nature creatief zijn.

10: Stel: u bent jurylid bij een interne wedstrijd waarbij medewerkers ideeën mogen aandragen voor het oplossen van een klantvraag. Wanneer beschouwt u een idee als creatief?
Kies de optie die het best uw aanpak weergeeft:

A: Ik waardeer vooral ideeën die zeer uniek zijn, omdat creativiteit bedoeld is om iets totaal nieuws en onverwachts te brengen.
B: Ik waardeer ideeën die zowel vernieuwend zijn als goed inspelen op het probleem of de behoeften van de klant.

C: Ik waardeer juist die ideeën die aansluiten bij bestaande processen, omdat ze zonder veel moeite kunnen worden geïmplementeerd.

11: Stel: u merkt dat uw team weinig creatieve ideeën heeft. Een collega stelt voor om ontspanningsmomenten te organiseren. Gaat u hierin mee?
Kies de optie die het best uw aanpak weergeeft:

A: Ik organiseer ontspanningsmomenten, maar zorg ook voor gefocuste werkmomenten waarin actief aan creatieve oplossingen wordt gewerkt.
B: Ik organiseer ontspanning voorafgaand aan creatieve sessies, omdat dit helpt om mentale ruimte te creëren voor nieuwe ideeën.
C: Ik focus niet op ontspanning, maar op het vergroten van urgentie, bijvoorbeeld door de tijdsdruk voor het vinden van een oplossing te verhogen.

12: Uw manager vraagt u om advies over hoe het best vernieuwende ideeën kunnen worden opgehaald binnen uw organisatie. Wat is volgens u de beste aanpak?
Kies de optie die het best uw aanpak weergeeft:

A: Ik adviseer om een groepsbrainstormsessie te organiseren en te beginnen met het gezamenlijk bedenken van ideeën, omdat dit bijdraagt aan zoveel mogelijk vernieuwende ideeën en het versterken van het groepsgevoel.
B: Ik adviseer om medewerkers eerst individueel ideeën te laten bedenken en opschrijven, voordat ze deze in groepsverband delen.
C: Ik adviseer om ideeën enkel individueel te laten ontwikkelen, omdat het bedenken en verder ontwikkelen van ideeën in groepsverband niet effectief is.

Appendix B

Appendix B1

P	**Statement**
Person	Creativity cannot be developed. *
Person	Creativity declines as you grow older.
Person	Creativity is only reserved for a certain group of people.
Product	An idea is only creative if it leads to innovation. *
Product	Creativity is unmeasurable.
Product	An idea is creative if it is highly unique.
Process	Creative achievements are mainly the result of sudden inspiration.
Process	The right hemisphere of the brain is responsible for creativity.
Process	Relaxation is a prerequisite for creativity.
Press	Brainstorming in a group is the best way to generate innovative ideas.
Press	Creativity flourishes best under conditions of total freedom.
Press	The physical work environment has little influence on creativity. *

* These items were removed because over 85% of respondents answered them correctly, indicating insufficient variance and low discriminative power.

