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Flourishing in a Non-Traditional Workplace Using Technology-Assisted Imagery

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FLOURISHING IN A NON-TRADITIONAL WORKPLACE USING

TECHNOLOGY-ASSISTED IMAGERY

by

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A Dissertation
Submitted to the Graduate School,
the College of Business and Economic Development
and the School of Leadership
at The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

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ABSTRACT

There is a new, non-traditional workplace where employees collaborate digitally from various remote locations (Scully-Russ & Torraco, 2020). Despite the transition from office to remote workspaces, professionals still value happiness and dream of flourishing (VanderWeele, 2021). Researchers identified six distinct but correlated dimensions of flourishing including emotional health, physical health, meaning and purpose, character strengths, social connectedness, and financial security (Weziak-Bialowolska et al., 2021). The new workplace is forcing organizations to revamp traditional methods that facilitate well-being as in-person methods become less viable (Scully-Russ & Torraco, 2020). Fortunately, mobile applications effectively deliver training and interventions (Collins et al., 2020). Whether Olympic athletes or working professionals, individuals use imagery to flourish (Adolphs et al., 2018). To use imagery, one creates a mental picture of a desired future state and forms intentions to make it a reality (Adolphs et al., 2018). This quantitative study examined whether technology-assisted imagery can be associated with increased flourishing among remote workers. The researcher deployed the Well-Being Assessment (Weziak-Bialowolska et al., 2021) to assess professionals at a technology firm. Participants were randomly assigned to a treatment or control group. Following a three-week imagery practice via mobile app, the researcher repeated the flourishing observation. Statistical tests revealed a positive relationship between technology-assisted imagery and flourishing levels. It was effective across all demographics and vocational levels.

Keywords: flourishing, well-being, technology assistance, imagery

ACKNOWLEDGMENTS

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LIST OF ABBREVIATIONS

CI   Confidence Interval

EVI   External Visual Imagery

HCD   Human Capital Development

HR   Human Resources

IRB   Institutional Review Board

IVI   Internal Visual Imagery

RAS   Reticular Activating System

WBA   Well-Being Assessment

CHAPTER I – INTRODUCTION

Work plays a vital role in people's lives, enhancing or inhibiting well-being (VanderWeele, 2017). The traditional workplace has been radically transformed due to artificial intelligence, changing worker demographics, the globalization of work, the popularity of side hustles, and a global pandemic (Fayard et al., 2021; Scully-Russ & Torraco, 2020). In the second half of 2021, more than 20 million workers voluntarily left their work in search of something better (Bruner, 2022).

Employees want to find well-being at work, meaning and purpose, good health, and happiness (VanderWeele, 2021). Social scientists have combined the feeling of happiness and the functioning of well-being, and they call this combination flourishing (Huppert & So, 2013). They have identified six distinct but complementary flourishing domains: emotional health, physical health, meaning and purpose, character strengths, social connectedness, and financial security (Weziak-Bialowolska et al., 2021). Flourishing is teachable (Seligman, 2011), primarily when the appropriate learning theory and instructional design are employed (Baturay, 2008; Swanson, 2022). Changing worker demographics, a new "gig" economy, rapid technological advancement, work globalization, and a global pandemic have forced organizations to revamp traditional methods that facilitate well-being at work (International Labour Organization, 2020; Scully-Russ & Torraco, 2020). Specifically, employees working from home need solutions that allow them to flourish (International Labour Organization, 2020; Sikder et al., 2019).

In the past, in-person (often costly) resources such as executive coaches or apprenticeships were popular methods to help individuals flourish at work. In this new

work setting, technology could help individuals improve their well-being (University of California Berkeley School of Public Health, 2015). Imagine employees flourishing at work, finding meaning, purpose, and alignment with their values. This study examines the relationship between imagination, technology assistance, and the ability of individuals to flourish in an emerging, non-traditional work setting.

Chapter One of this quantitative study examines the background of this research, including human flourishing, an emerging non-traditional work setting, mental imagery, technology assistance, and modern instructional designs that facilitate positive well-being. This chapter includes the problem statement, the study's purpose and significance, research questions and objectives, a conceptual framework, delimitations, assumptions, and operationalized definitions.

Background of the Study

Well-being is one of the most critical dilemmas of the modern workforce (Görgens-Ekermans & Steyn, 2016). The traditional workplace drastically transformed due to hyperautomation, changing worker demographics, and the globalization of work (Fayard et al., 2021; Scully-Russ & Torraco, 2020). The rapid adoption of *artificial intelligence* technology has revamped work and displaced workers and entire industries, a phenomenon known as *technological unemployment* (Quifan & Lee, 2021; Roberts, 2021; Scully-Russ & Torraco, 2020). For example, most websites now have a "chat" button that uses artificial intelligence to detect key words and answer user questions without involving an employee. Additionally, the COVID-19 virus disrupted the world with lockdowns and stay-at-home regulations (International Labour Organization, 2020). Social distancing mandates restricted workers, making in-person approaches to increasing

happiness and well-being impossible (Amundsen, 2021; Torous et al., 2020). A contingent workforce largely replaced traditional workers, and a new form of freelance contingent work, known as "gigs," exists in what is now termed the *platform economy* (Scully-Russ & Torraco, 2020). This shift in the modern workforce requires organizational leaders to lean into proven people management principles while making new applications of the best human capital development theories.

Human capital development (HCD) focuses on how individuals can successfully improve themselves and their organizations (Swanson, 2022). While some aspects of HCD need to evolve with the new workplace, many foundational theories and practices still benefit organizations as they seek to develop employees (Swanson, 2022). Three complementary theories support the effective development of the workforce, including psychological theory, economic theory, and systems theory (Swanson, 2022). The present study draws on the psychological and systems aspects of HCD.

Extensive research has clarified that people can form goals, aspirations, and intentions through mental imagery (Burton & Lent, 2016; Conderman & Young, 2021; Munezane, 2015). The remarkable human brain gives us the ability to experience what may only exist in one's imagination (Pearson & Kosslyn, 2013). Brain mechanics used in imagery practice include attention, modeling, visual perspectives, motion speed, and vividness (Burton & Lent, 2016; Ruffino et al., 2017; Waalkes et al., 2019). Research strongly connects imagery to improvement in academia, professional skills, career development, relationships, sports, counseling, and therapy (Neck & Manz, 1992). When employees learn to use imagery, it positively affects their internal dialogue and ability to achieve goals (Neck & Manz, 1992). This individual improvement—brought about by

imagery—leads to better organizational performance (Neck & Manz, 1992; Yorks, 2005).

Technology can assist individuals in creating digital virtual environments where they can

see themselves achieving their goals and dreams (Adolphs et al., 2018; Carolan et al.,

2017). Research must explore a connection between technology-assisted imagery and

flourishing in the new, non-traditional work setting.

Individuals Desire to Flourish at Work

Individuals value happiness and want to flourish (Diener, 2000; Myers, 2000;

VanderWeele, 2021). Researchers have been obsessed with measuring individual

happiness and satisfaction with life (Diener et al., 1985; Myers, 2000). However, leading

psychologist Martin Seligman (2011) encourages a focus on happiness *and* well-being.

He explains that happiness is a feeling, such as delight, ecstasy, warmth, or comfort. In

contrast, Seligman (2011) describes well-being as having several measurable functioning

elements, including engagement, mental health, purpose and meaning, positive

relationships, and achievement. Well-being can be measured, taught, reinforced, and

compounded (Seligman, 2011). Well-being can also increase as individuals become

aware of their strengths and begin acting on them (Seligman, 2011). In 2021, Weziak-

Bialowolska et al. identified six distinct but complementary domains that work in tandem

to nurture human flourishing. The team developed the Well-Being Assessment (WBA)

instrument to measure human flourishing holistically. The six domains include emotional

health, physical health, meaning and purpose, character strengths, social connectedness,

and financial security (Weziak-Bialowolska et al., 2021). With more than a billion

Google search results and two billion YouTube views, the subject of well-being has

become wildly popular with the modern workforce.

Twenty-first-century employees consider compensation, but they also value fulfilling work that contributes to the greater good and does not conflict with their values or lifestyle (Parker & Menasce Horowitz, 2022; Rosso et al., 2010). Remote working, online connectivity, flexibility, autonomy, and benefits packages emphasizing personal health and well-being are essential to modern workers (Gonçalves et al., 2020; Reisinger & Fetterer, 2021). Employees have historically sought in-person professional assistance and formal relationships in achieving growth and well-being in their work and personal lives (Amundsen, 2021; Douglas & McCauley, 1999; Segers et al., 2011; Torous et al., 2020). Formal relationships include apprenticeships, mentoring, and coaching. Douglas and McCauley (1999) define formal development relationships as "initiatives that pair up employees with peers, senior managers, or outside consultants for the purposes of learning and development" (p. 204). If not provided by employers, individuals have often paid for coaches and mentors (Segers et al., 2011). In fact, the value of the U.S. life coaching industry reached $1.02 billion in 2016, demonstrating workers' desire for improvement (LaRosa, 2018).

The Rapidly Evolving Workplace

In 2020, researchers estimated that 45-70% of workers worked from home most if not all of the time, and experts do not believe there will be a return to the traditional office (de Lucas Ancillo et al., 2020; Parker et al., 2020; Wong, 2020). There are benefits to the new work setting—increased productivity, a wider pool of available talent, flexible working conditions, and reduced commute times (de Lucas Ancillo et al., 2020; Parker et al., 2020). However, nearly two-thirds of remote workers feel less connected, have difficulty feeling motivated to work, and have experienced a reduction in well-being (de

Lucas Ancillo et al., 2020; Parker et al., 2020). In 2020, more than 150 executives met to discuss the best response to the rapid transformation of the workplace, specifically related to the COVID-19 pandemic. There, they expressed the need to prioritize a complete focus on all aspects of employee well-being (Gonçalves et al., 2020). Additionally, in a recent survey, more than 1,500 chief executives identified internal organizational issues (i.e., new ways of working, more compassionate leadership, and a deeper focus on well-being) as needing the highest priority in the present era (Mitchell et al., 2021). Investing in human capital, caring for the well-being of direct reports and their families, adapting new practices with flexible workspaces, and implementing new digital tools for remote work are demands of future people leaders (Connell et al., 2021; Gonçalves et al., 2020; Mitchell et al., 2021).

Traditional work has been disrupted by technology, changing worker demographics, and work globalization (Scully-Russ & Torraco, 2020). With artificial intelligence, worker competencies quickly become irrelevant, forcing workers and employers to consistently invest in upskilling and reskilling the workforce (Finette, 2021). The fast-tracked work-from-home adoption during the COVID-19 pandemic exponentially increased risks associated with emotional health and social connectedness, particularly for employees who live alone (International Labour Organization, 2020). Identified risk factors related to distancing mandates include reduced cognitive ability, depression, and poor well-being (Amundsen, 2021). Stay-at-home orders created opportunities for many individuals to improve their technical skills as they sought to transition to online social interactions (Amundsen, 2021). However, remote work has exacerbated the ill effects on flourishing domains, including social connectedness,

emotional health, and meaning and purpose (de Lucas Ancillo et al., 2020; VanderWeele et al., 2021). Non-traditional work-from-home scenarios have accelerated workers' need for digital tools that promote good physical and mental health (Amundsen, 2021; Torous et al., 2020). Researchers at the University of California Berkeley School of Public Health (2015) suggest that integrating technology that targets improving worker well-being will subsequently improve organizational productivity and the overall work experience. Though technology has disrupted traditional work (Scully-Russ & Torraco, 2020), technology may facilitate methods for flourishing in the future, including imagery (Adolphs et al., 2018).

Imagery as a Method for Flourishing

Discussions of imagery related to mental functions have taken place for thousands of years (Pearson et al., 2015). As early as 300 BC, Aristotle regarded images as pivotal in cognition, believing the human brain could not think without a mental image (Thomas, 2021). Imagery research has weathered years of debate, controversy, disbelief, and scorn, which persisted because of methodological constraints caused by internal visual representations' individual, private nature (Pearson et al., 2015). Other terms for imagery include visualization, imagining, or seeing something in the mind's eye (Pearson & Kosslyn, 2013; Rademaker & Pearson, 2012). Imagery is the lynchpin element in human functioning (Jeannerod, 2001). In the imagery process, one creates a mental picture of the desired target and develops intentions and plans to make it a reality (Adolphs et al., 2018; Gawain, 2002; Munezane, 2015). Often, individuals are encouraged by coaches, mentors, counselors, or therapists to imagine their best possible selves in a future where things have turned out well (Layous et al., 2012; Meevissen et al., 2011). This imagery practice

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helps individuals articulate goals and make specific plans to achieve the desired target while increasing optimism and positive affect—essential dimensions of flourishing (Malouff & Schutte, 2017).

Most people employ mental imagery throughout the day, recalling the color of a car or imagining how the new sofa would look at home (Dror & Kosslyn, 1994; Wimmer et al., 2015). But researchers find it significantly more profound than selecting a car or sofa, and its effects are widely associated with improvement and well-being (Dror & Kosslyn, 1994). Imagery is teachable, and children can employ it when told to do so as early as age three (Wimmer et al., 2015). Guided imagery, or guided visualization, is a technique in which scripts containing words, sounds, or visuals evoke positive mental images, feelings, and thoughts to bring about positive affect (Anthony et al., 1993). According to numerous neuroscientific studies, experiencing a scenario through mental imagery is physically and psychologically nearly the same as experiencing it in actuality; therefore, one can purposely use imagery to gain confidence and self-improvement to facilitate change (Bandura, 2001; Carrasco, 2011; Kavanagh et al., 2005; Munezane, 2015; Witmer & Young, 1985).

Imagery's Reciprocal Relationship with Positive Self-Talk

Self-talk—also known as inner speech or self-verbalization—is defined by Ellis (1962) as what we say to ourselves. Positive self-talk and self-affirmation have been researched in various fields, correlating an individual's internal dialogue with improved performance (Brickman et al., 1976). For example, in 1991, Ievleva and Orlick investigated a self-talk and mental imagery connection. The researchers concluded that athletes who healed rapidly demonstrated greater integration of cognitive behaviors with

physical therapy than slower-healing athletes (Ievleva & Orlick, 1991). In 1992, Neck and Manz studied the ability of cognitive strategies to enhance employee performance and confirmed the reciprocal relationship between self-talk and mental imagery. They concluded that employees could be more effective using self-affirmations coupled with imagery (Neck & Manz, 1992). Automatic negative thoughts such as *I'm worthless* are unavoidable, and when left unchallenged, the mind believes the negativity, and the body reacts poorly (Amen, 2020). However, individuals can reframe thoughts and redirect an internal dialogue that addresses negativity (while not ignoring reality) and displaces the power of negativity (Amen, 2020). Self-talk is potentially more effective if an individual has received praise to reward success versus blame, which leads to a feeling of helplessness (Brickman et al., 1976). Therefore, in the process of intentional imagination, rather than focusing on past problems, one concentrates on creating positive thoughts about the future, resulting in positive effects on one's internal dialogue (Waalkes et al., 2019).

Imagery's Reciprocal Relationship with Goal Setting

When practicing imagery, an individual creates a mental picture of the desired target and develops intentions to achieve it in reality (Adolphs et al., 2018; Munezane, 2015). Imagery taps into the creator's preferred future state; therefore, typical byproducts of imagery include goal identification and action plans (Burton & Lent, 2016; Skovholt et al., 1989). Professionals using mental practice and modeling can obtain higher-order thinking skills (Baker et al., 1985). Imagery has been called a "motivational bridge" that moves one from a visual image to target acquisition, especially if the desired object is available and skills and self-efficacy do not inhibit target procurement (Kavanagh et al.,

2005). Goal planning, also called goal setting, is frequently used to perpetuate success (Sides & Cuevas, 2020). Goal theory research suggests that clear goals with a strong commitment motivate increased learning and performance for groups and individuals (Mayer et al., 2020). When an individual imagines an ideal future state, the desire causes the brain to retrieve information relevant to planning and directs a behavioral response to achieve the target (Kavanagh et al., 2005).

In 1993, Gollwitzer introduced the concept of implementation intentions, which is closely associated with goal planning. Individuals form implementation intentions to translate goals into action to obtain targets (Gollwitzer, 1993). Implementation intentions are self-regulating "if-then" plans that allow individuals to imagine how they will behave in a predetermined manner in response to an anticipated situational context (Gollwitzer, 1999). Implementation intentions increase the likelihood of performing a behavior and the speed of initiating action (Sheeran, 2002). In a study of jazz musicians, Tarr (2016) found that mental imagery resulted in action planning and intentional implementation. Tarr (2016) noted that clear goals allow the mind to focus better, freeing mental energy for the present moment. Benson (1984) found that patients fighting illness wanted to be well, then they mentally planned to be well, and they took actions that led to more rapid healing and well-being.

Flourishing is Teachable and Buildable

Flourishing can be taught, reinforced, and compounded (Seligman, 2011). According to leading positive psychologist Martin Seligman (2011), choosing the proper instructional design for building levels of flourishing is critical. Selecting an appropriate instructional alternative among many learning theories and perspectives yields the best

results (Baturay, 2008). Social scientists and psychologists have developed and modified multiple learning theories influencing instructional design (Baturay, 2008; Swanson, 2022). Instructional design models have historically taken systematic, linear approaches, focusing on gaps in performance and designing content to fill the gaps (Banathy, 1996). However, recent learning theories, including constructivism and humanism, are concerned with adding experience to the learning process, and the person as a whole is the center of focus (Hollis, 1991). Instructional design that focuses on positive psychology, well-being, and flourishing should draw on these recent theories and include meaningful, experiential assignments (Seligman, 2011).

Technology-Assistance is Effective in Delivering Instruction

Mobile applications (apps) curate content for devices such as phones, watches, or tablets (Sikder et al., 2019). Internet-delivered programs are cost-effective solutions that enable the wide dissemination of strategies that improve well-being (Collins et al., 2020). Technology assistance simplifies the delivery of instruction and home exercises, and notification and reminder settings prompt users to practice regularly (Sikder et al., 2019). Users rapidly adopt mobile apps for learning and development purposes (Radianti et al., 2020). Researchers have demonstrated that technology can effectively curate content to enhance well-being and flourishing (Amundsen, 2021). Segers et al. (2011) found that online coaching interventions were more effective than face-to-face coaching with peers or outside consultants (although in-person coaching sessions with managers were ideal and easily accessed historically).

The workplace has become an essential context for targeting well-being interventions curated with technology (Carolan et al., 2017; Collins et al., 2020; Page &

Vella-Brodrick, 2009). The Google® and Apple® stores offer extensive options for

creating virtual vision boards to facilitate the identification of goals, dreams, and desires

(Burton & Lent, 2016; Waalkes et al., 2019). Some apps alleviate depression, while

others use guided imagery interventions to improve cognitive function in caregivers

(Sikder et al., 2019). Recent studies have revealed that mobile app technology

interventions improve negative symptoms in a stressed working population (Admundsen,

2021; Collins et al., 2020).

Background Summary

Individuals value happiness and want to flourish (VanderWeele, 2021). Modern

employees seek remote working, online connectivity, flexibility, autonomy, and benefits

packages emphasizing personal health and well-being (Gonçalves et al., 2020; Reisinger

& Fetterer, 2021). Imagery strongly correlates to improved individual well-being (Dror &

Kosslyn, 1994), leading to enhanced organizational performance (Neck & Manz, 1992).

Researchers have found that one can purposely use imagery to gain confidence and self-

improvement to facilitate change (Bandura, 2001; Carrasco, 2011; Kavanagh et al., 2005;

Munezane, 2015). Flourishing is teachable, particularly with appropriate instructional

design (Baturay, 2008; Seligman, 2011). Technology has proven effective in practicing

imagery (Adolphs et al., 2018; Fox & Bailenson, 2009) and delivering instruction

(Radianti et al., 2020; Sikder et al., 2019). This study connects imagery research and the

literature on flourishing and applies it in the professional workplace context. The present

study explores whether working professionals who practice technology-assisted imagery

can improve their flourishing levels while working in the emerging, non-traditional work

setting.