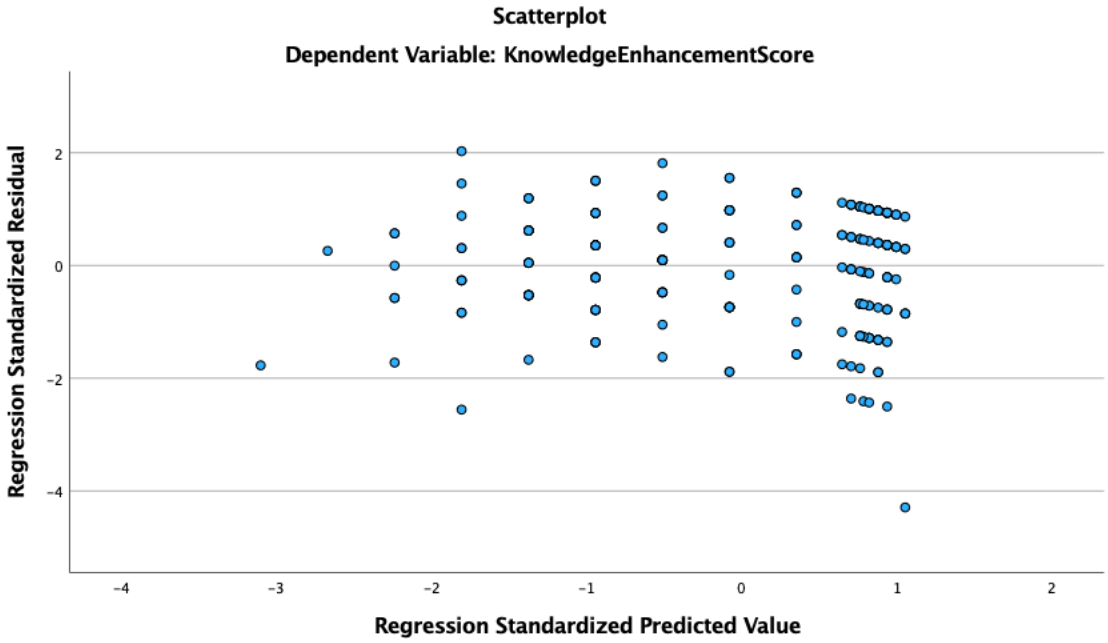
Appendix B2

Question	Myth
Suppose you want to enhance creative thinking within your organization. Would you consider conducting an external training for your team?*	Creativity cannot be developed
Suppose you're evaluating ideas generated during a brainstorming session. What do you believe is the best way to determine whether an idea is creative?	An idea is creative only if it leads to innovation
Suppose you're searching for an effective method to stimulate creative ideas during a product development process. What would you consider the best approach?	Creative performance is mainly the result of sudden inspiration
Suppose you want to increase creativity within your organization. What role, in your opinion, does the physical work environment play?	The physical work environment has little influence on creativity
Suppose you're part of an age-diverse team and can choose a select group of employees for a brainstorming session. How would you approach this?*	Creativity decreases as you get older
Suppose you want to assess whether a creative thinking training has been effective for employees. How would you best approach this evaluation?	Creativity is unmeasurable
Suppose you're developing a training to strengthen creative skills in the company. On what basis would you design the content?	The right hemisphere of the brain is responsible for creativity
Suppose you're designing a new work policy intended to optimally stimulate creativity. Which approach would you choose?	Creativity flourishes best under conditions of complete freedom
You watched a short informative video on creativity. To whom in your organization would you forward it?	Creativity is reserved only for certain groups of people
Suppose you're a judge in an internal contest where employees can propose ideas to solve a customer issue. When do you consider an idea creative?*	An idea is creative only if it is very unique
Suppose you notice your team has few creative ideas. A colleague suggests organizing relaxation moments. Would you go along with that?	Relaxation is a prerequisite for creativity
Your manager asks you for advice on the best way to gather innovative ideas within your organization. What approach would you recommend?	Brainstorming in a group is the best way to generate innovative ideas

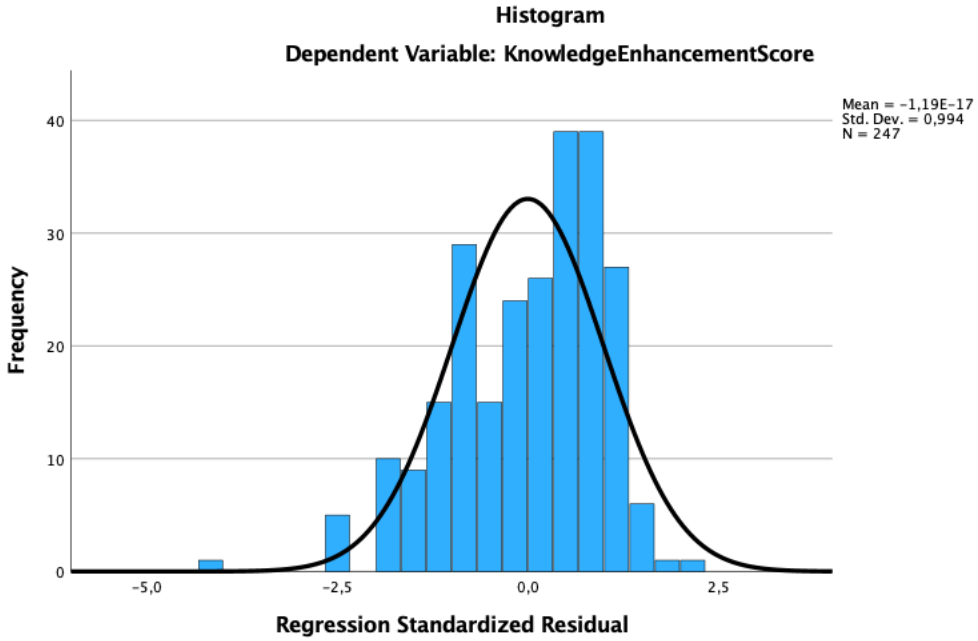
* These items were removed because over 85% of respondents answered them correctly, indicating insufficient variance and low discriminative power.