Statement of the Problem

Organizations have increased technology usage to facilitate work and enhance employee well-being (de Lucas Ancillo et al., 2020). Ideally, emerging technologies can facilitate mental imagery practice, allowing workers to flourish in a new, non-traditional work setting. Employees want to find well-being at work, meaning and purpose, good health, and happiness (VanderWeele, 2021). Employees have historically primarily sought in-person professional assistance and formal relationships such as coaches and mentors to improve their ability to flourish in their work and personal lives (Amundsen, 2021; Douglas & McCauley, 1999; Segers et al., 2011; Torous et al., 2020). However, amidst a transformation in the traditional workplace resulting from rapid automation, the rise of the platform or "gig" economy, social distancing mandates, globalization of work, and the surge in remote working, many workers now have reduced access to traditional, in-person methods for flourishing (Scully-Russ & Torraco, 2020; Torous et al., 2020). For decades, mental imagery has proven effective for both employees and employers in improving flourishing domains (Anthony et al., 1993; Burton & Lent, 2016; Neck & Manz, 1992). As the workplace evolves, so does the field of human capital development. This study offers HR scholars and practitioners creative approaches with emerging platforms for supporting the well-being of non-traditional workers, particularly in the technology sector. The consequence of not using technology-assisted imagery may be that remote-working employees sacrifice their ability to flourish at work.

Purpose of the Study

The purpose of this study is to determine the relationship between technology-assisted imagery and flourishing measures among remote-working professionals who no

longer work in a traditional office setting. The study will describe the main functions of imagery, including the reciprocal relationship with other cognitive behaviors such as positive self-talk and goal action planning (Cupal & Brewer, 2001; Ievleva & Orlick, 1991; Munezane, 2015; Neck & Manz, 1992). The literature review explores brain mechanics, including attention, modeling, visual perspectives, slow motion, vividness, and vision boards (Burton & Lent, 2016; Ruffino et al., 2017; Waalkes et al., 2019). The program will determine whether technology-assisted interventions improve cognitive behaviors, including mental imagery, and lead to flourishing (Burton & Lent, 2016; Gingerich & Eisengart, 2000). Finally, the researcher will use a validated tool to confirm that flourishing is teachable and buildable (Seligman, 2011; Weziak-Bialowolska et al., 2021).

Research Objectives

The researcher seeks to understand the relationship between technology-assisted imagery and flourishing measures among remote-working professionals who no longer work in a traditional office setting. The research objectives (ROs) of this study focus on exploring whether technology-assisted imagery can improve flourishing levels for remote workers. The study focuses on technology professionals who telecommute at least half of each work week. The objectives include,

> *RO1* – Describe the demographic characteristics of study participants, including age, gender, ethnicity, vocational level, employment status, and education level.

> *RO2* – Determine the relationship between imagery practice time and the change in flourishing for those who practice imagery.

RO3 – Compare the change in flourishing between non-managers and managers who practice imagery.

RO4 – Compare the change in flourishing between treatment group participants who practice imagery and control group participants who do not practice imagery.

RO5 – Determine the combined influence of imagery practice and vocational level on the change in flourishing.

Conceptual Framework

A conceptual framework is a graphical representation of a research project's important terms, variables, and relationships (Roberts & Hyatt, 2019). The picture provides the reader with the perspective the researcher uses to approach the study (Roberts & Hyatt, 2019). The literature informs a conceptual framework. HCD theory focuses on individual improvement that leads to organizational development (Swanson, 2022). Therefore, HCD theory undergirds the present study, and the framework depicts it as the foundation under all other elements.

Working left to right, the framework in Figure 1 illustrates the study's variables. The variables include employees' desire to flourish, their adoption of technology-assisted imagery in a non-traditional work setting, imagery's reciprocal relationship with self-talk and goal planning, and a correlation to improvement in the constructs of flourishing. Improving individual flourishing ultimately leads to organizational development (Swanson, 2022).

The conceptual framework begins by depicting the desire to flourish in a remote work setting. Aristotle's theories of thought, desire, and motivation are still present in

modern research (Kavanagh et al., 2005; Thomas, 2021). The framework depicts the theory layered on the foundation of human capital theory, supporting employees' desire to flourish (Diener, 2000; Myers, 2000; Sides & Cuevas, 2020; Tough, 1971). This depiction of remote-working employees includes RO1.

Athletes, students, counselors, and working professionals use imagery to achieve the desired future (Ievleva & Orlick, 1991; Neck & Manz, 1992). Technology can facilitate mental imagery training and practice (Burton & Lent, 2016; Sikder et al., 2019). In the conceptual framework in Figure 1, technology-assisted imagery (depicted with a mobile device) follows the desire to flourish in a non-traditional work setting. Modern shifts in society and the introduction of positive psychology require the application of contemporary learning theories and instructional designs (Baturay, 2008; Swanson, 2022). Therefore, the conceptual framework represents imagery practice built on learning theory application, supported by the human capital theoretical foundation.

The literature supports a reciprocal relationship between imagery, self-talk, and goal action planning (Ievleva & Orlick, 1991; Munezane, 2015; Neck & Manz, 1992), as depicted in the framework. The theory of planned behavior asserts that behavior intentions form when imagining the future (Gollwitzer, 1999). Behavior intentions are instructional self-talk that people dialogue with themselves to behave in specific ways in an imagined future (Triandis, 1980); therefore, the theory of planned behavior supports the self-talk portion of the framework. Goal Setting Theory states that goals that are clear and require more effort lead to higher performance than indistinct goals that require less effort (Locke & Latham, 2006). Locke and Latham (2002) correlated goals to affect, theorizing that feelings of success at work occur when one sees the ability to grow and

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meet new challenges. The framework shows Locke and Latham's (2006) theory supporting goal setting. HCD theory provides foundational support for the theory of planned behavior and Locke and Latham's (2006) goal setting theory.

Researchers have concluded that imagery correlates to several dimensions of flourishing (Burton & Lent, 2016; Cupal & Brewer, 2001). Human flourishing measurements are outcomes rather than predictors (VanderWeele, 2020). The researcher anticipates that the practice of technology-assisted imagery leads to higher levels of flourishing; therefore, an arrow depicts a causal relationship between technology-assisted imagery and increased flourishing. This picture represents RO2.

The framework lists the six dimensions of flourishing defined by Weziak-Bialowolska et al. (2021). When employees learn to use imagery, it positively affects their internal dialogue and ability to achieve goals (Neck & Manz, 1992). This individual improvement—brought about by imagery—unleashes expertise to develop and increase the host organization's performance, also known as organizational development (Neck & Manz, 1992; Swanson, 2022). In the final stage, the conceptual framework shows an increase in flourishing levels resulting from imagery practice, ultimately leading to organizational development. This depiction explicitly addresses RO3 and RO4. Finally, the study explores the combined effect of imagery practice and vocational level and the change in flourishing, which is also shown in the framework as RO5.

Figure 1. Conceptual Framework

HUMAN CAPITAL DEVELOPMENT THEORY

THEORIES OF THOUGHT, DESIRE & MOTIVATION

Employees Desire to Flourish But Work in a Non-traditional Setting

THEORY OF PLANNED BEHAVIOR
♥ Self-Talk

LEARNING THEORY

Technology-Assisted Imagery Training + Practice (treatment group)

Goal Planning
GOAL SETTING THEORY

ORGANIZATIONAL DEVELOPMENT

Increased Flourishing at Work
Emotional Health
Physical Health
Meaning & Purpose
Character Strengths
Social Connectedness
Financial Security

(Non-Managers, Managers)

RO1

RO2, RO3, RO4, RO5

Significance of Study

Bountiful research correlates mental imagery to improved performance (Cupal & Brewer, 2001; Ievleva & Orlick, 1991; Munezane, 2015). From Olympic athletes to working professionals, individuals who practice the behavior see significant improvement in various facets of life, such as work performance, relationships, and fitness (Burton & Lent, 2016; Neck & Manz, 1992; Waalkes et al., 2019). This study adds to the body of knowledge by comparing technology-assisted imagery and the flourishing of workers in a non-traditional work setting—specifically, remote-working professionals in the technology sector.

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Changes in technology, traditional work arrangements, in-person interactions, the platform economy, and globalization affect how we live, learn, work, and flourish (Scully-Russ & Torraco, 2020). Investing profits into human capital, caring for the well-being of direct reports and their families, adopting practices for flexible workplaces, and implementing new digital tools are the emerging attributes demanded of organizations and their people leaders (Connell et al., 2021; Gonçalves et al., 2020; Mitchell et al., 2021). Therefore, findings in this study contribute to the rapidly evolving field of human capital development as HR scholars and practitioners grapple to create new avenues for non-traditional workers to flourish, particularly in the technology sector.

Delimitations

Researchers set boundaries and determine what to include or exclude from a project to establish the scope, and these boundaries are known as delimitations (Roberts & Hardy, 2019). This study confines itself to volunteer participants solicited from the employees and contractors of a technology firm who are members of the Scottsdale Slack® communication channel. The study concentrates on non-union staff who are not on a tenure track. Because this study focuses on the new, non-traditional remote work setting, participants must spend at least half their weekly work hours at an off-site location (not working from an onsite business facility).

Researchers separate imagery into two categories: intentional mental practice full of expectancy and optimism versus passive, free daydreams or fantasies (Oettingen & Mayer, 2002; Skovholt et al., 1989). The present study focuses on proactive imagery that harnesses expectancy and action planning and excludes passive dreams or fantasies. Some literature asserts that negative thoughts produce emotional distress, but neutral

thoughts and self-talk lead to a positive state (Ellis, 1962; Neck & Manz, 1992). Other

research reveals that negative self-talk may provide motivation and improve performance

(Hamilton et al., 2007). The present study encourages only positive self-affirmations

rather than negative self-talk. Finally, the present study does not examine the perspectives

of imagery, nor does it address the vividness debate in the imagery literature. Instead, the

present study measures the effects of imagery on flourishing levels at varied vocational

levels (non-managers and managers).

Assumptions

Assumptions are factors often taken for granted in a study but are important to

note (Roberts & Hardy, 2019). This study includes the following assumptions: (a) the

instrument utilized to collect data is valid and reliable for determining levels of human

flourishing; (b) the program participants answer the survey questions honestly; (c) the

sample of participants for this study represents the population.

Operationalized Definitions

Some terms in this study may not have a common meaning to all readers;

therefore, the researcher has included operationalized definitions. Operationalized

definitions of terms reduce the possibility of being misunderstood (Roberts & Hardy,

2019). The descriptions have practical applications for assisting researchers in replicating

studies to establish validity (Meltzoff & Cooper, 2018).

1. *Artificial intelligence* – software and hardware capable of performing tasks that
   have historically required human intelligence (Quifan & Lee, 2021).

2. *Character strengths* – provide the ability for an individual to have healthy thought patterns and act in ways that contribute to society and benefit oneself, acting in accordance with virtue (Weziak-Bialowolska et al., 2021).

3. *Construct* – a conceptual term that uses a verbal surrogate to describe a phenomenon or mental event of interest (Howell et al., 2007).

4. *Employment status* – the status of an individual within an organization, including contracts for work or ongoing work performed by a full- or part-time employee (U.S. Legal, n.d.).

5. *Engagement* – being actively involved or interested in most activities (Marsh et al., 2019).

6. *Eudaimonic* – positive mental functioning such as resilience, vitality, and self-esteem (Huppert & So, 2013).

7. *Flourishing* – six distinct but complementary domains that work in tandem, allowing one to feel good and function effectively; a state in which ones life experience is going well (Huppert & So, 2013; Weziak-Bialowolska et al., 2021).

8. *Guided imagery* – a technique in which words, sounds, or visuals evoke positive mental images to bring about beneficial effects (Anthony et al., 1993).

9. *Hedonic* – the presence of positive feelings or emotions (Huppert & So, 2013).

10. *Imagery* – one's ability to form mental pictures and remember them long enough to rehearse obtaining the desired target (Morris, 1997). One can see scenarios through their own eyes, such as looking outward through a GoPro camera or others' eyes, like a selfie view (Callow et al., 2013).

11. *Implementation intentions* – translate goals into action (Triandis, 1980).

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12. *Latent variables* – mental states or events that have objective reality or are learned responses from previous evaluative responses (Bagozzi, 2007).

13. *Manifest variable* – does not have a causal relationship to a latent variable but acts as a correspondent to interpret the nature of the latent variable (Bagozzi, 2007).

14. *Platform economy* – a newer form of independent work performed by individuals who generate their own income by providing a service offered through a digital platform (Scully-Russ & Torraco, 2020).

15. *Reticular Activating System* – nerve tissue in the human brain that enables awareness of the world and the ability to think and learn and act. It perceives stimuli, responds to sights and sounds, and ignites action (French, 1957).

16. *Self-efficacy* – an individual's confidence in achieving outcomes (Bandura, 1977).

17. *Social connectedness* – the quantity and quality of desired and experienced social support and intimacy (Weziak-Bialowolska et al., 2021).

18. *Technological unemployment* – the revamping or elimination of jobs due to advances in technology (Scully-Russ & Torraco, 2020).

19. *Technology-assisted imagery* – technology that assists individuals in creating digital images or virtual environments where they can see themselves achieving their goals and dreams (Adolphs et al., 2018; Carolan et al., 2017).

20. *Vocational level* – vocation is the work in which a person is employed, and level is a position in scale or rank (Merriam-Webster, n.d). The terms are combined, and vocational level is an employee's rank in an organization.

21. *Well-being* – has several measurable elements, including positive emotions, engagement, relationships, meaning, and accomplishment (Seligman, 2011).

Summary

This study examines the relationship between technology-assisted imagery and flourishing measures among remote-working professionals who no longer work in a traditional office setting. Employees set personal and professional goals in the hopes of improving their feelings of happiness and well-being. Until recently, conventional methods used to increase flourishing at work included in-person coaching, mentorships, apprenticeships, or sessions with paid professionals. However, an emerging, non-traditional workplace creates constraints in improving flourishing using traditional methods. Working professionals are looking for digital solutions to flourish in a remote-work setting. Online interventions and digital virtual environments have effectively improved the constructs of flourishing.

The popularity of digital learning offers an opportunity to develop an app that guides workers in integrating imagery into their daily lives. This study aims to determine the relationship between technology-assisted imagery and flourishing measures among professionals who work remotely and are no longer in a traditional office setting. The study will evaluate whether technology-assisted programs improve cognitive behaviors, including mental imagery, and lead to flourishing (Burton & Lent, 2016; Gingerich & Eisengart, 2000). A review of related literature supports the conceptual framework model and the problem statement. The study may lead to discoveries that benefit any individual with a connected mobile device. In Chapter II, the researcher reviews the literature on human flourishing, the rapidly evolving workplace, mental imagery, technology assistance, and modern learning theories.

CHAPTER II – LITERATURE REVIEW

The present study seeks to determine the relationship between technology-assisted imagery and flourishing measures among remote-working professionals who no longer work in a traditional office setting. Chapter II provides a review of related literature that supports the conceptual framework for this study. The literature review includes an overview of imagery and how it can help employees flourish in a non-traditional work setting. Within the HCD field, the review will integrate instructional design and learning theories while incorporating relevant, 21st-century topics of technology and positive psychology (the systems and psychology "legs" of HCD theory). Included is a review of flourishing, the brain's imagery function, the evolving workplace, new applications of technology tools, and the evolution of instructional designs to facilitate human flourishing.

Flourishing Defined With Six Domains

Psychologist Martin Seligman (2011) has led a tectonic upheaval in psychology circles, focusing on *positive psychology* rather than mental disorders and the disabling conditions of life. He encourages his audiences to focus on hedonic happiness and eudaimonic well-being (Seligman, 2011). Seligman (2011) explains that happiness is a positive emotion. Happiness is the pleasure, rapture, ecstasy, and comfort that we feel—the pleasant life, whereas well-being has several measurable elements such as engagement, positive relationships, accomplishment, and achievement (Seligman, 2011). Well-being is synonymous with *flourishing*, meaning the individual feels that life is going well (Huppert & So, 2013). Flourishing individuals thrive and have high vitality in their lives' personal and social aspects (Amundsen, 2021). Flourishing is not a

momentary state of mind, but a condition sustained over time (VanderWeele, 2017). It is the opposite end of the spectrum of mental disorders such as depression and anxiety (Huppert & So, 2013). Given its popularity, some social scientists believe that well-being should be studied for its own value and not in comparison or contrast to a mental disorder (Huppert & So, 2013).

Multiple definitions of well-being and flourishing exist, and most include the dimensions of positive relationships, engagement, meaning or purpose, self-esteem, and optimism (Weziak-Bialowolska et al., 2021). A few definitions include mental health and social components such as social integration, positive relationships, or social acceptance (Huppert & So, 2013; Marsh et al., 2019). But financial security and physical health are often neglected as viable dimensions (Weziak-Bialowolska et al., 2021). Weziak-Bialowolska et al. (2021) identified six domains or constructs that, taken together holistically, define human flourishing, including emotional health, physical health, meaning and purpose, character strengths, social connectedness, and financial security. Each construct has comparable importance (Weziak-Bialowolska et al., 2021). This study adopts Weziak-Bialowolska et al.'s (2021) definition of flourishing.

The word *construct* is a conceptual term that describes a phenomenon or mental event of theoretical interest (Howell et al., 2007). A construct is a *latent variable* corresponding to a *manifest variable* (Bagozzi, 2007). The manifest variable in the present study is flourishing, and the six corresponding latent variables include emotional health, physical health, meaning and purpose, character strengths, social connectedness, and financial security (Weziak-Bialowolska et al., 2021). Latent variables do not cause a change in the manifest variable (Bagozzi, 2007). Instead, latent variables act as a

correspondent or a bridge that helps define the manifest variable (Bagozzi, 2007). The

manifest variable reciprocates and offers partial meaning to the latent variables (Bagozzi,

2007). The clarification of this relationship is vital because it means that the domains

(i.e., social connectedness and emotional health) continue to be independent constructs

that work in conjunction with the other constructs to manifest flourishing (Weziak-

Bialowolska et al., 2021).

Domain One: Emotional Health. Emotional Health includes the hedonic feeling of

happiness, which is typically a momentary state (National Research Council, 2013).

Seligman (2011) describes it as the feelings we have, such as pleasure, ecstasy, warmth,

contentment, and comfort. As a measurement within the Well-Being Assessment (WBA),

it also encompasses mental health and the ability to control and deal with difficult

emotions (Weziak-Bialowolska et al., 2021). The domain covers overall life evaluations

using the emotional and mental aspects of human functioning, previously measured with

tools such as the Satisfaction With Life Survey (Diener et al., 1985).

Domain Two: Physical Health. Physical health is the second construct of flourishing and

a measurement component in the WBA (Weziak-Bialowolska et al., 2021). The WBA

includes the physical health dimension because of its relationship to psychological well-

being (Cho et al., 2011). One's health creates the ability to sufficiently complete the

pertinent tasks in life both in the present and the future, making it a useful measure of

human flourishing (Weziak-Bialowolska et al., 2021).

Domain Three: Meaning and Purpose. The Meaning and Purpose domain is a

eudaimonic measure of well-being and flourishing (Weziak-Bialowolska et al., 2021).

According to the National Research Council (2013), eudaimonic well-being refers to the

meaning and value of human life. The Meaning and Purpose domain includes a sense of worthwhileness of daily activities, purpose, and overall satisfaction with life (National Research Council, 2013).