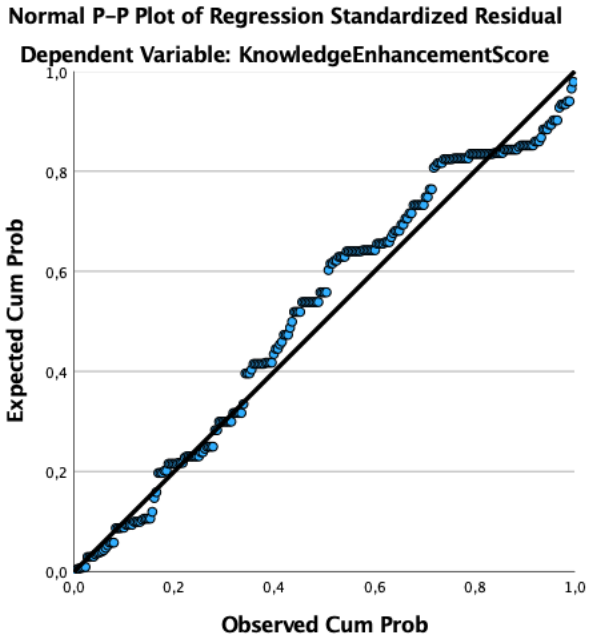
Appendix C

Appendix C1

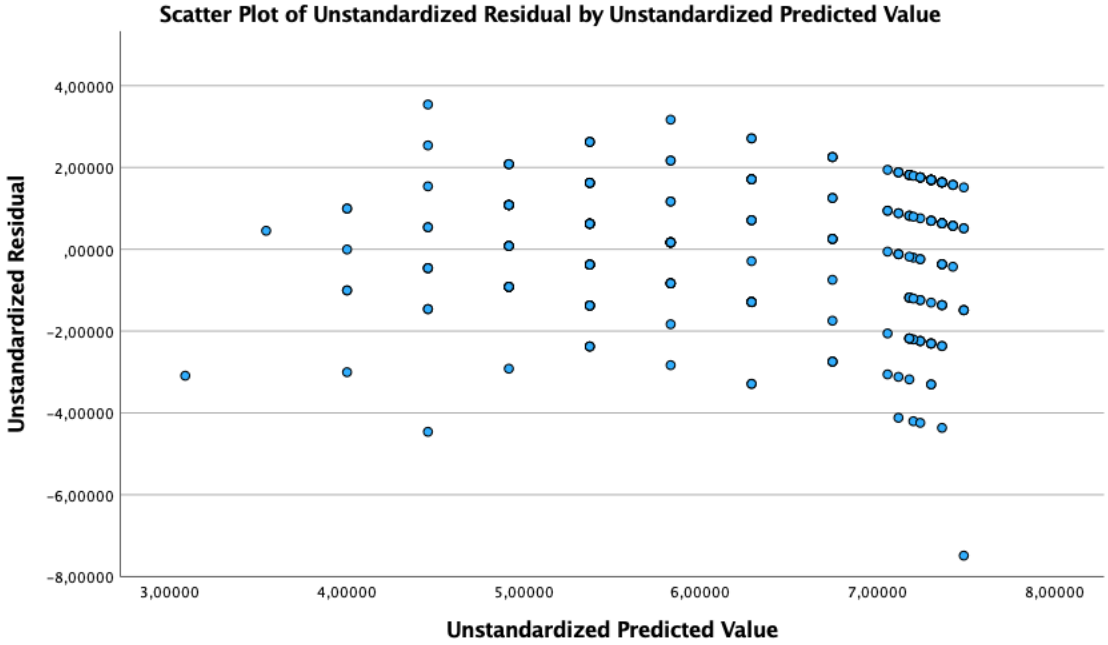


Appendix C2





Appendix C3



Appendix C4

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	5,579	,152		36,589	<,001					
	Group	1,689	,223	,416	7,580	<,001	,419	,437	,415	,997	1,003
	BaselineScore_Centered	,457	,082	,416	5,604	<,001	,268	,338	,307	,544	1,837
	Interaction_GroupXBaselineScore_Centered	-,395	,121	-,243	-3,271	,001	,059	-,205	-,179	,544	1,839

a. Dependent Variable: KnowledgeEnhancementScore

Appendix D

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
BaselineScore	290	5.45	1.849	.109

One-Sample Test

	Test Value = 7					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference Lower	Upper
BaselineScore	-14.261	289	<.001	-1.548	-1.76	-1.33

One-Sample Effect Sizes

		Standardizer[a]	Point Estimate	95% Confidence Interval Lower	Upper
BaselineScore	Cohen's d	1.849	-.837	-.971	-.703
	Hedges' correction	1.854	-.835	-.968	-.701

a. The denominator used in estimating the effect sizes.
Cohen's d uses the sample standard deviation.
Hedges' correction uses the sample standard deviation, plus a correction factor.

Appendix E

Appendix E1

Group Statistics

	HR	N	Mean	Std. Deviation	Std. Error Mean
BaselineScore	0	249	5.46	1.858	.118
	Human Resources	41	5.41	1.816	.284
Totalscore_Baseline_person	0	249	1.6225	.56266	.03566
	Human Resources	41	1.7073	.46065	.07194