Domain Four: Character Strengths. Aristotle posited that acting with integrity achieves happiness (Aristotle, 1925), and this concept perpetuated a philosophy that moral virtues and character strengths are foundational to practical wisdom (VanderWeele, 2017). In 2004, Peterson and Seligman published the Values in Action criteria to describe a good human character. They documented 24 character strengths and correlated them to six virtues (Peterson & Seligman, 2004). In 2019, Huber et al. tested the character strengths of fairness, honesty, judgment, kindness, and love. They found that creating awareness of and applying one's signature character strengths could improve well-being (Huber et al., 2019). The topic of virtue is absent from many studies and measurements of human flourishing (VanderWeele, 2017). Positive psychologists readily adopt virtue (Peterson & Seligman, 2004). They define it as the ability to consistently contribute to society and the good of oneself, even when it requires sacrifice and delayed gratification (Weziak-Bialowolska et al., 2021).

Domain Five: Social Connectedness. Feeling respected by a community and having support and intimacy in communal relationships define social connectedness—the fifth domain of human flourishing (Weziak-Bialowolska et al., 2021). Social scientists describe low social connectedness as loneliness or social deficiency (Weziak-Bialowolska et al., 2021). The WBA measures social connectedness, including its positive and negative aspects (Weziak-Bialowolska et al., 2021).

Domain Six: Financial Security. According to researchers in Harvard's Human Flourishing Program, having financial resources that are sufficient and stable over time helps ensure that the other domains can continue to be effective for the foreseeable future (VanderWeele, 2017). VanderWeele (2017) does not claim that the financial security domain entirely characterizes human flourishing. However, when an individual has sufficient resources and is not consistently distracted by or worried about personal finances, the ability to achieve, preserve, and enhance well-being in coordination with the other five constructs is sustainable over time (VanderWeele, 2017; Weziak-Bialowolska et al., 2021).

Measuring the Flourishing Variable

Weziak-Bialowolska et al. (2021) developed a multidimensional measurement of flourishing, the Well-Being Assessment (WBA), as part of the Human Flourishing Program at Harvard University. It is essential to understand that an individual who is engaged in challenging activities such as obtaining an education or working towards a promotion may, at the same time, find meaning and satisfaction with life, thereby making measurements of multiple dimensions critical when these states coexist (National Research Council, 2013). The WBA is a reflective index of well-being (Bagozzi, 2007; Howell et al., 2007) with items addressing each of six distinct but correlated constructs of flourishing (Weziak-Bialowolska et al., 2021). Following the most modern research on human flourishing, the WBA uses an approach that blends the assessment of momentary emotional states with reflections about well-being over extended periods (National Research Council, 2013). The research team rigorously tested the instrument for validity and reliability (Weziak-Bialowolska et al., 2021). The findings showed good test-retest

correlation, stability over time, relevant health measures, and a good fit for the data across gender, age, education, and marital status (Weziak-Bialowolska et al., 2021). The instrument takes a holistic measure of flourishing and includes domain-specific scores (Weziak-Bialowolska et al., 2021). The six domain-specific scores allow users to choose interventions to improve well-being in each area (Weziak-Bialowolska et al., 2021).

Individuals experience positive and negative emotions, and they do not always have an inverse correlation (National Research Council, 2013). Individuals can perceive a single event simultaneously as positive and negative; therefore, well-being assessments should measure positive and negative emotions (National Research Council, 2013). The WBA uses a Likert-type scale to facilitate both ends of the perception spectrum (Weziak-Bialowolska et al., 2021). The Instruments portion in Chapter III of this document provides additional information about the WBA.

Flourishing at Work: A Critical Priority in Contemporary Times

With more than a billion Google search results and two billion YouTube views, the subject of well-being has become wildly popular. Individuals value happiness (VanderWeele, 2021), set goals, and take ownership of their personal and professional growth to find satisfaction in their work (Sides & Cuevas, 2020). Government officials, business leaders, HR managers, and scholars worldwide recognize the importance of happiness and well-being (Gonçalves et al., 2020; Huppert & So, 2013; Stober & Grant, 2006).

People also have an innate desire to improve (Diener, 2000; Gingerich & Eisengart, 2000; Myers, 2000; Sides & Cuevas, 2020; Tough, 1971). The term improvement refers to gradual but cumulative betterment, which can refer to mental

capacity, material circumstances, or the skills and capability of an individual (Slack, 2015). American workers participate in continuing education and training throughout their lives (National Academy of Sciences, Engineering, and Medicine, 2017). Tough (1971) found that the average adult initiates eight self-directed learning projects each year, investing more than 100 hours in each, with a preference for learning that is self-paced, flexible, and easy to change if the program is not meeting expectations.

Learning to flourish is teachable and buildable (Seligman, 2011). For decades, researchers have developed interventions that train participants to use cognitive behaviors that lead to the dimensions of flourishing (dos Santos et al., 2021; Hamilton et al., 2007; Ievleva & Orlick, 1991; Neck & Manz, 1992). Seligman (2011) succinctly states that "if well-being could not be lastingly increased, then the aim of positive psychology would have to be abandoned" (p. 32).

Personal development is popular among scholars and is gaining traction because of its significant impact on the modern workforce (VanderWeele, 2021). Academic publications dealing with coaching, mentoring, personal development, and self-improvement in the 2001-2005 period increased by 266% compared to the 1996-2000 period (Stober & Grant, 2006). For example, Neck and Manz (1992) published a concept called Thought Self-leadership. They posited that employees could use specific cognitive strategies, including imagery, to lead themselves. Gollwitzer (1993) and Sheeran (2002) researched implementation intentions and the plans individuals make for personal and professional improvement. And Seijts et al. (2004) examined personal change and development. They found that setting and meeting challenging goals increases self-efficacy, leading to improved performance (Seijts et al., 2004). Researchers strive to

measure individual happiness and satisfaction with life (Diener et al., 1985; Myers, 2000).

Social scientists describe happiness as evaluating how well one's life is going (Sääksjärvi et al., 2017). Individuals have varying criteria for what defines happiness or a good life and assign different weights to components or specific domains of life such as relationships, career success, fame, hobbies, good health, and the acquisition of things (Frisch et al., 1992). Recently, Stanford professors and a Gallup study revealed that only one-third of American workers are happy in their jobs (Burnett & Evans, 2016; Gallup, 2022). The emerging work-from-home phenomenon increases risks associated with emotional health and social connectedness (International Labour Organization, 2020). Risk factors include reduced cognitive ability, depression, and poor well-being (Amundsen, 2021).

Organizations want and need employees to flourish (Görgens-Ekermans & Steyn, 2016). Colby et al. (2002) describe meaningfulness at work as a critical indicator of human flourishing. In a 2020 study, Connell et al. found that building capabilities and providing more reskilling and upskilling opportunities have become priorities for many organizations. Görgens-Ekermans and Steyn (2016) explain that organizations work to cultivate an environment that allows employees to have positive experiences and mental well-being and grow professionally. Seligman (2011) reported on a study conducted at 60 companies where researchers discovered that organizations with a ratio of at least 2.9:1 positive to negative statements flourish and do well economically. The team found that, below that ratio, companies were not thriving or economically stable (Seligman, 2011).

A Rapidly Evolving Workplace

Historically, the workplace has been a building or facility where people perform work; however, ongoing literature has expanded the definition to describe a place where social relationships, training, engagement, creativity, and self-realization can occur (de Lucas Ancillo et al., 2020). Due to the gig economy, work globalization, technological unemployment resulting from artificial intelligence, and the global pandemic, an estimated 45-70% of employees worked remotely most if not all of the time in 2020, and experts do not believe there will be a return to the traditional workplace (de Lucas Ancillo et al., 2020; Parker et al., 2020; Wong, 2020). The new work arrangements have benefits, including increased productivity, a wider pool of available talent, flexible working conditions, and reduced commute times (de Lucas Ancillo et al., 2020; Parker et al., 2020). However, nearly two-thirds of remote workers feel less connected, have difficulty feeling motivated to work, and have experienced a reduction in well-being (de Lucas Ancillo et al., 2020; Parker et al., 2020).

Most firms have virtual work embedded in their systems, meaning workers are geographically separated while the organization continues to present itself as functioning from one physical location (Swanson, 2022). To succeed, virtual organizations must ensure efficient communication among teams and, when possible, include some physical meetings to build relationships and launch projects (Colky et al., 2002; Fayard et al., 2021). Team leaders and members must learn to interact effectively with information and communication technology (Fayard et al., 2021; Swanson, 2022). Bringing teams together for online synchronous chats humanizes technologically-based work and

supports workers with diverse locations and backgrounds (Fayard et al., 2021; Swanson, 2022).

According to de Lucas Ancillo et al. (2020), organizations have gradually been dehumanized, and the emerging workplace has exposed many weaknesses in businesses that have existed for years. While some aspects of HCD need to evolve with the new workplace, many foundational theories and practices still benefit organizations as they seek to develop employees (Swanson, 2022). Three complementary theories support the effective development of the workforce, including psychological theory, economic theory, and systems theory (Swanson, 2022). Figure 2 depicts these theories using a three-legged stool that supports human resource development theory and a "rug" of ethics that must undergird human resources (HR) policies, processes, and practices (Swanson, 2001). The present study draws on the psychological and systems aspects of HCD.

Figure 2. The Theoretical Foundations of Human Capital Development
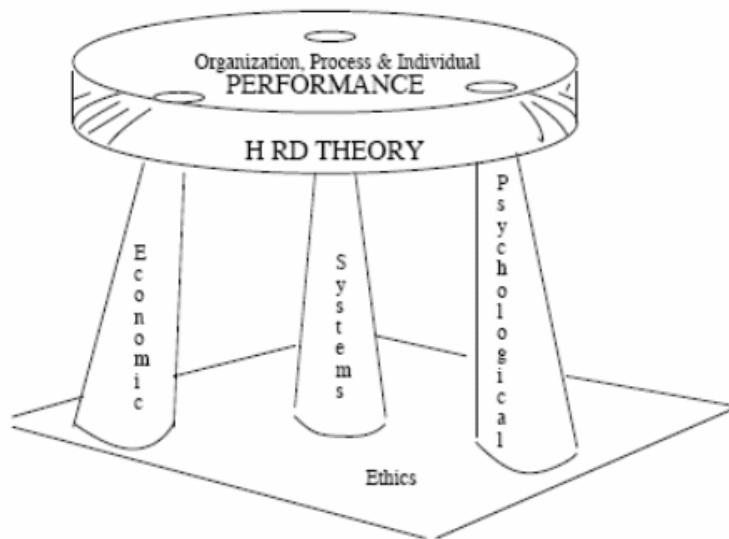
Note. From "Theory and Philosophy in Human Resource Development," by R. A. Swanson, 2001, *Foundations of Human Resource Development*, p. 306. Copyright 2001 by Berrett-Koehler Publishers, Inc. Reprinted with permission (Appendix A).

The role of a manager historically meant building team capabilities and competencies and automating workflows with the latest technologies (Gherson & Gratton, 2022). Artificial intelligence adoption makes worker competencies irrelevant, forcing managers to consistently upskill and reskill the team (Finette, 2021). Now, managers must also demonstrate empathy, seek out diverse talent, and create a supportive and psychologically safe environment—often while downsizing a team (Gherson & Gratton, 2022). Srivastava and Bhatnagar (2010) established factors that are critical to the success of an organization, one of which is a caring manager who shows concern for the welfare and well-being of individuals on the team. Companies such as Ford and Verizon are evolving their leadership development programs to refine communication, support, and empathy skills (Gonçalves et al., 2020). Organizations aim to develop enabling leaders who allow employees to work to their best abilities, build self-esteem, offer career growth, and provide flexibility—all components of flourishing (Gherson & Gratton, 2022; Srivastava & Bhatnagar, 2010). Consequently, HR leaders will need to redefine the manager role, likely creating two separate functions of people leadership and work leadership in the emerging workforce (Gherson & Gratton, 2022).

Many firms recognize workforce trends, including the importance of health, mental well-being, and physical resilience, and they are taking action (Gonçalves et al., 2020). For example, Chubb, PepsiCo, and Yum! Brands use coaches and psychologists, mobile applications, and new digital tools to help employees take an optimistic view of the future (Gonçalves et al., 2020). More than 1,500 c-suite executives offered insights into the shifting needs of their companies beginning in 2021 (Mitchell et al., 2021). In summary, the executives said they must quickly pivot to respond to surfacing risks and

opportunities; they said they must bring alignment within their enterprises to change the culture, structure, and leadership and provide constant upskilling for the employee population (Mitchell et al., 2021). Caring for the well-being of direct reports and their families, committing to flexible remote work, providing upskilling opportunities, and implementing new digital tools will be attributes demanded of leaders (Connell et al., 2021; Mitchell et al., 2021).

Harvard Business Review authors call the workplace transformation an evolution from workspace to culture space (Fayard et al., 2021). Organizations now prioritize social justice, inclusion, and diversity (Mitchell et al., 2021). Chase, IBM, Google, and Ernst & Young recently cooperated with City University of New York to hire 25,000 students, specifically focusing on Black, Latino, and Asian communities (Connell et al., 2021). Now, more than ever, workplaces must transform into a space that can give meaning to work and positively affect culture and society (de Lucas Ancillo et al., 2020).

A contingent workforce has replaced many traditional workers (Scully-Russ & Torraco, 2020). A new form of freelance contingent work (also called "gigs") exists in the *platform economy* (Scott et al., 2020). In a platform economy, gig workers generate income through a digital platform to provide a short-term service (Scott et al., 2020; Scully-Russ & Torraco, 2020). Examples include food delivery such as Door Dash, ride-hailing services like Uber and Lyft, and merchandise selling such as Craigslist and eBay (Scott et al., 2020; Scully-Russ & Torraco, 2020). The value of online consumer transactions has escalated the onslaught of gig work (Scully-Russ & Torraco, 2020).

In the 1950s, working a second job meant giving up nights and weekends to earn extra income (Scott et al., 2020). Today, working a second job (a gig or side hustle)

provides additional income *and* the opportunity to obtain flexibility in hours, variety in

tasks, and greater autonomy while gaining exposure to new work (Scott et al., 2020).

Employees are working gigs not only after work hours but alongside their primary job,

enabled by the emergence of non-traditional work arrangements (Scott et al., 2020). This

blend of autonomy and income generation has garnered much interest as more than ten

percent of the U.S. workforce participates (Scully-Russ & Torraco, 2020). But the factors

that make gig work attractive lend themselves to broader questions about the labor

market (Scott et al., 2020). Human resource practitioners must define and classify this

workforce because gig employment through a platform does not meet employment law

requirements or offer traditional work benefits and legal protections (Scully-Russ &

Torraco, 2020). Workers in the platform economy do not have well-defined career paths,

employer-provided training, coaching and mentoring programs, or fringe benefits (Zaber

et al., 2019). Legal and labor market experts, scholars, and employee advocates have

raised concerns about the ability of existing regulations to cover labor practices for gig

work (Scully-Russ & Torraco, 2020).

Workers in the United Kingdom, the European Union, and India migrated to the

platform economy faster than in the United States (Scully-Russ & Torraco, 2020). The

World Economic Forum (2018) conducted a study wherein human resource development

leaders forecasted a reduction in the full-time workforce of 75 million while also

indicating 133 million new jobs. However, many facets of the new jobs differ

significantly from traditional employment (World Economic Forum, 2018).

Organizational leaders are under pressure to make economic gains, which perpetuates the

hiring of short-term workers (World Economic Forum, 2018).

The flexible, work-from-home scenario has created opportunities for many individuals to improve their technical skills as they seek to transition to online work and social interactions (Amundsen, 2021). Throughout the global pandemic, the consumption of learning content grew massively (Iqbal, 2020). With restricted activities and group gatherings, people used their spare time to navigate new digital tools, discover professional topics, and learn another language (Gonçalves et al., 2020). The pandemic spiked unemployment in many areas (World Economic Forum, 2018). The unemployed are using their time away from work to invest in their future (Zaber et al., 2019), demonstrating that interest in personal change and professional development still exists.

Unfortunately, remote work has exacerbated the ill effects on flourishing domains, including social connectedness, emotional health, and meaning and purpose (de Lucas Ancillo et al., 2020; VanderWeele et al., 2021). Work-from-home scenarios have accelerated workers' need for digital tools that promote good physical and mental health (Amundsen, 2021; Torous et al., 2020). Researchers at the University of California Berkeley School of Public Health (2015) suggest that integrating technology that focuses on improved worker well-being subsequently improves productivity and the overall experience within an organization.

A Discussion of Mental Imagery

Imagery can be reconstructions of past experiences or mental pictures that anticipate possible future desired or feared incidents (Thomas, 2021). Aristotle described images (phantasmata) as part of the process of our imagination (phantasia; Thomas, 2021). He used the word "phantasmata" in the way we now describe mental imagery, and it was central to his theories of memory, thought, and motivation (Thomas, 2021).

According to Nussbaum's (1978) analysis of Aristotle's theories, an object that is not present in physical reality but *is* present in one's thoughts, memory, or imagination—in one's phantasia—creates a pull that motivates one to strive in obtaining it. Although an imagery debate persisted for over a century, Aristotle's theories of thought, desire, and motivation persist in modern research (Kavanagh et al., 2005; Thomas, 2021).

Mental imagery is a mental picture of something, about something, or directed at something (Thomas, 2021). Mental imagery has five main functions: (a) to rehearse specific motor skills (cognitive specific), (b) to rehearse a strategy or routine (cognitive general), (c) to imagine possibilities and create goals and the associated activities to achieve them (motivational specific), (d) to conjure emotions experienced during competition, such as stress (motivational general-arousal), and (e) to imagine oneself overcoming adversity but remaining confident and in control, being mentally tough (motivational general-mastery (Hammond et al., 2012; Guerrero & Munroe-Chandler, 2017).

The Physical Facets of Imagery

Neuroimaging studies show considerable overlap between active areas of the human brain during imagery and actual visual perception (Pearson et al., 2015; Rademaker & Pearson, 2012). When we open our eyes, vast amounts of information are presented, which requires a sifting to sort relevant information from irrelevant noise (Carrasco, 2011). The brain's reticular activating system (RAS) sorts through millions of sensory inputs and acts as a gatekeeper to determine what information should arouse the cortex and gain attention (French, 1957). The understanding of visual attention has advanced significantly in the past 25 years, and scientists now know that the attention

mechanism completes the sorting (Carrasco, 2011). According to Bandura (2001), attentional processes determine what one selectively observes and ultimately models in terms of attitude and behavior.

Using a model, individuals can compare their current state with goals and desires for the future and conform to them (Morin & Everett, 1990). Many individuals abstain from imagining the desired outcome until a model can demonstrate achievement (Allen, 2015). According to Adolphs et al. (2018), the brain employs similar functionality in physical vision and mental imagery because the regions of the brain that encode physical or sensory information also activate during mental imagery. An imaged scenario can produce an equally powerful emotional state as physically experiencing the same scenario (Adolphs et al., 2018). Elements or characteristics of an image, such as its taste, smell, or color, are stored and retrieved by gamma band activity in the RAS and executive processes in the brain's working memory (Garcia-Rill et al., 2013; Kavanagh et al., 2005). Even nearly blind individuals can have vivid mental imagery (Pearson et al., 2015).

Mental imagery is envisioning task performance without physical actions (Cohn, 1990). The term is used interchangeably with *mental practice*, which is thinking through and visualizing the steps required to complete a task (Driskell et al., 1994). Researchers have examined the physical aspects of imagery and how various factors affect its usefulness (Driskell et al., 1994). Exploration of imagery has included the level of vividness (Roberts et al., 2008), the speed or slow motion of imagery (Andre & Means, 1986), and the appropriate duration time to practice imagery (Weinberg & Jackson, 1985). Additionally, researchers have studied the effects of supplemental auditory

perception on imagery (Callow et al., 2013), and some have explored a linkage to memory (Wimmer et al., 2015). Researchers have also sought to understand whether age influences imagery's effectiveness (Dror & Kosslyn, 1994; Li-Wei et al., 1992; Wimmer et al., 2015).