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower	Upper
BaselineScore	Equal variances assumed	.129	.720	.138	288	.890	.043	.312	-.571	.658
	Equal variances not assumed			.141	54.705	.889	.043	.307	-.572	.659
Totalscore_Baseline_person	Equal variances assumed	4.277	.040	-.916	288	.361	-.08483	.09264	-.26715	.09750
	Equal variances not assumed			-1.056	61.469	.295	-.08483	.08029	-.24536	.07570

Independent Samples Effect Sizes

		Standardizer[a]	Point Estimate	95% Confidence Interval Lower	Upper
BaselineScore	Cohen's d	1.852	.023	-.307	.354
	Hedges' correction	1.857	.023	-.306	.353
	Glass's delta	1.816	.024	-.307	.354
Totalscore_Baseline_person	Cohen's d	.54963	-.154	-.485	.176
	Hedges' correction	.55106	-.154	-.484	.176
	Glass's delta	.46065	-.184	-.516	.150

Appendix E2

Group Statistics

	Marketing	N	Mean	Std. Deviation	Std. Error Mean
BaselineScore	0	252	5.54	1.754	.111
	Marketing	38	4.87	2.327	.377
Totalscore_Baseline_product	0	252	1.3214	.64048	.04035
	Marketing	38	1.0789	.78436	.12724

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower	Upper
BaselineScore	Equal variances assumed	2.222	.137	2.099	288	.037	.671	.320	.042	1.301
	Equal variances not assumed			1.707	43.568	.095	.671	.393	-.122	1.464
Totalscore_Baseline_product	Equal variances assumed	1.325	.251	2.109	288	.036	.24248	.11498	.01617	.46879
	Equal variances not assumed			1.817	44.748	.076	.24248	.13348	-.02641	.51137