There are multiple mental ways to 'see' images (Callow et al., 2013; Guerrero & Munroe-Chandler, 2017; Hardy & Callow, 1999). Researchers have specifically explored perspective in imagery, comparing external and internal visual imagery (Callow et al., 2013). Callow et al. (2013) explained that internal visual imagery (IVI) captures images in the first-person perspective, viewing scenarios through one's own eyes. IVI is like looking through a camera lens, similar to pictures produced with a GoPro camera mounted on one's forehead (Guerrero & Munroe-Chandler, 2017). Researchers describe IVI as imagining being inside the body to experience similar sensations to the actual physical setting (Mahoney & Avener, 1977). External visual imagery (EVI) uses a third-person perspective where one views their movements through another's eyes, such as watching oneself on YouTube or in a selfie (Montuori et al., 2018).

Researchers do not agree on whether either IVI or EVI perspective is more effective for achieving targeted outcomes (Hardy & Callow, 1999; Jeannerod, 2001; Montuori et al., 2018; White & Hardy, 1995). White and Hardy (1995) determined that EVI is more critical to acquiring skills, while IVI was optimal for participants who had practiced a craft. Hardy and Callow (1999) offered that specific tasks are better suited to either EVI or IVI. They explained that racquetballers and wrestlers who rely on "open skills" with an opponent might differ in their use of imagery than gymnasts who employ "closed skills" where there is no opponent (Hardy & Callow, 1999). Future research

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should examine the neural pathways to explain why and how visual imagery perspectives impact performance (Callow et al., 2013).

There are also varying conclusions about the importance of vividness and the quality of images (Dean & Morris, 2003; Isaac et al., 1986; Roberts et al., 2008). Dror and Kosslyn (1994) researched imagery vividness with the aging population, while Li-Wei et al. (1992) studied imagery vividness with children. In 1986, Andre and Means wanted to uncover the effects of slow-motion imagery because it was closely related to trending studies on relaxation meditation. While the slow-motion did not yield significant results, the findings reinforced other research by associating mental imagery practice with improved performance (Andre & Means, 1986).

The benefits of imagery may vary by the type of task or vocational level (Hardy & Callow, 1999). Researchers have found that elite athletes more widely demonstrate the positive effects of imagery than novices (Hardy & Callow, 1999). Similarly, Anthony et al. (1993) found imagery helpful for strategic-level managers to create detailed mental scenarios and develop contingency plans. Montuori et al. (2018) say that imagery may not be as beneficial in early learning stages or when performing a difficult-to-imagine skill. In 2021, dos Santos et al. found that both professional-level employees and managers who practiced positive cognition saw improvement. The managers, however, experienced significant stress reduction and improved sleep compared to the control group (dos Santos et al., 2021).

Neurophysiological studies on humans and animals and technological advances in neuroimaging and eye-tracking have yielded knowledge in identifying the brain areas involved in attention (Carrasco, 2011). Visual attention uses perception and cognition,

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making it a unifying topic between psychophysics, cognitive psychology, computational neuroscience, neuroimaging, and neurophysiology (Carrasco, 2011). Attention enhances and prioritizes the representation of relevant information and simultaneously diminishes less relevant information about the environment; therefore, focused, selective attention guides one's behavior (Bandura, 2001; Carrasco, 2011). Retrieving the characteristics of a mental image—what some call the rehearsal process—contributes to the vivid, lifelike images one creates mentally (Kavanagh et al., 2005). Individuals who imagine the critical components when learning a new task enhance their ability to perform it (Pearson et al., 2015), and mentally creating detailed scenarios can aid strategic and contingency planning (Anthony et al., 1993). After an individual clarifies the desired target and the reason for its acquisition, the brain begins to create pictures ("brainstorming") to fill gaps between the current state and the ideal future state (Allen, 2015).

Most discussions of imagery assume it is intentional and subject to voluntary control (Thomas, 2021). In reality, mental images are often unexpected and intrusive, and once begun, they can be difficult to stop thinking about (Kavanagh et al., 2005; Pearson et al., 2015). The theory of desire includes both this spontaneous, absent-minded intrusion and elaborate intrusion. Spontaneous intrusion can be distressing and may signal post-traumatic stress disorder, characterized by these unwanted, intrusive, and recurring images of a traumatic event (Pearson et al., 2015). Elaborate intrusion is the phenomenon that occurs after the initial thought as one begins to ruminate, dwell on, and give attention to the desired target (Kavanagh et al., 2005). This elaborated cognitive process brings about a strong desire, and the additional attention to visual images makes acquiring the desired state more likely (Kavanagh et al., 2005). There is a causal

relationship between elaborate intrusion and a preoccupation with achieving a target goal

and subsequent behavior that moves one towards the target goal (Kavanagh et al., 2005).

Conscious desires directly affect cognition, have an active role in determining targets,

and lead to behavior related to achieving targets and goals (Kavanagh et al., 2005).

Research reveals no crucial differences between desires for different targets, showing

commonality in the brain's cortical pathways whether one desires water, a soft drink, or

food, for example (Kavanagh et al., 2005).

Individuals can combine the intuitive and creative right-brain functions with the

rational workings of the left brain to create mental images (Anthony et al., 1993). Using

mental imagery that draws on processes from both sides of the brain allows working

professionals and corporate strategists to become more innovative and imaginative,

creating unique solutions to complex problems within their organizations (Anthony et al.,

1993). However, people who try to create mental pictures may struggle with vagueness

and uncertainty, making it difficult to build confidence and achieve goals (Hershfield et

al., 2011).

Technology-Assisted Imagery

A computer rendering that depicts oneself in the desired state in the future is

definitive, specific, and, therefore, more effective than imagery without technology

assistance (Hershfield et al., 2011). In 2018, Adolphs et al. experimented with using

avatars for learning a second language. According to the researchers, the interactions

between mental imagery and digital technology facilitate considerable motivation to learn

a second language. Technology-assisted imagery allowed the learners to physically see an

animated mock-up of their faces (avatars) as they imagined confidently and fluently speaking the new language (Adolphs et al., 2018).

Humans have the capacity for observational learning, allowing us to develop skills rapidly by observing models (Bandura, 2001). Social Cognitive Theory explains the power of demonstrating behavior that leads to attitude or behavior change by the viewer (Bandura, 2001). For example, public health campaigns, movies, and television shows seek to model attitudes and behaviors for viewers, then either reward or punish them for reinforcement (Bandura, 2001; Fox & Bailenson, 2009). Identification is how an individual can relate to the observed model (Bandura, 2001). The observer must sense that they are similar to the model in some way to feel encouraged that they will experience the same successful outcome (Fox & Bailenson, 2009). However, the skill level of the possible self must be reasonably different than the skill level in the current state (Adolphs et al., 2018). Technology offers the ability to create virtual representations with images of oneself superimposed onto a digital photo or scene (Fox & Bailenson, 2009). Fox and Bailenson (2009) described an obese man struggling to envision himself as a thin man. Using technology, the man put his face on a skinny man's body to make the goal seem attainable and realistic (Fox & Bailenson, 2009). A virtual environment where one sees themselves achieving desired outcomes enhances the experience of presence, meaning the user feels that the setting is realistic (Fox & Bailenson, 2009). Many users who use technology to imagine their successful performance often describe the experience as being in a movie (Fox & Bailenson, 2009). The presence and sensations of the replicated real world have been effective in helping users achieve positive changes in health and cognition (Rothbaum et al., 2000).

Desire is a cognitive event that associates an object or event with the feeling of pleasure or pain with attention; it is a conscious wish or urge for pleasure or to satisfy a want or move closer to wanted outcomes (Kavanagh et al., 2005). This psychological experience includes mental images and verbal self-talk about the attractive features of an object or activity (Salkovskis & Campbell, 1994). Each thought that an individual elaborates on and gives additional focus initiates an extra burst of action (Kavanagh et al., 2005). Plus, the more the imagery improves the match with the actual experience, the more a continued rumination or attention is reinforced (Kavanagh et al., 2005).

Imagery's Reciprocal Relationship with Goal Action Planning

In the practice of mental imagery, individuals develop goals and imagine an ideal future, often using the Best Possible Self method (Meevissen et al., 2011). The Best Possible Self method instructs individuals to mentally conceive a clearly defined future where everything has turned out as well as possible (Malouff & Schutte, 2017). Clarity about goals reduces ambiguity about what to achieve and directs an individual's actions toward a target (Matsuo, 2021). This guided imagery goal-setting intervention has effectively increased optimism and positive affect (Malouff & Schutte, 2017).

People typically act on their images of reality (Bandura, 2001). They set goals for themselves and anticipate the consequences of their actions (Bandura, 2001). Adults use goal-setting regularly to foster success (Sides & Cuevas, 2020). Goal Setting Theory states that clear and more challenging goals lead to higher performance than simple or vague objectives such as "do your best" (Locke & Latham, 2006). Locke and Latham (2002) correlated goals to affect, theorizing that feelings of success at work occur when one sees the ability to grow and meet new challenges. Setting specific and challenging

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goals enhances self-efficacy, and self-efficacy positively affects performance (Seijts et al., 2004). Individuals with clear goals gain skills for self-change, and self-change is critical in professional development and fulfilling potential (Matsuo, 2021).

Goal setting is a natural outcome of imagining a desired future state (Burton & Lent, 2016; Skovholt et al., 1989). For example, a weary traveler who imagines a conveniently-located hotel and sees a soft bed in their mind's eye immediately constructs information (such as geographic proximity and the cost of a room) to move them in the direction of their desire (Kavanagh et al., 2005). However, other incentives may affect behavior, so a traveler with loved ones at home may choose to navigate home rather than stay at a hotel (Kavanagh et al., 2005). Competing incentives give the individual the power to select and control behavior, and successful behavior control maximizes self-efficacy (Bandura, 1999). A professional working at home at a desk may spend a moment imagining a lunch-time exercise regimen to motivate a midday workout (Fox & Bailenson, 2009). The degree of desire, while important, is less relevant if incentives (i.e., a million dollars or significant weight loss) exist (Kavanagh et al., 2005). Future scenarios that individuals cognitively represent in their mind's eye operate as motivators of behavior (Bandura, 2001). Increased attention to a desired future state during a strong feeling of deprivation strongly influences cognitive processes that move the individual toward the desired target (Kavanagh et al., 2005).

Implementation intentions are plans created when imagining specific situations or critical moments (Gollwitzer, 1999). Implementation intentions increase the likelihood and speed of performing an imagined behavioral response when the opportunity to act arises (Sheeran, 2002). Detailed information (such as when, where, and how) also

increases the chances that one will perform the intention (Gollwitzer, 1999). Sheeran and

Orbell (2000) studied the effects of implementation intentions, and their findings

demonstrated that its use increases the likelihood of action. They concluded that

implementation intentions effectively replace previous behavioral tendencies with new

behaviors (Sheeran & Orbell, 2000).

Imagery's Reciprocal Relationship with Positive Self-Talk

Imagery is the process of creating a mental picture of goals and priorities that are

positive and ideal (Witmer & Young, 1985). Self-talk is what an individual says to

themselves silently or verbally (Ellis, 1962). Although they are distinct, there is a

reciprocal relationship between self-talk and mental imagery (Neck & Manz, 1992). One

should consider coupling affirmation statements with their mental image to achieve the

desired future state (Burton & Lent, 2016; Neck & Manz, 1992). Creating pictures of

future success is a productive technique for focusing on solutions and not solely on

problems (Burton & Lent, 2016). Individuals using imagery are encouraged to develop

attainable and positive goals (Burton & Lent, 2016). One's awareness of their strengths

and beliefs that their goals are positive and achievable are related to the internal dialogue

generated (Neck & Manz, 1992; Seligman, 2011). Practicing imagery promotes enhanced

self-efficacy beliefs (Waalkes et al., 2019), and self-efficacy, which explores human

agency through one's confidence in their capabilities, improves well-being (Bandura,

1977). According to Bandura (1997), self-efficacy is the belief that one has the necessary

competencies to execute the desired courses of action and produce desired results.

Modeling desired attitudes or behavior is particularly effective when designed to build

self-efficacy, and the viewer affirms that they can achieve the target (Bandura, 2001).

However, if people tell themselves they cannot successfully deliver results, they will not put forth the effort to make things happen (Bandura, 1997). Automatic negative thoughts are unavoidable, and when left unchallenged, the mind believes the negativity (Amen, 2020; Pincott, 2015). However, individuals can reframe thoughts and redirect an internal dialogue that addresses negativity (while not ignoring reality) and moves the body in a positive direction (Amen, 2020).

The theory of planned behavior asserts that behavior intentions form when imagining the future (Gollwitzer, 1999). A behavior intention measures a person's motivation to perform (or purposely *not* perform) a behavior (Sheeran & Orbell, 2000). Behavior intentions are instructional self-talk that people dialogue with themselves to behave in specific ways in an imagined future (Triandis, 1980). The self-talk accompanying these behavior sounds like "I intend to do X" (Gollwitzer, 1999). Talking to oneself about intended actions facilitates achieving the envisioned behavior by increasing readiness to achieve a target (Gollwitzer, 1999).

As listed here, the topic of self-talk has been approached in various fields, supporting the connection between an individual's internal dialogue and performance. Swanson and Kozleski (1985) focused their efforts on academics and communication in children with disabilities and found a linkage between positive self-talk and improved performance. Neck and Manz (1992) used social learning theory and focused on professional employees and managers. They posited that constructive thought management leads to enhanced performance and found that employees can motivate and lead themselves using self-dialogue and mental imagery (Neck & Manz, 1992). Studies have associated positive self-talk and enhanced performance in golf (Thomas & Fogarty,

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1997), tennis (Van Raalte et al., 1994; Mamassis & Doganis, 2004), swimming (Hatzigeorgiadis et al., 2011), and even throwing darts (Van Raalte et al., 1995). In 1986, Morran studied counselors who showed a positive relationship between self-talk and higher levels of facilitative performance. Hatzigeorgiadis et al. (2011) conducted a meta-analysis and found that positive self-talk facilitates learning and enhances performance.

In their discussion of self-awareness, Morin and Everett (1990) discuss the concept of self-evaluation, whereby individuals compare the actual self with the envisioned ideal self and detect any discrepancies. They asserted that individuals use inner speech actively to form their self-concept (Morin & Everett, 1990). Therefore, people with a rich and healthy self-concept frequently talk to themselves about themselves (Morin & Everett, 1990).

Researchers have extensively explored and compared positive and negative self-talk (Brickman et al., 1976). Some literature suggests that negative, often irrational thoughts produce emotional stress, but neutral thoughts and self-talk lead to a positive state (Ellis, 1962; Neck & Manz, 1992). Van Raalte et al. (1994) found that positive self-talk did not always lead to better performance, and negative self-talk was harmful to performance in general. Other research has indicated that negative self-talk may be motivational and improve performance (Hamilton et al., 2007). In a 1986 study, Goodhart suggested that activating negative self-talk about the possibility of failing may become the motivation for an individual to try harder and positively influence performance. According to Brickman et al. (1976), whether positive self-talk enhances performance depends on expectations about the future and whether the work or effort will be

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worthwhile and valuable. Neck and Manz (1992) found that increasing the frequency of personal success increases the frequency of positive self-talk and mental imagery.

Vision Boards Facilitate the Practice of Imagery

Mental imagery is widely studied and regarded as one of the foundational research areas in sports psychology (Silva & Weinberg, 1982). Research has connected mental imagery to improvement in football (Fenker & Lambiotte, 1987), karate (Hardy & Callow, 1999), and gymnastics (Simonsmeier et al., 2018). Additional research revealed the positive effects of mental imagery in rowing (Bar & Hall, 1992), track and field (Ungerleider & Golding, 1991), and basketball (Kendall et al., 1990).

Researchers have also studied with non-athletes. Warner and McNeill (1998) demonstrated imagery's usefulness in physical therapy. Miksza et al. (2018) tested the effects of mental rehearsal with melodic jazz musicians, as did Cahn (2008), Watson (2015), and Tarr (2016). Studies have been done in education, as demonstrated by Burke et al. (2014), who applied mental imagery to the ability of college students to achieve goals, and Sapp (1994), who found that imagery reduced test anxiety. Imagery has also been studied extensively and is effective in counseling psychology (Baker et al., 1985).

Managers and HR leaders choose various interventions to improve individual and organizational performance (Van Tiem et al., 2012). Vision boards are a popular method for imagining an ideal future state and obtaining personal and professional growth (Benedict, 2020). A vision board is a collection of pictures and inspirational words representing one's desires and aspirations (Waalkes et al., 2019). Career coaches and therapists frequently use the vision board model with clients who wish to improve but sometimes struggle to articulate their wants and needs (Froerer & Connie, 2016;

Gingerich & Eisengart, 2000). According to Burton and Lent (2016), vision boards benefit workers and organizations in career planning, skill development, and goal setting. Their usefulness extends beyond work into other facets of life, including awareness of self and others, enhancing creativity, reducing stress, improving health, and problem-solving in everyday living (Burton & Lent, 2016). How do vision boards work?

The human brain contains nerve tissue called the reticular activating system (RAS), which creates awareness of the world (French, 1957). The RAS allows humans to think, learn, and act (French, 1957). Figure 3 depicts the human brain, and the arrows demonstrate the pathway that extends up from the spinal cord through the RAS and branches into the entire brain (French, 1957).

Figure 3. The Reticular Activating System in the Human Brain
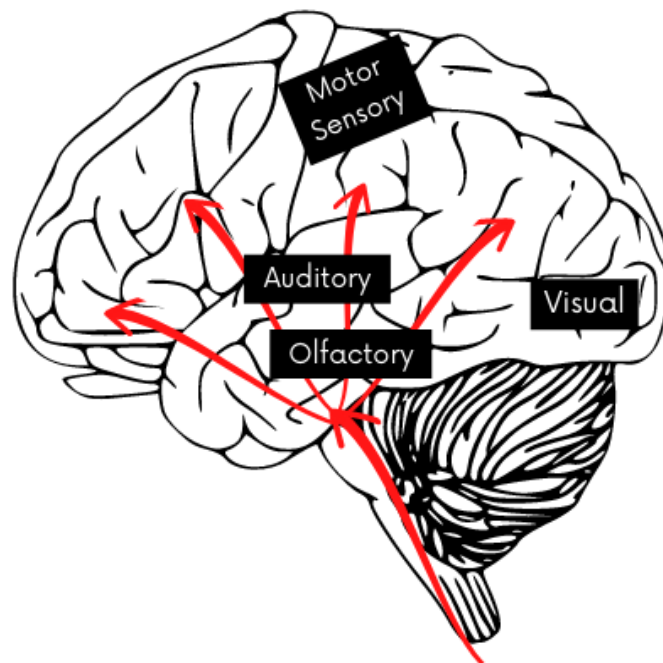
Note. Adapted from "The Reticular Formation" by J. D. French, 1957, *Scientific American, 196*(5), p. 54 (https://doi.org/10.2307/24940826). Copyright 1957 by Scientific American. Adapted with permission (Appendix B).

The RAS responds to images, smells, and touch (French, 1957). The RAS alerts the brain's cortex to a state of wakefulness, keeping it in a conscious condition and controlling motor movements (French, 1957). The RAS uses sensory input such as images, color, motion, and shapes on a vision board to prompt the brain to formulate the steps, actions, and behaviors required to complete a goal (Garcia-Rill et al., 2013).

Vision boards use images, colors, motion, and shapes to inspire their creators to develop a sense of identity and articulate goals (Burton & Lent, 2016). Vision boards empower creators to depict the desired life they imagine, with mental imagery being a vital part of the practice (Burton & Lent, 2016). Waalkes et al. (2019) explain that vision boards help build identity and improve self-confidence as the creator works towards self-understanding. Vision boards assist individuals in reflecting on complex questions (e.g., "What do I want to do with my life?" or "What's important to me?") and use visual media to articulate responses (Waalkes et al., 2019). Instead of focusing on past problems, vision boards shift the focus towards positive feelings and facilitate communication about goals for the future (Burton & Lent, 2016; Waalkes et al., 2019).