Independent Samples Effect Sizes

		Standardizer[a]	Point Estimate	95% Confidence Interval Lower	Upper
BaselineScore	Cohen's d	1.838	.365	.023	.707
	Hedges' correction	1.843	.364	.022	.705
	Glass's delta	2.327	.288	-.061	.634
Totalscore_Baseline_product	Cohen's d	.66072	.367	.024	.709
	Hedges' correction	.66245	.366	.024	.707
	Glass's delta	.78436	.309	-.041	.655

Appendix E3

Group Statistics

	R&D	N	Mean	Std. Deviation	Std. Error Mean
BaselineScore	0	255	5.37	1.850	.116
	Research & Development	35	6.06	1.748	.295
Totalscore_Baseline_process	0	255	1.5765	.89235	.05588
	Research & Development	35	1.6000	.88118	.14895

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower	Upper
BaselineScore	Equal variances assumed	.996	.319	-2.078	288	.039	-.689	.331	-1.341	-.036
	Equal variances not assumed			-2.169	45.116	.035	-.689	.317	-1.328	-.049
Totalscore_Baseline_process	Equal variances assumed	.027	.870	-.146	288	.884	-.02353	.16062	-.33966	.29260
	Equal variances not assumed			-.148	44.128	.883	-.02353	.15908	-.34412	.29706

Independent Samples Effect Sizes

		Standardizer[a]	Point Estimate	95% Confidence Interval Lower	Upper
BaselineScore	Cohen's d	1.838	-.375	-.729	-.020
	Hedges' correction	1.843	-.374	-.727	-.020
	Glass's delta	1.748	-.394	-.757	-.026
Totalscore_Baseline_process	Cohen's d	.89104	-.026	-.380	.327
	Hedges' correction	.89337	-.026	-.379	.326
	Glass's delta	.88118	-.027	-.380	.327

Appendix E4

Group Statistics

	Facility Management	N	Mean	Std. Deviation	Std. Error Mean
BaselineScore	0	268	5.51	1.816	.111
	Facility Management	22	4.73	2.120	.452
Totalscore_Baseline_press	0	268	.9739	.79043	.04828
	Facility Management	22	.6364	.84771	.18073

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
BaselineScore	Equal variances assumed	1.296	.256	1.921	288	.056	.784	.408	-.019	1.587
	Equal variances not assumed			1.685	23.601	.105	.784	.465	-.177	1.745
Totalscore_Baseline_press	Equal variances assumed	1.348	.247	1.915	288	.056	.33752	.17626	-.00940	.68444
	Equal variances not assumed			1.804	24.095	.084	.33752	.18707	-.04850	.72353

Independent Samples Effect Sizes

		Standardizer[a]	Point Estimate	95% Confidence Interval	
				Lower	Upper
BaselineScore	Cohen's d	1.840	.426	-.010	.862
	Hedges' correction	1.845	.425	-.010	.859
	Glass's delta	2.120	.370	-.083	.814
Totalscore_Baseline_press	Cohen's d	.79475	.425	-.012	.860
	Hedges' correction	.79683	.424	-.012	.858
	Glass's delta	.84771	.398	-.057	.845

Appendix F

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	5.577	.155		35.866	<.001	5.270	5.883
	Group	1.664	.227	.409	7.328	<.001	1.217	2.111
	BaselineScore_Centered	.277	.061	.252	4.514	<.001	.156	.398
2	(Constant)	5.579	.152		36.589	<.001	5.279	5.880
	Group	1.689	.223	.416	7.580	<.001	1.250	2.128
	BaselineScore_Centered	.457	.082	.416	5.604	<.001	.296	.618
	Interaction_GroupXBaselineScore_Centered	-.395	.121	-.243	-3.271	.001	-.634	-.157