Because of imagery's reciprocal relationship with positive self-talk, individuals are encouraged to create scripts and positive affirmations about how achieving the desired future state will make them feel when they review images on a vision board (Burton & Lent, 2016). Scripts contain specific prompts or thought-provoking questions that guide users to find applicable images, create affirmative statements about the future, and reflect on their creation at the end of the vision board process (Waalkes et al., 2019). Scripts should be relevant to one's work environment or personal experience and involve images and feelings of the ideal future state (Anthony et al., 1993). Scripts should be

short, and it is helpful to read them aloud to evoke personal imagination to have the intended effect (Anthony et al., 1993).

Vision boards promote self-reflection, and the creator does not need to rely on verbal expression or determine the "correct" answer (Burton & Lent, 2016). Instead, vision boards empower individuals and provide the agency to graphically depict their interests, dreams, and aspirations (Waalkes et al., 2019). Individuals are encouraged to create vision boards that express a future career goal and an image of the individual performing that goal (Conderman & Young, 2021). The creator can imagine the salary, special skills and education required, and even the equipment needed to achieve the goal (Conderman & Young, 2021). Then, the individual can generally articulate the necessary steps for performing the depicted plan (Conderman & Young, 2021). Because they are personal and individual, vision boards often produce a supportive response when creators articulate and share their desired targets and ideal future via a vision board (Benedict, 2020; Waalkes et al., 2019).

According to Schwartz and Gladding (2012), employees should review their boards daily to turn intended behaviors into habits. Daily practice is more effective than weekly practice and substantially more effective than occasional practice (Limayem et al., 2007). Ievleva and Orlick (1991) and dos Santos et al. (2021) also concluded that imagery should be a daily practice. Focusing daily on the words and images prioritizes the inputs for the RAS and unconsciously helps employees make choices throughout the day that support identified goals, allowing them to review goal attainment (Burton & Lent, 2016; Carrasco, 2011; French, 1957). As individuals achieve specific goals and aspirations, they can replace those images with new graphics representing the next level

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of personal development or achievement (Adolphs et al., 2018; Burton & Lent, 2016). While the vision board does not impact reality, desiring and giving attention to the targets, objects, and events in the mind's eye directs one's decisions toward making the vision a reality (Kavanagh et al., 2005).

Organizations Benefit from Imagery

Organizations benefit enormously from imagery because it facilitates the ability of leaders to imagine future environmental scenarios and craft more comprehensive solutions (Anthony et al., 1993). Regarding professional work, imagery is beneficial in organizational settings because it reduces stress by clarifying goals and mentally rehearsing scenarios (Anthony et al., 1993). In 2021, dos Santos et al. conducted a study and found that positive cognition relieved stress and promoted flourishing in women workers. According to the research team, mental preparation using imagery allows leaders to create vivid mental pictures to make sense of a confusing environment (dos Santos et al., 2021). Their research uncovered that when managers use imagery, they develop cognitive maps to organize information, allowing them to gain clarity, draw on memory, and evaluate potentially effective situational outcomes (dos Santos et al., 2021).

Similarly, Neck and Manz (1992) found that mental imagery enhances individual and organizational performance. Anthony et al. (1993) explain that imagery helps corporate planners and managers process ideas, strengthen memory, overcome assumptions, thoroughly evaluate potential outcomes, and consider creative solutions. Specifically, professional workers can mentally travel to a future setting and imagine a scenario, which allows them to vividly sense their assumptions and test hypotheses about the organization or their working environment (Anthony et al., 1993).

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Researchers have debated whether prior knowledge or skill level impacts the usefulness of imagery. For example, Anthony et al. (1993) found imagery beneficial for strategic-level managers to create detailed mental scenarios to develop contingency plans. Along similar lines, Jeannerod (2001) found that elite athletes more widely demonstrate the positive effects of imagery than novices. Montuori et al. (2018) say that imagery may not be as helpful in early learning stages or when performing a difficult-to-imagine skill. But in 2021, dos Santos et al. found that non-managers and managers who practiced positive cognition improved. The managers, however, also experienced a significant stress reduction and improved sleep compared to the control group (dos Santos et al., 2021).

<center>Flourishing is Teachable and Buildable</center>

In 2005, the University of Pennsylvania approved and launched the master of applied positive psychology program (Seligman, 2011). Interest in positivity, well-being, and flourishing exceeded the expectations for that first year at Penn (Seligman, 2011). As the program matured, program leaders discovered that teaching and learning about well-being and flourishing transform leaders *and* students (Seligman, 2011).

Transformational leaders have a positive impact because they communicate the mission and establish clear organizational goals (MacKenzie et al., 2001). They cultivate enthusiasm and optimism, help individuals identify their strengths, encourage employees to challenge obstacles, and help remove barriers to personal goal attainment and enlightenment (Srithongrung, 2011). Scholars and corporate trainers regularly incorporate the topic of flourishing into programs (Seligman, 2011). However, modern shifts in society and positive psychology require the application of contemporary learning theories

and instructional designs to align with the new paradigms (Baturay, 2008; Swanson, 2022).

The Evolution of Instructional Design and Technology

In the mid-20th century, Bandura and Walters (1963) re-evaluated the prevalent Behaviorist learning theory, which says individuals learn automatic behavior and respond to repeated stimuli (Mergel, 1998). They popularized Swiss psychologist Jean Piaget's cognitive theory, explaining that learners process information before responding (McLeod, 2003). Cognitivism maintains that individuals are actively involved in learning by organizing knowledge and comparing new and existing data; however, their formed mental associations are not necessarily overt in demonstrated behaviors (Swanson, 2022). Humanistic Theory focuses on learning that involves the whole person rather than providing facts to be memorized (Hollis, 1991). Humanism is concerned with the knowledge of a person's life story, and the person as a whole is the center of focus (Hollis, 1991). Constructivism Theory adds experience to the cognitive processing of a base of knowledge (Stevens-Fulbrook, 2020). In other words, individuals adjust their notions of how the world works as they take in new information and experiences (Stevens-Fulbrook, 2020). In the emerging field of instructional design, understanding various learning theories influences how content is packaged and delivered to meet training objectives (Gustafson & Branch, 2002). Modern learning brings individuals together to work on projects and solve problems (Yorks, 2005). Instructional designers can make program choices based on desired outcomes (Swanson, 2022). Yorks (2005) describes that increased depth in individual learning leads to organizational transformation.

As society grapples with the emerging workplace, we simultaneously embark on the fourth industrial revolution, and with it comes automation that radically changes the nature of work (International Labour Organization, 2020; Quifan & Lee, 2021; Ra et al., 2019). The COVID-19 pandemic rapidly accelerated the use of artificial intelligence (Mitchell et al., 2021), and it is not difficult to imagine that technological unemployment (the replacement of human capital through artificial intelligence) will occur sooner than anticipated (Roberts, 2021). Academic literature unpacks two emerging trends, describing how technology will impact employment and skills. First, an optimistic outlook predicts a net increase in jobs (Ra et al., 2019; World Economic Forum, 2018). Second, newly created jobs will require higher-order cognitive skills for completing non-routine tasks, and these jobs are less likely to be replaced by artificial intelligence (Quifan & Lee, 2021; Ra et al., 2019). Technological advancement, including artificial intelligence, is driving the need for continuous personal and professional development, requiring a willingness to unlearn and relearn skills (Ra et al., 2019). This shift from the first to the fourth industrial age—the ability to unlearn and relearn—signals a need for evolving instructional design and technology (Baturay, 2008).

The COVID-19 pandemic has been a significant crisis, and individuals and organizations have taken the necessary actions to cope (Guan et al., 2020). Coping mechanisms vary among cultures and individuals (Guan et al., 2020). In Western society, coping during the pandemic led many individuals to prioritize envisioning their ideal selves and focusing on personal career development (Guan et al., 2020). As HR learning and development professionals navigate the implications of a new, non-traditional workplace, a learning approach that utilizes technology is necessary (Ra et al., 2019).

Regardless of the learning theory, content curation must synchronize video conferencing, online discussion boards, virtual teams, and interactive online training (Li, 2016).

Instructional Technology Facilitates Flourishing

In 2007, Hamilton et al. published an early study incorporating technology assistance. The researchers examined the effect of technology-assisted self-talk on performance by arranging participants into three groups. Self-talk is what a person says to themselves silently or verbally (Ellis, 1962). Self-talk includes self-generated or scripted words (Anthony et al., 1993). Hamilton et al.'s (2007) first group was a positive self-talk group. They were introduced to self-talk and given a sheet of example statements such as, "My legs are strong and powerful" or "I can maintain this pace." The second group received the same self-talk introduction, and the researchers advised them to listen to audio messaging of the same positive scripts during a bicycling performance. A third group received the same introduction to self-talk. The researchers instructed them to listen to audio messaging during their bicycling performance; however, the scripts included negative statements such as, "My legs are weak and lethargic" or "I can't maintain this pace." Participants using the technology-assisted positive self-talk intervention demonstrated the most significant performance gains and had less variability in their performance (Hamilton et al., 2007). The study not only lent support to previous self-talk studies but endorsed technology assistance as an appropriate intervention to improve performance (Hamilton et al., 2007).

Similar in its use of technology assistance, researchers Cupal and Brewer (2001) studied athletes with virtually identical prognoses and severity of a knee injury. They randomly assigned participants to a treatment group, a placebo group, or a control group.

The researchers conducted a one-way analysis of variance (ANOVA), and group differences were not statistically significant, meaning the groups were similar before the intervention (Cupal & Brewer, 2001). Athletes in the treatment group received ten individual guided imagery sessions (the technique in which words, sounds, or visuals evoke positive mental images, feelings, and thoughts to bring about some beneficial effect) and the typical course of physical therapy. The guided imagery sessions were scripted, audiotaped, and identical for all participants within the treatment group. The research team asked participants to listen to the audio messages at least once daily and record the number of times they did so. Athletes in the placebo group received the typical course of therapy, including encouragement and support, and the researchers told them to devote 10-15 minutes per day to imaging. The control group followed the regular course of physical therapy (Cupal & Brewer, 2001). Pre- and post-treatment survey questionnaires assessed participants using scales. Knee strength was measured using an industry-accepted assessment instrument. Treatment group participants demonstrated significantly greater knee strength after six months than placebo and control group participants (Cupal & Brewer, 2001).

Cupal and Brewer (2001) and Hamilton et al. (2007) were early adopters of technology-assisted programs to improve cognitive behaviors. In a more recent study, Munezane (2015) used goal planning theory combined with imagery and explored the effects on students learning a second language. Learners' willingness to communicate in the target language indicates their ultimate success when learning a second language. Munezane's (2015) study placed students into three groups. He introduced the first treatment to the concept of mental imagery. He gave the second treatment group the same

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introduction; however, he also gave the second group goal planning instruction. Munezane (2015) then compared both groups to a control group.

Students watched a five-minute focal scene from a movie to get acquainted with technology-assisted imagery and learn that people can imagine their future and achieve their dreams (Munezane, 2015). The research team trained students to close their eyes and perform mental imagery. The goal was for students to experience how the brain cannot distinguish between imagination and a live experience—how one can purposely imagine, create a positive mental state of belief, and improve performance (Munezane, 2015). The research team trained a second treatment group in imagery, and that group received additional instruction in formalizing goals associated with an ideal future (Munezane, 2015). The training followed suit with the imagery training in that students were shown a movie clip to demonstrate that individuals can make their wishes come true by setting goals and making a genuine effort to achieve them (Munezane, 2015). Students brainstormed and shared their desired achievements, including resolving environmental problems, human rights issues, international conflicts, and technology concerns. Munezane (2015) utilized pretest-posttest survey data and concluded that the combination of technology-assisted imagery and goal action planning led to a significant positive effect on the willingness to communicate in the target language—far better results than the imagery-only group and the nontreatment group (Munezane, 2015).

Interventions delivered through mobile apps have shown positive changes in well-being, resilience, exercise, and work performance (Amundsen, 2021; Collins et al., 2020). The Apple store offers 1.96 million different apps for downloading, and there are 2.87 million apps in the Google Play store—and the demand is growing exponentially (Iqbal,

2020). Remote work and stay-at-home orders have created opportunities for many individuals to improve their technical skills as they transition to online social interactions (Amundsen, 2021). Interventions delivered through mobile apps have shown promise in reducing common symptoms such as depression and anxiety (Collins et al., 2020). Sikder et al. (2019) endorse technology-assisted training because apps efficiently deploy content to users via laptop or mobile devices, provide home practice exercises, automate notifications, establish reminders, and capture usage data for researchers.

Extensive literature contains exercises and practices that facilitate positive cognitive behaviors, including imagery, to improve performance and flourish (Kelm, 2005; Seligman, 2011; VanderWeele, 2020). According to Webb et al. (2017), internet-based interventions that teach cognitive behaviors are beneficial for several reasons. First, interventions delivered through the internet enhance access to the content, allowing users to train from the comfort of their homes. Second, these interventions are typically affordable or no-cost, making them more available to individuals who may not have health insurance or the ability to pay out-of-pocket costs. Third, a perceived stigma may keep people from participating in treatment programs, so web-based content offers the privacy many individuals seek (Webb et al., 2017).

Increasingly, researchers and workforce experts recognize the workplace as a context for targeting well-being interventions and curating instruction with technology (Carolan et al., 2017; Collins et al., 2020). In 2021, dos Santos et al. integrated positive psychology into instruction to relieve stress in women workers, comparing individual contributors to managers in the healthcare field. The training aimed to augment positive cognition, yoga, and meditation to improve flourishing. The program (called Flourish)

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curated content via an app, and the results correlated the intervention to reduced stress and enhanced well-being. The researcher invited participants to the quasi-experiment via the company's intranet portal, and 58 women participated in the study. Two treatment groups (management and non-management) used the positive psychology intervention, delivered via an app. The researcher encouraged participants to practice positive cognition and meditation daily (dos Santos et al., 2021). The training incorporated positive psychology and cultivated several other dimensions of flourishing, as defined by Weziak-Bialowolska et al. (2021). In this quasi-experiment, the researchers found that perceived stress was significantly lower in the treatment groups versus the control group. Additionally, women in the management treatment group reported improved sleep quality considerably more than the control group (dos Santos et al., 2021). The results demonstrate that the technology-assisted intervention of positive psychology and meditation correlates to increased flourishing (dos Santos et al., 2021).

Internet-delivered programs are cost-effective solutions that enable the wide dissemination of strategies that improve well-being (Collins et al., 2020). According to Google, 86% of domestic YouTube viewers frequently watch videos to learn new things (2and2 & Google, 2017). Technology assistance simplifies the delivery of instruction and home exercises, and notification and reminder settings prompt users to practice regularly (Sikder et al., 2019). Technology also improves mental imagery practice (Rothbaum et al., 2000). When imagining an ideal future state, natural and realistic images are more effective than vague mental images, making technology important in creating depictions of a digital 'self' achieving the desired target (Adolphs et al., 2018; Hershfield et al., 2011). Technological virtual environments replicating the real world have been effective

in helping users achieve positive changes in health and cognition (Rothbaum et al., 2000). The Google and Apple stores offer extensive options for creating virtual vision boards related to goals, dreams, and desires (Burton & Lent, 2016; Waalkes et al., 2019).

<div align="center">Literature Review Summary</div>

This study seeks to determine the relationship between technology-assisted imagery and flourishing measures among remote-working professionals who no longer work in a traditional office setting. This chapter presents the literature examined to achieve this purpose. The research focused on mental imagery, the new, non-traditional remote workplace, technology assistance, and instructional design to improve human flourishing that leads to organizational development. Traditional in-office work settings and the roles within them are rapidly evolving (Gherson & Gratton, 2022). Digital virtual models representing oneself can help humans effectively achieve goals, targets, behaviors, and attitudes (Fox & Bailenson, 2009). Individuals and organizations benefit from depicting an ideal future state (Anthony et al., 1993). Recent studies reveal that mobile app technology shows promise in delivering training interventions that improve negative symptoms in a stressed working population (Admundsen, 2021; Collins et al., 2020). Chapter II equips the researcher and readers with a strong understanding of the literature that supports the study's purpose. Chapter III details the methodology used to examine the relationship between technology-assisted imagery and flourishing among remote-working professionals.

CHAPTER III – METHODOLOGY

The purpose of this study is to determine the relationship between technology-assisted imagery and flourishing measures among remote-working professionals who no longer work in a traditional office setting. Chapter III begins with a review of the research question and objectives. The chapter describes the research design, the population and sampling methods, the instrumentation and materials used, the procedures and data collection plan, the IRB approval process, the data analysis methods used, and the study's limitations. Chapter III concludes with a summary of the methodology.

Research Objectives

The primary question explored in this research study is whether technology-assisted imagery can improve flourishing. The study focuses specifically on professionals working in a non-traditional work setting. The objectives include,

RO1 – Describe the demographic characteristics of study participants, including age, gender, ethnicity, vocational level, employment status, and education level.

RO2 – Determine the relationship between imagery practice time and the change in flourishing for those who practiced imagery.

RO3 – Compare the change in flourishing between non-managers and managers who practiced imagery.

RO4 – Compare the change in flourishing between treatment group participants who practiced imagery and control group participants who did not practice imagery.

RO5 – Determine the combined influence of imagery practice and vocational level on the change in flourishing.

Research Design

Research design structures a study to address the central research question, including the project's major components such as the population, groups, measures, treatment program, and assignment methods (Trochim, n.d.). This study employed an experimental research design and sought to measure the correlation between technology-assisted imagery and flourishing. In experimental studies with concurrent controls, researchers randomly assign participants to one experimental group and one other control (or comparison) group, and they compare the groups (Fink, 2003a; Phillips et al., 2013). Random assignment is the preferred method for placing participants into different groups or treatments in a study (Meltzoff & Cooper, 2018; Trochim, n.d.). In this experimental study, the researcher randomly assigned participants to a treatment group that practiced imagery using the researcher-developed "Flourishing at Work" mobile app or a control group that did not practice imagery using the app. To do this, the researcher used a random number generator—a process described in detail in the Procedures section of this chapter (Alzhrani & Aljaedi, 2015).

The researcher selected this design for various reasons, including the strength of internal validity due to group equivalence (Field, 2018). Internal validity is the extent to which a program or treatment makes a difference for participants, as expected (Trochim, n.d.). Additionally, internal validity seeks to ensure that observed changes result specifically from the treatment and not from other possible causes (Trochim, n.d.). Random assignment to either a treatment or control group essentially creates equivalent groups, and the chances of any observed changes can more easily be attributed to the treatment and not to other differences in the groups (Trochim, n.d.).

Randomization also improves external validity, creating more ability to generalize the study results (Trochim, n.d.). External validity is the ability to generalize the results from one study to other persons, places, or times (Trochim, n.d.). If samples of the population are not random, external validity may be threatened, meaning critics might argue that the study's results are not repeatable if conducted in the future (Trochim, n.d.). Randomization also enhances statistical power (Trochim, n.d.). But what is statistical power, and why is it important?

Statistical power is the likelihood that the researcher will observe an effect of their treatment when it occurs (i.e., seeing flourishing levels increase due to practicing imagery; Trochim, n.d.). Increasing statistical power means the researcher increases the likelihood of observing an effect that is due to the treatment (Trochim, n.d.). An error occurs when the researcher rejects a true hypothesis (a Type I error, saying the program has an effect when it does not) or accepts a hypothesis that is not true (a Type II error, saying the program has no effect when it does; Trochim, n.d.). Researchers use software to conduct a power analysis; a higher power score indicates higher power while a lower power score indicates lower power (Trochim, n.d.). In the social sciences, 0.8 is an acceptable power level (Field, 2018). Alpha represents the chance of an error occurring, so a lower number indicates a more rigorous test (Trochim, n.d.). In the social sciences, an alpha of .05 is acceptable (Field, 2018). An alpha of .05 means that there is a 5% chance of a Type II error occurring, which is typical in the social sciences, while an alpha of .01 indicates the researcher is risking being wrong about the hypothesis (i.e., saying the treatment caused an effect when it did not) only one in 100 times (Trochim, n.d.).