a. Dependent Variable: KnowledgeEnhancementScore

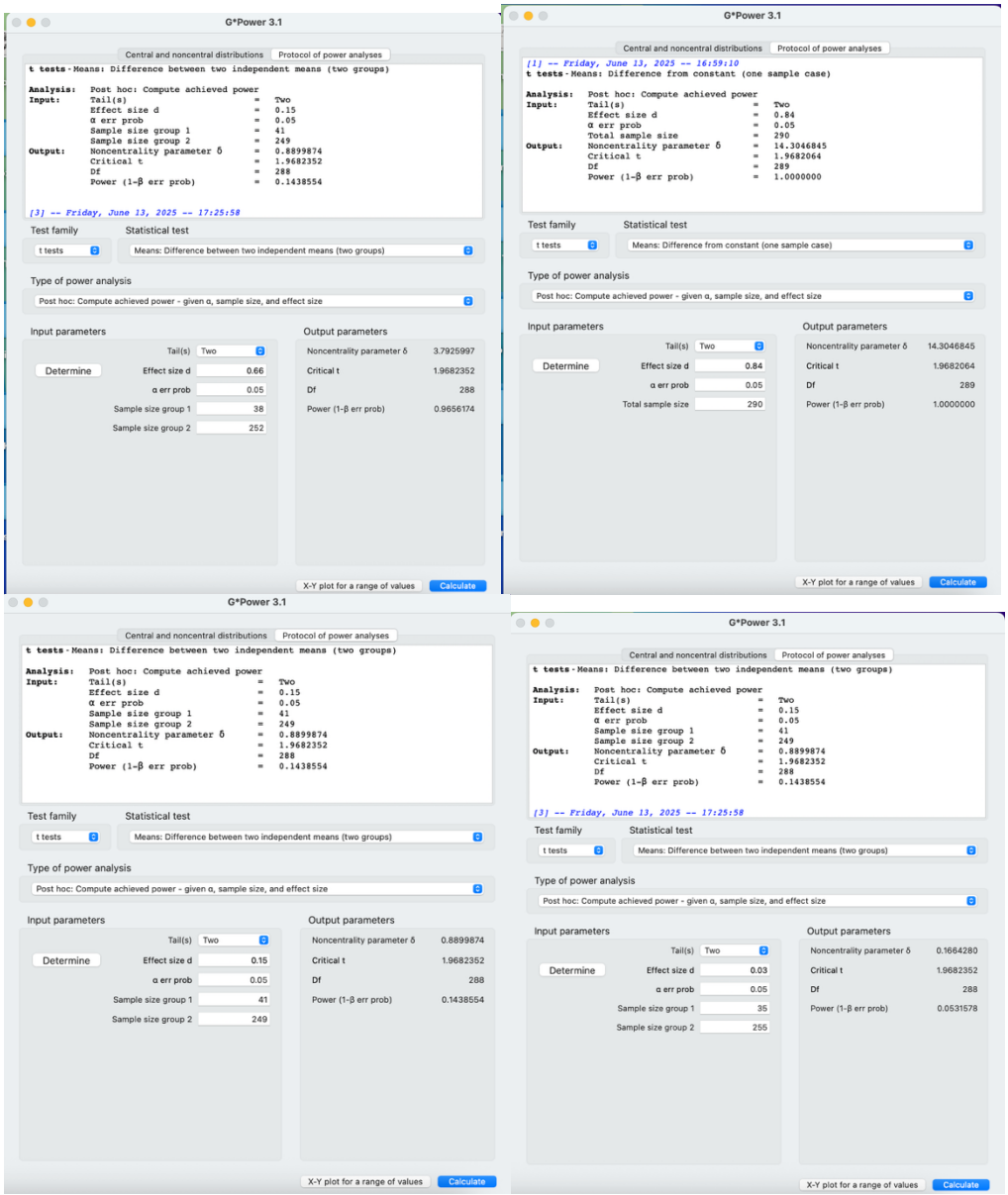
Appendix G

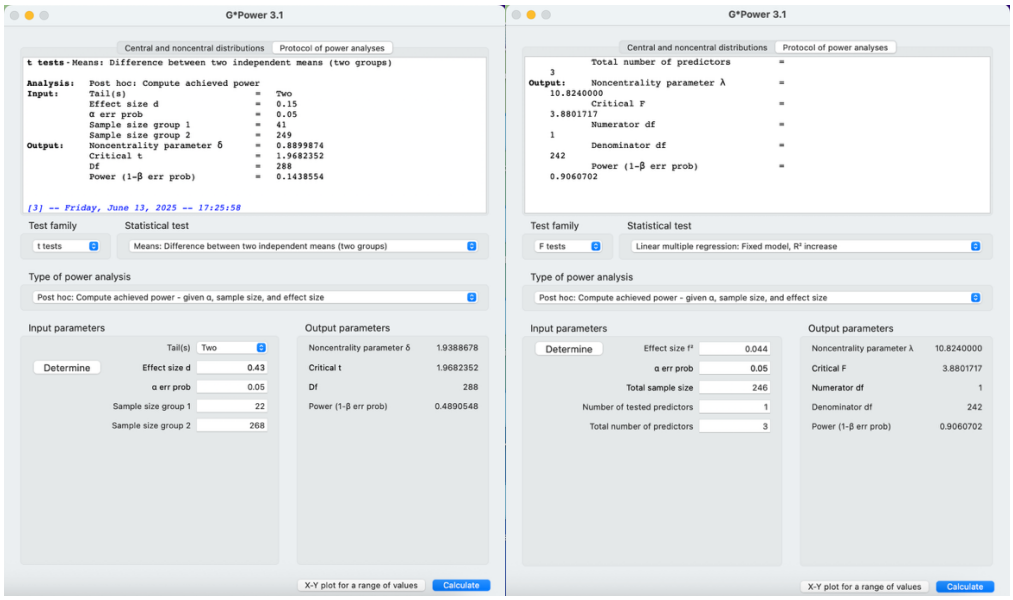
Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95,0% Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	5.555	.161		34.462	<.001	5.237	5.872
	Group	1.743	.236	.429	7.390	<.001	1.278	2.207
	Age_centered	-.013	.008	-.101	-1.732	.085	-.029	.002
2	(Constant)	5.553	.162		34.311	<.001	5.235	5.872
	Group	1.743	.236	.429	7.374	<.001	1.277	2.208
	Age_centered	-.015	.011	-.108	-1.303	.194	-.036	.007
	groupXage_centered	.002	.016	.011	.128	.899	-.029	.033

a. Dependent Variable: KnowledgeEnhancementScore

Appendix H




G*Power 3.1
Central and noncentral distributions
Protocol of power analyses
t tests - Means: Difference between two independent means (two groups)
Analysis: Post hoc: Compute achieved power
Input: Tail(s) = Two
Effect size d = 0.15
α err prob = 0.05
Sample size group 1 = 41
Sample size group 2 = 249
Output: Noncentrality parameter δ = 0.8899874
Critical t = 1.9682352
Df = 288
Power (1-β err prob) = 0.1438554
[3] -- Friday, June 13, 2025 -- 17:25:58
Test family
t tests
Statistical test
Means: Difference between two independent means (two groups)
Type of power analysis
Post hoc: Compute achieved power - given α, sample size, and effect size
Input parameters
Determine
Tail(s) Two
Effect size d 0.43
α err prob 0.05
Sample size group 1 22
Sample size group 2 268
Output parameters
Noncentrality parameter δ 1.9388678
Critical t 1.9682352
Df 288
Power (1-β err prob) 0.4890548
X-Y plot for a range of values
Calculate
G*Power 3.1
Central and noncentral distributions
Protocol of power analyses
Total number of predictors =
3
Output: Noncentrality parameter λ =
10.8240000
Critical F =
3.8801717
Numerator df =
1
Denominator df =
242
Power (1-β err prob) =
0.9060702
Test family
F tests
Statistical test
Linear multiple regression: Fixed model, R² increase
Type of power analysis
Post hoc: Compute achieved power - given α, sample size, and effect size
Input parameters
Determine
Effect size f²
0.044
α err prob
0.05
Total sample size
246
Number of tested predictors
1
Total number of predictors
3
Output parameters
Noncentrality parameter λ 10.8240000
Critical F 3.8801717
Numerator df 1
Denominator df 242
Power (1-β err prob) 0.9060702
X-Y plot for a range of values
Calculate