Whether randomly assigned to the treatment or control group, all participants completed a self-assessment questionnaire to begin and conclude the study. The participants entered their email addresses at the beginning of each questionnaire. A self-assessment is simply an evaluation of oneself or one's actions (Merriam-Webster, n.d.). Previous research in the field supports a three-week duration for this study (Grützmann et al., 2021; Hammond et al., 2012; Hendrata et al., 2020; Lesiuk, 2010; Mamassis & Doganis, 2004). The three-week study started and ended on the same day for all participants. Treatment group participants entered their email addresses to log into the mobile app (allowing the researcher to make connections between the treatment, the pretest, and the posttest). Throughout the study, treatment group participants independently practiced technology-assisted imagery using their mobile devices. There was no observation by a researcher, rater, judge, or other participants, which reduced the likelihood that interactions between the experimenter and participants impacted the study's outcomes (Meltzoff & Cooper, 2018). All interactions with the digital platform were completely confidential (Phillips et al., 2013). The researcher solely implemented the treatment for consistency in administering the program to improve conclusion validity, which is the reasonableness of one's conclusions about the data (Meltzoff & Cooper, 2018).

This study sought to measure the relationship between technology-assisted imagery and human flourishing. The researcher used the Well-Being Assessment (WBA) profile developed by Harvard researchers as the pre-treatment and post-treatment self-assessment tool (Weziak-Bialowolska et al., 2021). The following sections detail this

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study's design, population, the targeted number of responses, materials and instruments, data collection procedure, and data analysis.

<div align="center">Population Census</div>

A target population is the group of individuals the researcher wants in the study (Meltzoff & Cooper, 2018). This study targeted a population of full- and part-time employees and contractors of a technology firm who spend at least half of their work hours each week working at an off-site location (not working from an onsite business facility). The population ($N = 984$) consisted of professional staff at a technology firm who were members of the Scottsdale Slack® channel. The researcher took a census by sending a Slack® message to invite all 984 members of the Scottsdale Slack® channel to participate in the study, along with a reminder three days later (Appendix C).

Reason for Choosing the Population

The researcher wanted to understand whether technology-assisted imagery improves flourishing for professionals in a non-traditional work setting. Because the intervention was a technology-assisted treatment, a technology firm with remote-working staff served as an appropriate population. A global technology firm was selected for this study, and its senior leadership acknowledged the benefits of imagery practice. With permission (Appendix D), the researcher sent a Slack® message inviting domestic employees and contractors of this technology firm who were members of the Scottsdale Slack® channel to participate.

Diversity in a target population is essential so that participants are representative of our multicultural society, and diversity ensures that participants are not likely to answer questionnaires too similarly (Phillips et al., 2013). Lack of diversity may limit a

researcher's ability to generalize findings and lead to ethical questions about the people who benefit from interventions (Shadish et al., 2002). Therefore, participation in the present study was voluntary and open to all demographics regardless of age, gender, ethnicity, vocational level, employment status, or education level. Individuals qualified for the study if they met specific criteria (Phillips et al., 2013). Because the researcher was examining flourishing at work, participants were required to work for the organization with either full- or part-time employment or independent contractor status. Also, the intervention was only available through a mobile app; therefore, participants agreed to use their mobile devices throughout the study. Volunteers agreed to specific responsibilities; they acknowledged that they were only eligible for incentives if they completed both the pretest and posttest questionnaires (Phillips et al., 2013).

Census

The researcher conducted a census, sending an invitation to participate to all members of the Scottsdale Slack® channel. Eligibility criteria establish who can participate in the research and who cannot (Fink, 2003a). The present study's eligibility criteria included volunteers who responded to an invitation (Appendix C) sent to the Scottsdale Slack® channel with permission (Appendix D) and completed the consent form (Appendix E) before the deadline. It excluded individuals who did not respond before the deadline, did not complete the consent form, or were not members of the Scottsdale Slack® channel.

When nearly every individual has an equal chance of selection for the study, the researcher uses probability sampling, meaning the sample is representative of the target population (Fink, 2003c). In the present study, the respondents represent the target

population because all workers had access to the communications platform, similar

working hours and conditions, equivalent vacation allotments, and remotely worked at

least half of their working hours each week. The respondents were moderately

homogeneous (similar to each other) because participants were domestic professional

workers who were non-unionized and non-tenured and had access to a mobile device.

The researcher only sent the invitation to members of the Scottsdale Slack® channel

because workers outside the geographic region have differences in work culture and other

conditions. Participants indicated demographic information in the pretest only, including

age, gender, ethnicity, employment status, vocational level, and education level.

Targeted Number of Responses

Statistical power is the likelihood that a researcher will observe the effects of their

treatment if any exist (Field, 2018). Researchers conduct power analyses to calculate the

chances of an error occurring (Trochim, n.d.). An acceptable power level is 0.8, meaning

there is an 80% chance of detecting a Type II error if one exists (Field, 2018). In the

present study, the researcher sought a 5% margin of error to achieve power (Trochim,

n.d.). According to Field (2018), researchers should calculate the desired number of

targeted responses using statistical power (a score of 0.8), the margin of error (with .05

recommended), and effect size, which should be estimated using data from previous,

similar research. Effect size measures the magnitude of the observable effect of the

treatment (Field, 2018). For the present study, the researcher sought a medium effect size

of 0.5 (based on similar 2019 flourishing research by Umucu et al.). G*Power® provides

a calculation tool to determine the targeted number of responses for data collection. After

entering the recommended 0.8 statistical power score, the .05 margin of error score, and a

medium effect size of 0.5, the researcher calculated a targeted number of responses of 128 participants using the G*Power calculator.

Incentives often improve participation (Phillips et al., 2013). As an incentive, the researcher entered participants who completed both the pretest and posttest into a drawing for three Amazon gift cards valued at $100 each. Participants who finished only the pretest were not eligible for the incentive; however, every participant who completed the pretest also completed the posttest.

Instrumentation

The pretest survey included 18 items (Appendix F). The researcher sent all participants a link to the pretest (Appendix G). The WBA self-administered survey, developed by a research team at Harvard University (VanderWeele, 2017), consists of 12 items (Appendix H) and was used with permission (Appendix I). An additional six items were researcher-developed questions for collecting demographic data. The self-administered survey instrument contained closed-ended questions; therefore, a quantitative design was in order (Field, 2018; Trochim, n.d.). The tool collected ordinal, nominal, and ratio level data. Table 1 addresses the type of data collected.

Table 1 *The Well-Being Assessment and Demographic Questionnaire*

Research Objective	Data Collected	Data Type
RO1	Gender	Nominal
	Age	Ordinal
	Ethnicity	Nominal
	Employment Status	Nominal
	Education Level	Ordinal
	Vocational Level	Ordinal
RO2	Practice Time (in minutes)	Ratio
	Flourishing Change	Ratio
RO3	Vocational Level	Nominal
	Flourishing Change	Ratio
RO4	Group (Treatment or Control)	Nominal
	Flourishing Measure	Ratio
RO5	Practice time (yes/no)	Nominal
	Flourishing Change	Ratio
	Vocational Level	Ordinal

The instrument took less than 5 minutes to complete and was curated online through the SurveyPlanet® cloud-based service. Only the research team collected and analyzed data. Immediately following the three-week study, the researcher administered the WBA questionnaire to both groups (Appendix J). The research question and objectives guided the study, and the WBA instrument, along with questions created by the researcher, enabled the attainment of the research objectives.

The Well-Being Assessment

This study utilized the 12-question WBA, shown in Appendix H (VanderWeele, 2017). This portion of the instrument facilitated data collection for each of the six domains of flourishing, and the researcher summed the score of each item to calculate an overall flourishing measurement (VanderWeele, 2017; Weziak-Bialowolska et al., 2021). Questions one through 12 were scale questions that required responses with scores ranging from zero to ten. Two questions are associated with each of the six domains of human flourishing (VanderWeele et al., 2021; Weziak-Bialowolska et al., 2021). The researcher asked identical questions before and after the intervention.

Researcher-Developed Items

In addition to the 12-question WBA, the pretest survey instrument included six questions developed by the researcher, which were required (Appendix F). Participants' demographic nominal data, including gender, age, and ethnicity, were collected in questions 13, 14, and 15, respectively. Questions 16, 17, and 18 collected data regarding participants' employment status, vocational level, and education level, respectively.

Scoring the Well-Being Assessment

Items in the WBA encompassed an 11-point Likert scale, ranging from 0 (*Not Satisfied, Extremely Unhappy, Poor, Not at All Worthwhile, Strongly Disagree, Not True of Me, or Worry All of the Time*) to 10 (*Completely Satisfied, Extremely Happy, Excellent, Completely Worthwhile, Strongly Agree, Completely True of Me, Do Not Ever Worry*). WBA administrators sum the scores to calculate an overall flourishing measurement (ranging from 0 to 120), and higher overall scores indicate higher levels of flourishing (Weziak-Bialowolska et al., 2021). However, each item in the WBA

correlates to a dimension of flourishing, and domain-specific scores are derived by averaging the responses for items associated with each domain (VanderWeele, 2017; Weziak-Bialowolska et al., 2021). Table 2 associates each item number with its construct of flourishing.

Table 2 *Well-Being Assessment Questions and Associated Constructs of Flourishing*

Questions	Dimension of Flourishing
1, 2	Emotional Health
3, 4	Physical Health
5, 6	Meaning & Purpose
7, 8	Character Strengths
9, 10	Social Connectedness
11, 12	Financial Security

According to the literature, daily imagery practice is more effective than weekly practice and substantially more effective than occasional practice (dos Santos et al., 2021; Ievleva & Orlick, 1991). Focusing daily on the words and images helps employees make unconscious daily choices that support their goals (Burton & Lent, 2016; Limayem et al., 2007). Therefore, the researcher analyzed app usage data to assess practice time and correlate it to flourishing measures.

Validity and Reliability

Construct validity results from an instrument measuring what it purports to measure (Fink, 2003a). Researchers establish construct validity through expert opinion, correlation tests, reasoning, logic, or focus groups (Phillips et al., 2013). The WBA was validated with a construct approach using empirical techniques such as factor analysis—discussed later in this section (Weziak-Bialowolska et al., 2021). The research team

examined correlations between the latent variables to provide differentiation among the multiple constructs (Marsh et al., 2019). These correlations were valuable for developing and validating scales (Marsh et al., 2019). In determining the best approach to measuring and validating human flourishing, an interdisciplinary team of experts recommended at least two items per domain (VanderWeele et al., 2020). WBA administrators must sum the scores to calculate an overall flourishing measurement (Weziak-Bialowolska et al., 2021). However, each item in the WBA correlates to a construct of flourishing, allowing researchers to explore domain-specific interventions if desired (Weziak-Bialowolska et al., 2021).

According to Weziak-Bialowolska et al. (2021), in developing the WBA instrument, the researchers sought: (a) good reliability with Cronbach's alpha coefficient of at least 0.80 across the scales; (b) test-retest stability over one year with a median test-retest correlation of at least 0.70; (c) a well-defined factor structure according to the indices of fit in structural equation modeling; (d) stability and factor structure generalizability based on responses from multiple time points; (e) factor structure that is invariant across gender, age, marital status, and education level; and (f) convergent and discriminant validity through test-retest stability, objective measures of health from health professionals, self-reported health measures, and demographic variables including gender, age, marital status, and education (Weziak-Bialowolska et al., 2021).

Harvard researchers used confirmatory factor analysis (used to test the measures of a construct) and structural equation modeling (which explores a phenomenon within the structure of a model) because of the multiple domains of flourishing (Weziak-Bialowolska et al., 2021). The integration of both approaches, combined with traditional

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exploratory factor analysis (which explores the underlying relationships among variables), leads to an improved distinction between the latent constructs (Weziak-Bialowolska et al., 2021). Using only the confirmatory factor analysis provided a poor fit (*Comparative Fit Index* = 0.872); however, the fit improved (*Comparative Fit Index* = 0.918) when using the combined approaches (Weziak-Bialowolska et al., 2021). The goodness of fit demonstrated that the WBA factors are appropriately defined (Weziak-Bialowolska et al., 2021).

A reliable questionnaire is consistent enough so that subsequent measures of the items produce nearly the same results (Fink, 2003a; Phillips et al., 2013). Researchers can establish reliability through the test-retest process (Field, 2018). In 2021, Weziak-Bialowolska et al. validated the WBA after discovering consistency in test-retest correlations. The WBA showed a good fit to the data that were invariant over time, levels of education, age, gender, marital status, and health measures (Weziak-Bialowolska et al., 2021). The WBA was selected for the study because it is a reflective index of well-being that provides valuable information about the components that make up well-being (Weziak-Bialowolska et al., 2021). The researcher plans to study further the constructs of flourishing in the future.

Assessing personality traits, character, and attitudes is difficult, so in 1932, Likert developed a scale to analyze these personal, individual measurements (Boone & Boone, 2012). A Likert scale contains a series of items combined into a single variable to provide a quantitative measure (Boone & Boone, 2012), as demonstrated in the present study by combining the dimensions of flourishing into a single trait of flourishing (Marsh et al., 2019). The WBA was also selected for the study because it incorporates Likert-type

scales with an 11-point scale for each flourishing measurement item. An 11-point scale

offers a midpoint, allowing respondents to express a genuinely neutral or indifferent

opinion between disagreement on one side and agreement on the other (Chyung et al.,

2017). Offering a midpoint supports respondents who may believe it is socially more

desirable to mark a neutral score than to mark *Don't know* or leave the item blank

(Chyung et al., 2017). The 11-point scale offers more options than five-, seven-, or nine-

point scales, allowing respondents greater expression of feelings (Chyung et al., 2017).

Procedures

After receiving Institutional Review Board approval, the researcher invited

employees and contractors who were members of the target organization's Scottsdale

Slack® channel to participate in the study (Appendix C). The invitation, which the

researcher sent via Slack®, described the project's reason, used engaging verbiage, and

included an emotional appeal (Phillips et al., 2013). The researcher invited full- and part-

time employees and contractors to participate (Phillips et al., 2013). Reminders are

effective for improving participation (Phillips et al., 2013), so a reminder was sent three

days later (Appendix C). Volunteers who chose to participate clicked on a link within the

invitation that took them to the online consent form (Appendix E). The consent form

described the purpose of the study, the criteria for participation, made participants aware

of the research team's data collection but assured confidentiality, outlined participant

responsibilities, described the monetary incentives, and provided information about

individual rights as a participant in a human subjects study, including contact information

for the Institutional Review Board (Phillips et al., 2013). The consent form also gave

advanced notice about forthcoming steps in the process (Phillips et al., 2013). The

consent form required each participant to enter their email address to agree to the terms. The email address provided the researcher with a common identifier between the consent form, pretest, app usage (if any), and the posttest. A notification of each completed online consent form was sent electronically to the researcher.

When using random assignment, it is understood that the groups are statistically similar, and differences can be attributed to the intervention or program (Meltzoff & Cooper, 2018). Randomization is the only known control for unknown biases, providing a way to distribute participants evenly and fairly between groups (Fink, 2003a). After participants completed consent forms, the researcher assigned each of them a sequential number, beginning with the number 01001. The researcher used these numbers in a random number generator to randomly assign participants to either a treatment group or a control group, meaning participants were assigned by chance to either group (Fink, 2003a).

The researcher used a random number generator to assign participants to each group. According to Alzhrani and Aljaedi (2015), random number generation is critical to security, and weak or predictable random number generators can lead to devastating effects. There are specific requirements for making a random number generator safe, and only random number generators that use all of these specific measures can ensure a safe "draw" of a number (Alzhrani & Aljaedi, 2015). The online random number generator Gigacalculator (https://www.gigacalculator.com) employs the measures of random number generation security; therefore, the researcher selected it for the present study. The researcher used Gigacalculator to generate enough random numbers for half of the participant pool (see example in Appendix K). The researcher put participants assigned

one of the random numbers generated from the online calculator into the treatment group. The remaining half of the participants were assigned to the control group.

The researcher sent an email to each treatment group participant with instructions to download the "Flourishing at Work" mobile app, commence the training program immediately, and practice daily for three weeks (Appendix G). The administrative portion of the mobile app allowed the researcher to see that all treatment group participants could access the program.

<div align="center">Data Collection</div>

This study involved human subjects; therefore, the approval of the Institutional Review Board (IRB) was required (Meltzoff & Cooper, 2018). Upon IRB and dissertation committee approval, study procedures and data collection commenced. According to Meltzoff and Cooper (2018), designers retrieve data directly from study participants in a direct sampling model. The present study used this model, and the researcher gathered data from randomly assigned participants. The first portion of this section provides an overview of the IRB process and describes a pilot study. The chapter continues with the action plan for data collection and the steps to obtain data from participants. The section also contains a discussion of confidentiality and the storage and disposition of data.

Institutional Review Board Approval

The researcher submitted an application to the University of Southern Mississippi IRB and received approval (Appendix M). The IRB-approved application included (a) recruitment documents used to invite participants to the study; (b) the informed consent document; (c) permission from the targeted organization to access the population; and (d)

copies of the questionnaires. The IRB ensures that participants are informed about their role in the study, that they are made aware of any risks, that their involvement will not be induced by pressure, that their identities will not be disclosed, and that informed consent documents are obtained (Meltzoff & Cooper, 2018). After the IRB granted approval, the data collection action plan began.

Pilot Study

Before commencing the study with the target population, the researcher conducted a pilot study with five individuals. According to Meltzoff and Cooper (2018), pilot studies are beneficial because the researcher can test instruments and programs before deployment. Pilot study participants were not part of the target population. Participants for the pilot program were part of the researcher's professional network. The researcher selected them due to their background and experience in well-being, editorial work, or mobile app testing. The researcher contacted each participant via text message to request participation in the pilot study.

After receiving confirmation of participation (via text message), participants in the pilot study completed the pretest instrument to confirm the approximate time needed to complete the survey. Using the feedback from the pilot group, the researcher determined that the pretest took less than 5 minutes to complete. Participants tested the mobile app using various mobile devices with different operating systems as they worked to identify any problems with receiving, reviewing, or completing the materials. There were no problems with the app or the pretest instrument.

Quantitative Data Collection

In this experimental quantitative study, treatment and control group participants interfaced with a digital, cloud-based application (SurveyPlanet®) to complete pretests and posttests. The researcher exported data from SurveyPlanet® into Microsoft Excel®. Each treatment group participant received an individual email, including a link to the mobile app, which was available in the Apple® and Google Play® stores. The treatment group participants used the mobile app to practice imagery throughout the study. Access to the program was unlimited for each treatment group participant. Because the literature promotes a daily practice for the most benefit, treatment group participants were sent an encouraging message daily via email as part of the intervention (Appendix N). Mobile app data usage was retrieved from Apple® and Google Play® via the Adalo® cloud-based service and exported into Microsoft Excel®. App usage data displayed the number of minutes practiced per session, which was date-time stamped, and partial minutes were rounded up to the next full minute.

Protocols for Data Collection

Data collection began with the researcher sending a link to each participant for completing the online pretest protocol, including a deadline for completion (Appendix G). The closing message of the pretest for treatment group participants included instructions for downloading the mobile app and practicing imagery daily (Appendix F); this information was sent to them via email to reinforce the process (Appendix G). The administrative function of the mobile app allowed the researcher to see that each participant could access the program. App usage data was gathered from the Apple® and Google Play® stores and accessed only by the research team using Adalo®'s cloud-based

platform. The researcher exported data from Adalo® into Microsoft Excel®, and the researcher totaled all of the minutes logged in the app.

The study concluded three weeks after it commenced. Immediately following the study's conclusion, the researcher sent a link to the post-test protocol to the treatment group (Appendix O) and control group members (Appendix P) via email. In the email, the researcher reminded participants that all responses were de-identified. The researcher also explained that they store data in password-protected documents on the researcher's laptop. The following day, the researcher sent a deadline reminder to the treatment group (Appendix O) and control group members (Appendix P) who had not yet completed the posttest.

The post-test questionnaire contained the 12-question WBA (Appendix H). The instrument took less than 5 minutes to complete and was curated online through the SurveyPlanet® cloud-based service. Only the research team had visibility to the data.

The U.S. Department of Health and Human Services sets forth regulations for protecting human subjects in research in policy 45CFR 46 (hhs.gov/ohrp/regulations). The records for the present study will be retained for at least 3 years after the publication of the research, in accordance with this policy. The researcher may use de-identified information for future work beyond the 3 years.

Procedures for Non-Responses

As part of the invitation, consent forms, pretest instructions, and posttest instructions, the researcher informed participants of their responsibilities to complete the post-test survey. One participant did not complete the pretest, making them ineligible for the program incentives. Table 3 outlines the data collection plan.

Table 3 *Data Collection Plan*

Week Number	Task
Week 0	Receive IRB approval
Week 1 Day 1	Sent an invitation to participate via Slack, which directed workers to the consent form to volunteer
Week 1 Day 4	Sent reminder of invitation to participate via Slack
Week 1 Day 1 through Week 2 Day 1	Received online signed consent forms
Week 2 Day 1	Randomly assigned groups, then sent email to treatment group participants with instructions
Week 2 Day 2 through Week 5 Day 2	Treatment group participants received daily email with encouragement to practice
Week 5 Day 2	Emailed all participants to conclude the study
Week 5 Day 3	Sent link to the posttest to all participants via email
Week 5 Day 4	Sent reminder emails to participants who had not completed the posttest. Final deadline for posttest completion

Data Analysis

The data analysis section describes the statistical methodology used for this study.

Essentially, data analysis is making sense of the data (Meltzoff & Cooper, 2018). The

researcher used descriptive and inferential statistics to investigate the research objectives.

Descriptive statistics are an arrangement of data that shows how frequently the value of

each variable occurs (Fink, 2003b). The data set for this study consisted of pretest and

posttest self-assessment measurements, which the researcher exported from

SurveyPlanet® into Microsoft Excel®. Additional data included app usage data from the

Apple® and Google Play® stores, accessed through the Adalo® platform, which the

researcher exported to Microsoft Excel®. SPSS® analytical software helped the

researcher organize data and automate the calculation process, though it did not analyze

data for the researcher (Field, 2018). The researcher imported data from Microsoft

Excel® into SPSS® to run statistical tests. See Table 4 for the data analysis plan. The

plan references the Code Book in Appendix Q.

Table 4 *Data Analysis Plan*

RO	Item(s)	Scale	Statistical Test	Notes
RO1	Gender	Nominal	Frequency Distribution	
	Age	Ordinal	Frequency Distribution	
	Ethnicity	Nominal	Frequency Distribution	
	Employment Status	Nominal	Frequency Distribution	
	Vocational Level	Ordinal	Frequency Distribution	
	Education Level	Ordinal	Frequency Distribution	
RO2	Practice Time (minutes)	Ratio	Pearson's *r*	Total mins
	Flourishing Change	Ratio		
RO3	Vocational Level (IV)	Ordinal	*t*-Test	
	Flourishing Change (DV)	Ratio		
RO4	Group Assignment (IV)	Nominal	*t*-Test	
	Flourishing Measure (DV)	Ratio		
RO5	Practice Time (IV)	Nominal	Two-way ANOVA	Yes/No
	Vocational Level (IV)	Ordinal		
	Flourishing Change (DV)	Ratio		

Note. DV = Dependent Variable; IV = Independent Variable.

Methodology Summary

Through this study, the researcher sought to determine the relationship between

technology-assisted imagery and flourishing measures among remote-working

professionals who no longer work in a traditional office setting. This chapter included an

overview of the research design, population, census, instruments, data collection

procedures, IRB approvals, and the data analysis plan. This experimental study outlined

the random assignment design and process. The study described the participants' demographics, assessed the relationship between time spent practicing imagery and flourishing measurements, and explored relationships between flourishing measures and vocational levels. After receiving IRB approval, the researcher used the WBA instrument to collect flourishing measurements and questions created by the researcher to gather demographic information for each participant. The researcher deployed the program via a mobile app. IBM®'s software enabled the researcher to run statistical tests, analyze the data, examine the assumptions, and meet the study's objectives. The next chapter, Chapter IV, describes the results of the experiment.

CHAPTER IV – RESULTS OF THE STUDY

The purpose of this study was to determine the relationship between technology-assisted imagery and flourishing measures among remote-working professionals who no longer work in a traditional office setting. Chapter IV presents the results of this quantitative study, including the details of the results by individual research objective. The statistical analysis conducted for each objective is described throughout the following sections, including the criteria used to meet the assumptions of each statistical test. Figures and tables provide a visual representation of the results, beginning with a description of the demographic characteristics of the participants.

Research Objective 1

Describe the demographic characteristics of study participants, including age, gender, ethnicity, vocational level, employment status, and education level.

Participants in this study worked for a technology firm headquartered in Scottsdale, Arizona, USA. They spent at least half their weekly work hours at an off-site location (not working from an onsite business facility) and were members of the Scottsdale Slack® channel. The researcher invited all 984 members of the Scottsdale Slack® channel to participate, and 32 consented to volunteer (a 3.25% response rate). Of the 32 individuals who signed the consent form, 16 were sent the control group pretest, and 16 were sent the treatment group pretest; however, one of the treatment group participants did not complete the pretest. In total, 31 people completed the pretest, which lowered the power level to 0.1 (compared to a goal of 0.8). The demographic data for this study was gathered in the online pretest, which collected age, gender, ethnicity,

vocational level, employment status, and education level data. Table 5 summarizes the

data set.

Table 5 *Participant Demographics*

Baseline Characteristic	Treatment Group	Control Group	Full Sample	
	n	*n*	*n*	%
Age				
20-29	3	6	9	29.0
30-39	6	6	12	38.7
40-49	4	3	7	22.6
50-59	2	1	3	9.7
60-69	0	0	0	
70+	0	0	0	
Gender				
Male	3	6	9	29.0
Female	12	10	22	71.0
Non-binary	0	0	0	
Ethnicity				
White or Caucasian	9	12	21	67.8
Hispanic or Latino	2	2	4	12.9
Black or African American	1	0	1	3.2
Native American or American Indian	0	1	1	3.2
Asian or Pacific Islander	3	1	4	12.9
Other	0	0	0	
Vocational Level				
Non-Managers	9	11	20	64.5
Managers	6	5	11	35.5
Employment Status				
Full-time Employees	15	16	31	100
Part-time Employees	0	0	0	
Full-time Contractors	0	0	0	
Part-time Contractors	0	0	0	
Education Level				
High school diploma	0	0	0	
Some college or associate degree	0	0	0	
Bachelor's degree	7	11	18	58.1
Master's degree	7	5	12	38.7
Doctorate degree	1	0	1	3.2

Of the 31 participants who completed the pretest, about two-thirds were women ($n = 22$). Participant demographics revealed that participants occupied multiple age groups, including 20-29 ($n = 9$), 30-39 ($n = 12$), 40-49 ($n = 7$), and 50-59 ($n = 3$). In terms of ethnicity, all groups were represented. The largest group was White or Caucasian ($n = 21$). Smaller levels of representation came from participants who were Hispanic or Latino ($n = 4$) and Asian or Pacific Islander ($n = 4$). The smallest groups were Black or African American ($n = 1$), and Native American or American Indian ($n = 1$).

The participants included 64.5% non-managers ($n = 20$) and 35.5% managers ($n = 11$). All participants were full-time employees of the firm. Every participant had obtained at least a bachelor's degree (58.1%), while some had advanced degrees such as a master's or doctorate (41.9%).

Research Objective 2

Determine the relationship between imagery practice time and the change in flourishing for those who practiced imagery.

Each treatment group participant's imagery practice time was logged by the mobile app. The researcher exported the data to Microsoft Excel to prepare it for ingestion into SPSS® (version 28). Within SPSS® the practice time data was correlated to the change in flourishing measurement. Specifically, Pearson's *r* correlation test was used to determine the relationship between two scale variables measured at an interval level (Trochim, n.d.). The test measured the scale variables of imagery practice time and the change in flourishing.

The Pearson correlation determines the strength and direction of a relationship between two variables (Laerd, n.d.). The test produces a coefficient—denoted with an *r*

symbol—which can range from a value of -1 to a value of +1 (Trochim, n.d.). A perfectly

negative relationship (a coefficient of -1) indicates that as one variable increases, the

other variable simultaneously decreases—the variables move in opposite directions

(Laerd, n.d.). A perfectly positive relationship (a coefficient of +1) indicates that the

variables move in the same linear direction (Laerd, n.d.). A zero value indicates no

relationship between two variables (Laerd, n.d.). Table 6 shows a positive Pearson's

correlation ($r = .178$).

Table 6 *Pearson's r Correlation Between Imagery Practice Time and Flourishing*

Variable	Parameter	Change in Flourishing
Imagery Practice Time	Pearson Correlation	.178
	p-value (2-tailed)	.526
	N	15

Among those who used the app at least once during the study period, a positive

relationship between imagery practice time and flourishing existed. That means that as

imagery practice increased, the change in flourishing increased. Guilford's Interpretation

Guideline provides a method for describing the magnitude of significant correlations

(Van Aswegen & Engelbrecht, 2009). The guideline uses common vocabulary to describe

the relationship between the variables. The correlation coefficient in Table 6 is .178;

therefore, according to Guilford's Interpretation Guideline, there was a slight, positive

correlation between practice time and the change in flourishing levels among those who

practiced imagery.

Appropriate use of Pearson's *r* correlation requires the data to pass five test

assumptions (Laerd, n.d.). First, the data must be interval or ratio data, measured on a

continuous scale (Laerd, n.d). Second, each random sample (participant) must have one value for each variable, and the variables must be independent of one another (Laerd, n.d.). In the present study, each participant had one ratio variable for the practice time score and one ratio variable for the change in flourishing measure, meeting the first two assumptions. Third, a linear relationship must exist between the two variables (Laerd, n.d.). This linear correlation is ordinarily depicted using a scatterplot (Trochim, n.d.). The scatterplot in Figure 4 provides a visual of the relationship between imagery practice time and the change in flourishing.

Figure 4. Imagery Practice Time and Flourishing Positive Linear Relationship
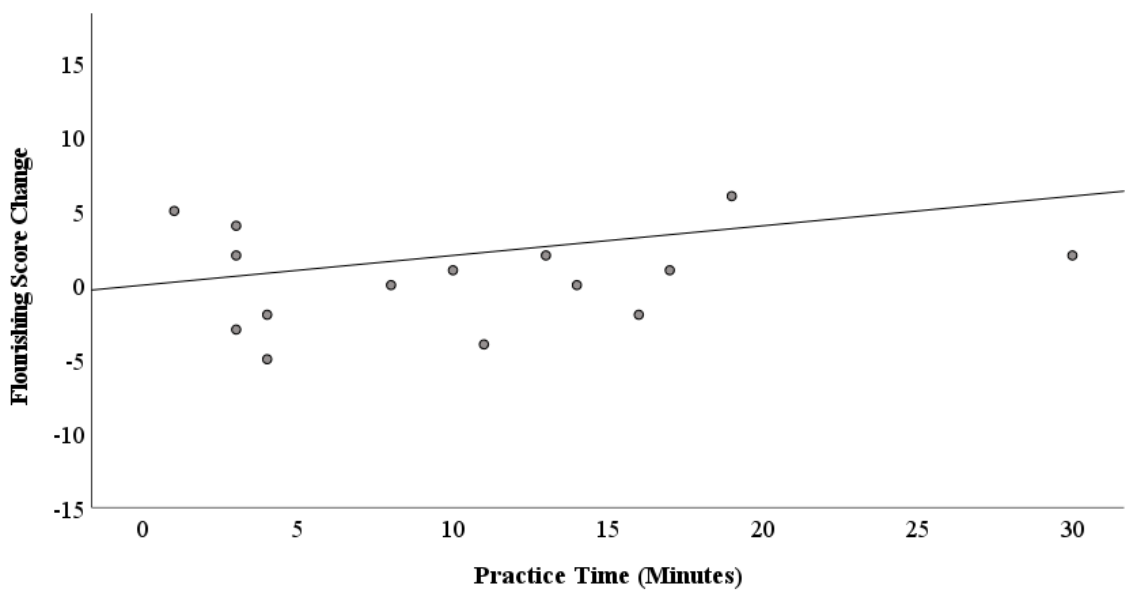
The fourth assumption is that no significant outliers exist (Laerd, n.d.). According to Trochim (n.d.), outliers are data points that disperse from most of the other data points, and they can exaggerate the Pearson's r coefficient. Outliers may cause the coefficient to have a value that does not properly represent the full data set (Laerd, n.d.). Two participants in the study had exponentially higher increases in flourishing measures that

were far beyond the rest of the treatment group participants—they were originally

outliers. However, according to Laerd (n.d.), it is appropriate to adjust outliers to less

extreme values (e.g., the next largest value), as long as rank is maintained within the

group. The researcher applied Laerd's approach to these two participants, and Figure 5

demonstrates that there were no outliers.

Figure 5. Imagery Practice Time and Flourishing Do Not Have Outliers
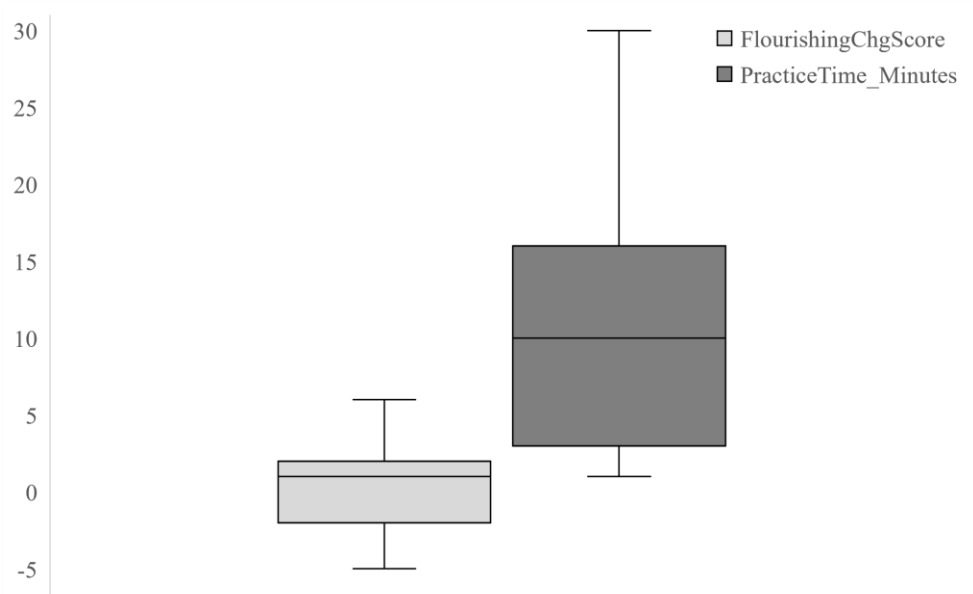
The fifth and final assumption tests for normality to assess the significance of

Pearson's *r* correlation coefficient (Laerd, n.d.). SPSS® software developed by IBM®

aids researchers in conducting tests for normality (Field, 2018). The fifth assumption of

normality is met by running a Shapiro-Wilk test (Laerd, n.d.). If the assumption of

normality is violated, the *p*-value is less than .05 (Field, 2018; Laerd, n.d.). Conversely, if

the assumption of normality is not violated, the *p*-value is greater than .05, and the data is

normally distributed (Laerd, n.d.). Both variables were normally distributed, as assessed

by Shapiro-Wilk's test (*p* > .05). Additionally, the central limit theorem assumes a normal

distribution when the number of participants is at least 30 (Field, 2018); therefore, this study also met the normality assumption with 31 participants. Table 7 provides the results of the test of normality.

Table 7 *Shapiro-Wilk Test for Normality*

	Shapiro-Wilk		
Variable	Statistic	*df*	*p*
Flourishing Score Change	.972	15	.880
Practice Time (minutes)	.905	15	.113

A Pearson's correlation was run to assess the relationship between imagery practice time and the change in flourishing in technology professionals working in a non-traditional work setting. Thirty-one participants were recruited. Preliminary analyses showed the relationship to be linear with both variables normally distributed, as assessed by Shapiro-Wilk's test ($p > .05$), and there were no outliers. There was no statistically significant correlation between imagery practice time and the change in flourishing levels, $r(13) = .178$, $p = .526$, with imagery practice time explaining 3% of the change in flourishing (see Table 8).

Table 8 *Pearson Correlation*

Variable	Flourishing Score Change
Practice Time (minutes)	.178
p-value (2-tailed)	.526
n	15

Research Objective 3

Compare the pretest-posttest change in flourishing between non-managers and managers who practiced imagery.

A debate has persisted about imagery's benefits by skill level and vocational level, with some studies finding that individuals with more experience, such as managers or advanced athletes, gain more benefit than non-managers or novices (Anthony et al. 1993; Hardy & Callow, 1999; Jeannerod, 2001; Montuori et al., 2018). According to Trochim (n.d.), the *t*-test analysis is appropriate for comparing the means of two groups in a randomized experimental design (such as the present study). The researcher used a *t*-test to accomplish the third research objective, comparing non-managers to managers.

There are six basic assumptions required for *t*-tests, and the first three relate to the study design (Laerd, n.d.). The first assumes that there is one dependent variable measured at the continuous level (Laerd, n.d.). In the present study, the dependent variable was the flourishing score, measured continuously with scores from zero to 120, thereby meeting the first criterion. The second assumption is that one independent variable consists of two different groups (Laerd, n.d.). The present study met the second criterion because the independent variable (vocational level) had two different groups (non-managers and managers). Third, there should be no relationship between the observations of each group, and participants should not be assigned to multiple groups (Laerd, n.d.). In the present study, participants were assigned to either a treatment or control group, and no observations were made between each group; therefore, the third criterion was met.

Additional assumptions are related to the data to provide valid results. The fourth criterion is that no significant outliers should exist (Laerd, n.d.). The researcher investigated whether the flourishing measure had outliers for each vocational group (non-managers and managers). Boxplots quickly demonstrate the presence or absence of outliers. There were no outliers in the data, as assessed by inspection of a boxplot (see Figure 6).

Figure 6. Boxplot Testing for Outliers
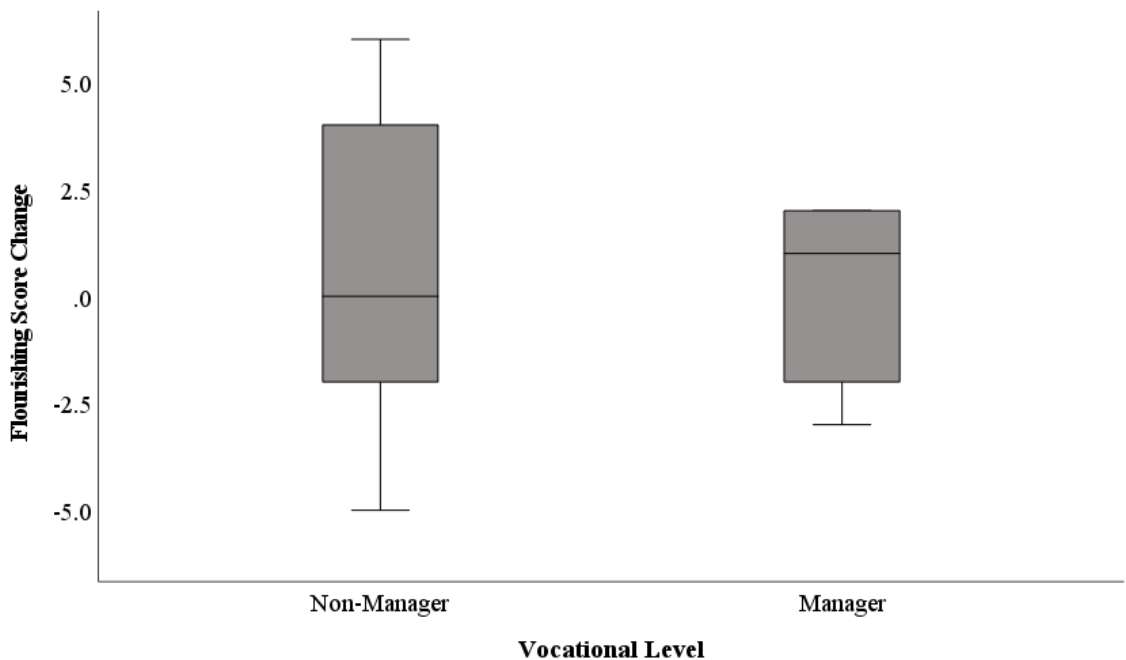
The fifth assumption is that the dependent variable is normally distributed for each group of independent variables (Laerd, n.d.). *T*-test results should show little variability of scores within each group (Trochim, n.d.). The Shapiro-Wilk test for normality was run using SPSS® software developed by IBM®. The *p*-value is greater than .05. When the *p*-value is greater than .05, the data is normally distributed (Field,

2018; Laerd, n.d.). The change in flourishing score was normally distributed, as assessed by Shapiro-Wilk's test (p > .05). Table 9 provides the results of the test of normality.

Table 9 *Shapiro-Wilk Test for Normality*

		Shapiro-Wilk		
Variable	Vocational Level	Statistic	*df*	*p*
Flourishing Score Change	Non-managers	.910	8	.704
	Managers	.824	5	.096

The sixth and final assumption demands that homogeneity of variances should exist (Laerd, n.d.). SPSS® software tests this assumption using Levene's test of equality of variances (Field, 2018). Levene's test of equality must be non-statistically significant to pass the assumption of homogeneity of variances (Field, 2018). In other words, to be homogeneous, there cannot be a statistically significant difference between the groups. A *p*-value greater than .05 means the groups are not statistically different (Field, 2018; Laerd, n.d.). Results of Levene's test reveal there is homogeneity of variance between the non-managers and managers with *p* =.125, as seen in Table 10.

Table 10 *Levene's Test of Equality of Variances*

Parameter	Levene Statistic	*df1*	*df2*	*p*
Based on Mean	2.682	8	5	.125

The *t*-test examined two samples with different vocational levels to explore whether the means were statistically different. There were nine non-managers and six managers. An independent-samples t-test was run to determine if there were differences in the change in flourishing scores for professionals working in non-traditional work

settings between non-managers and managers. There were no outliers in the data, as assessed by inspection of a boxplot. The flourishing change scores for each vocational level were normally distributed, as assessed by Shapiro-Wilk's test ($p > .05$), and there was homogeneity of variances, as assessed by Levene's test for equality of variances ($p = .125$). The intervention was more effective in improving flourishing levels for non-managers ($M = .67$, $SD = 3.905$) than managers ($M = .17$, $SD = 2.137$), but not a statistically significant difference, $M = 0.50$, $t(13) = .284$, $p = .390$, 95% CI [-3.30, 4.30].

<center>Research Objective 4</center>

Compare the change in flourishing between treatment group participants who practiced imagery and control group participants who did not practice imagery.

Research Objective 4 followed an identical process to Research Objective 3. The *t*-test analysis is appropriate for comparing the means of two groups in a randomized experimental design, so it was used to compare the pretest-posttest change in flourishing levels between treatment and control group participants. This *t*-test examined two samples with different entities to explore whether the means were statistically different.

The same basic assumptions for the third research objective apply to the fourth research objective. The first three assumptions relate to the study design (Laerd, n.d.). The first assumes that there is one dependent variable measured at the continuous level (Laerd, n.d.). In the present study, the dependent variable was the flourishing score, measured continuously with scores from zero to 120, thereby meeting the first criterion. The second assumption is that one independent variable consists of two different groups (Laerd, n.d.). The present study met the second criterion because the independent variable had two different groups (treatment group and control group). Third, there should be no

<center>96</center>

relationship between the observations of each group, and participants should not be assigned to multiple groups (Laerd, n.d.). In the present study, participants were assigned to either a treatment or control group and no observations were made between each group; therefore, the third criterion was met.

Additional assumptions related to the data to provide valid results. The fourth criterion is that no significant outliers should exist (Laerd, n.d.). Outliers are critical in smaller sample sizes ($n < 30$) because they have a greater effect on the results (Field, 2018; Laerd, n.d.). The researcher investigated both the treatment group and control group to determine whether the flourishing measure had outliers and determined there were no outliers. Boxplots again demonstrate the absence of outliers (see Figure 7).

Figure 7. Boxplot Testing for Outliers
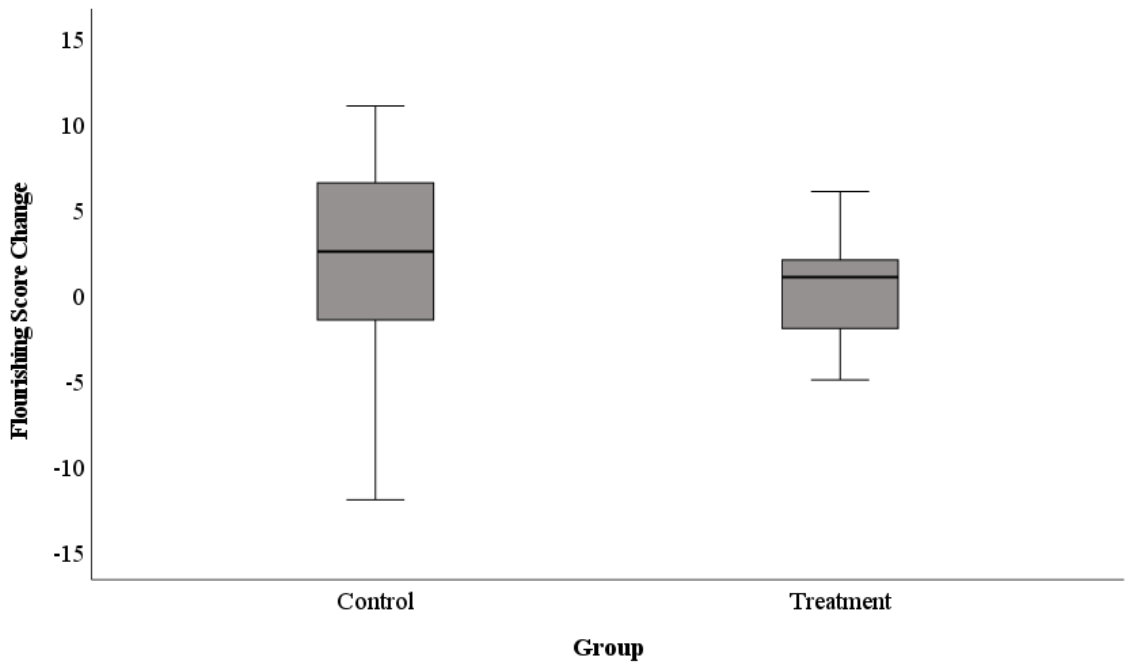
The fifth assumption is that the dependent variable is normally distributed for each group of independent variables (Laerd, n.d.). *T*-test results should have little

variability of scores within each group (Trochim, n.d.). The Shapiro-Wilk test for normality was run using SPSS® software developed by IBM®. When the *p*-value is greater than .05, the data is normally distributed (Laerd, n.d.). The *p*-value is greater than .05; therefore, the assumption of normality is not violated (Field, 2018; Laerd, n.d.). The changes in flourishing scores for each group were normally distributed, as assessed by Shapiro-Wilk's test (*p* >.05). Table 11 provides the results of the test of normality.

Table 11 *Shapiro-Wilk Test for Normality*

| Variable | Group | Shapiro-Wilk | | |
		Statistic	*df*	*p*
Flourishing Score Change	Control	.938	16	.328
	Treatment	.972	15	.880

The sixth and final assumption demands that homogeneity of variances should exist (Laerd, n.d.). SPSS® software tests this assumption using Levene's test of equality of variances (Field, 2018). Levene's test of equality must be non-statistically significant to pass the assumption of homogeneity of variances (Field, 2018). In other words, to be homogeneous, there cannot be a statistically significant difference between the groups. A *p*-value greater than .05 means the groups are not statistically different (Field, 2018; Laerd, n.d.). Results of Levene's test reveal there is no homogeneity of variance between the treatment and control groups, as seen in Table 12.

Table 12 *Levene's Test of Equality of Variances*

Parameter	Levene Statistic	*df1*	*df2*	*p*
Based on Mean	8.012	15	14	.008

There were 15 treatment group and 16 control group participants. A Welch t-test was run to determine if there were differences in the change in flourishing between the treatment group and control group participants due to the assumption of homogeneity of variances being violated, as assessed by Levene's test for equality of variances ($p = .008$). There were no outliers in the data, as assessed by inspection of a boxplot, and flourishing measures for each group were normally distributed, as assessed by Shapiro-Wilk's test ($p > .05$). The intervention was more effective in improving flourishing levels for the control group ($M = 1.69$, $SD = 6.829$) than the treatment group ($M = .47$, $SD = 3.226$), not a statistically significant difference, $t(29) = .643$, $p = .527$, 95% CI [-2.722, 5.164].

Research Objective 5

Determine the combined influence of imagery practice and vocational level on the change in flourishing.

Researchers who are interested in the effect that two different independent variables have on a continuous variable use a two-way ANOVA to examine if an interaction exists (Laerd, n.d.). In the present study, the researcher used a two-way ANOVA to examine the combined effect that imagery practice and vocational level had on the change in flourishing. Six assumptions must be considered when conducting this statistical test.

The first of six assumptions of a two-way ANOVA is that there is a dependent variable with a continuous measure (Laerd, n.d.). In the present study, the dependent variable was the change in flourishing, and it had a continuous measure. Second, an ANOVA assumes there are two factors with two nominal or ordinal categories (Laerd, n.d.). In the present study, the first factor was practice time, and the two categories were

yes and no—the individual practiced imagery or they did not. The second factor was

vocational level, and the two categories were non-manager and manager.

The third assumption of a two-way ANOVA is that there are independent

observations, meaning, for example, that none of the managers can also be non-managers.

The fourth assumption is that there are no significant outliers (Laerd, n.d.). There were no

outliers, as assessed by inspection of boxplots (see Figure 8).

Figure 8. Boxplot Testing for Outliers

Vocational Level: Non-Manager, PracticeTime: No

Residual for Flourishing Score Change

Vocational Level: Non-Manager, PracticeTime: Yes

Residual for Flourishing Score Change
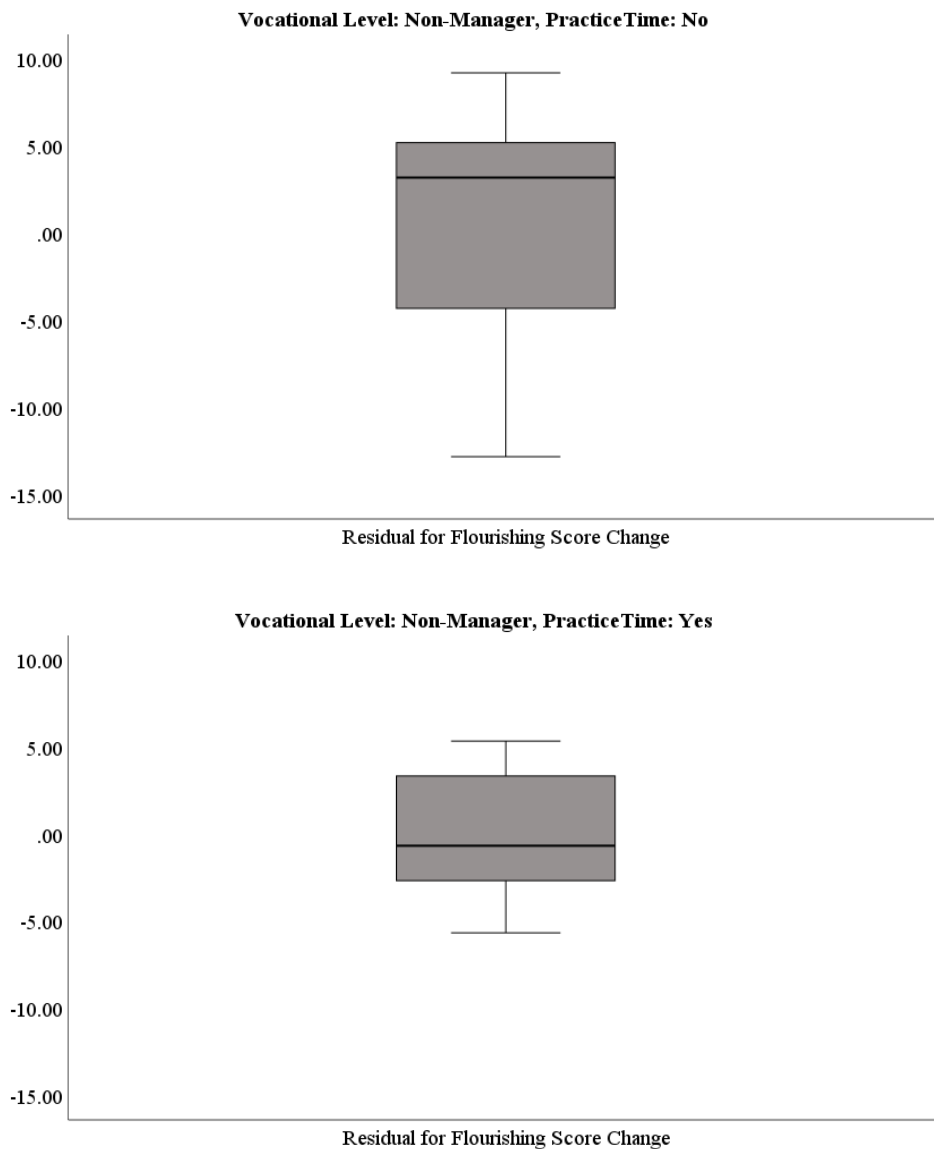
Figure 8. Boxplot Testing for Outliers (continued)

Vocational Level: Manager, PracticeTime: No

Vocational Level: Manager, PracticeTime: Yes
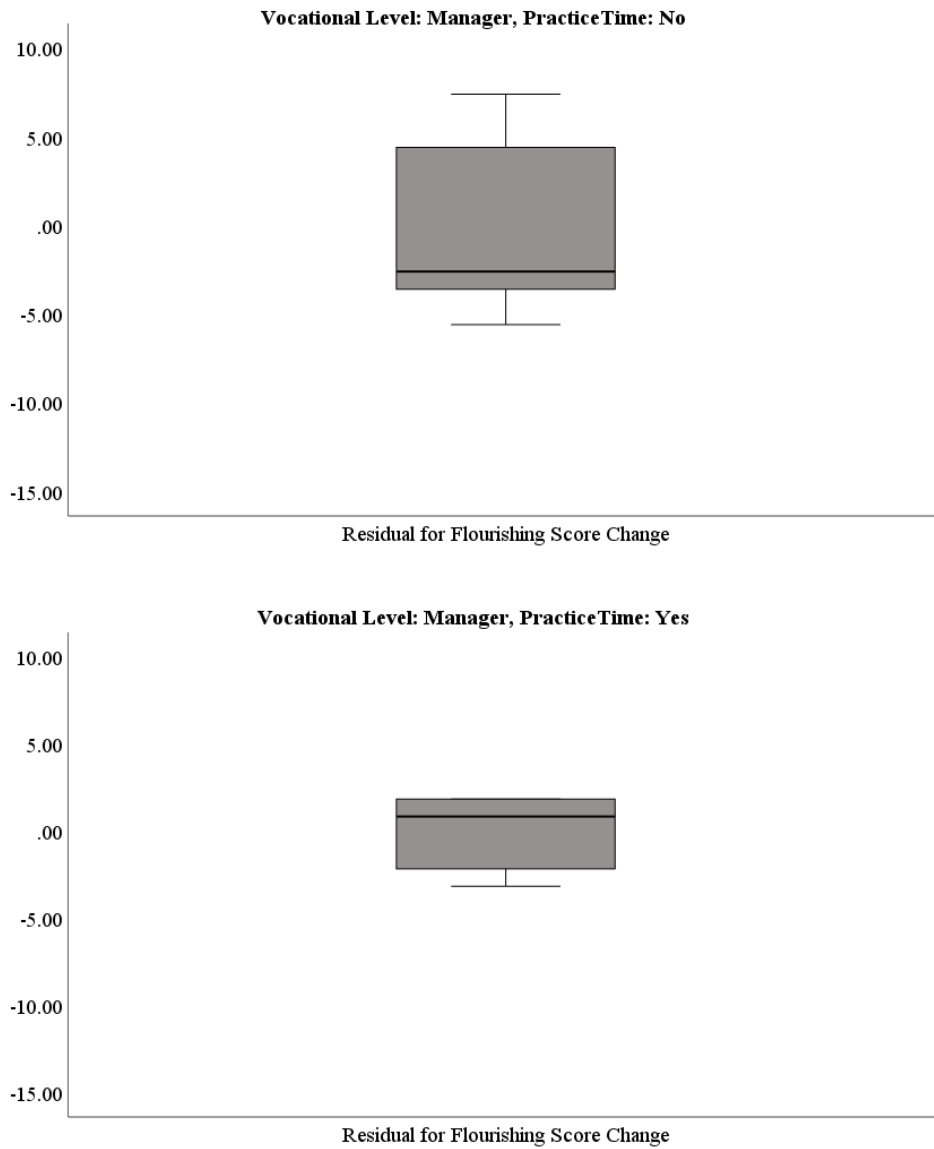
Fifth, a two-way ANOVA assumes that the data is normally distributed, and the researcher conducted a Shapiro-Wilk test of normality to determine whether the data met or violated this fifth assumption (Laerd, n.d.). Data were normally distributed, as assessed by Shapiro-Wilk's test ($p > .05$), as depicted in Table 13.

Table 13 *Shapiro-Wilk Test of Normality*

Vocational Level	PracticeTime	Parameter	Statistic	*df*	*p*
Non-Manager	No	Residual for FlourishingScore_Change	.897	11	.168
	Yes	Residual for FlourishingScore_Change	.951	9	.704
Manager	No	Residual for FlourishingScore_Change	.893	5	.370
	Yes	Residual for FlourishingScore_Change	.824	6	.096

Finally, the sixth assumption is that the variances between the levels (yes or no

practice time and non-managers versus managers) should be equal (Laerd, n.d.). The

check for the sixth assumption used Levene's test for equal variances, which was run as

part of the two-way ANOVA test (Laerd, n.d.). There was homogeneity of variances, as

assessed by Levene's test for equality of variances, $p = .150$ (see Table 14).

Table 14 *Change in Flourishing Score in Levene's Test of Equality of Variances*

Parameter	Levene Statistic [a,b]	*df1*	*df2*	*p*
Based on Median	1.919	3	27	.150

Note. Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

[a] Dependent variable: FlourishingScore_Change

[b] Design: Intercept + VocationalLevel + PracticeTime + VocationalLevel x PracticeTime

There are two steps to interpret the results of a two-way ANOVA, including

looking for interaction effects between the independent variables and determining

whether the interaction effect is statistically significant (Laerd, n.d.). The researcher

looked at the interactions between vocational level and imagery practice. An initial look

at the plots produced by SPSS® when running an ANOVA test helps determine whether

an interaction exists (Laerd, n.d). Parallel plots that do not intersect indicate that the

interactions are ordinal, whereas plots that have intersecting data points indicate a

disordinal interaction (Laerd, n.d.). In the present study, the researcher examined the

interactions between vocational level and imagery practice. The data points intersected,

indicating the interactions were disordinal, meaning the effect that vocational level has on

the change in flourishing depends on the practice time (see Figure 9).

Figure 9. Disordinal Interactions Between Practice Time and Vocational Level
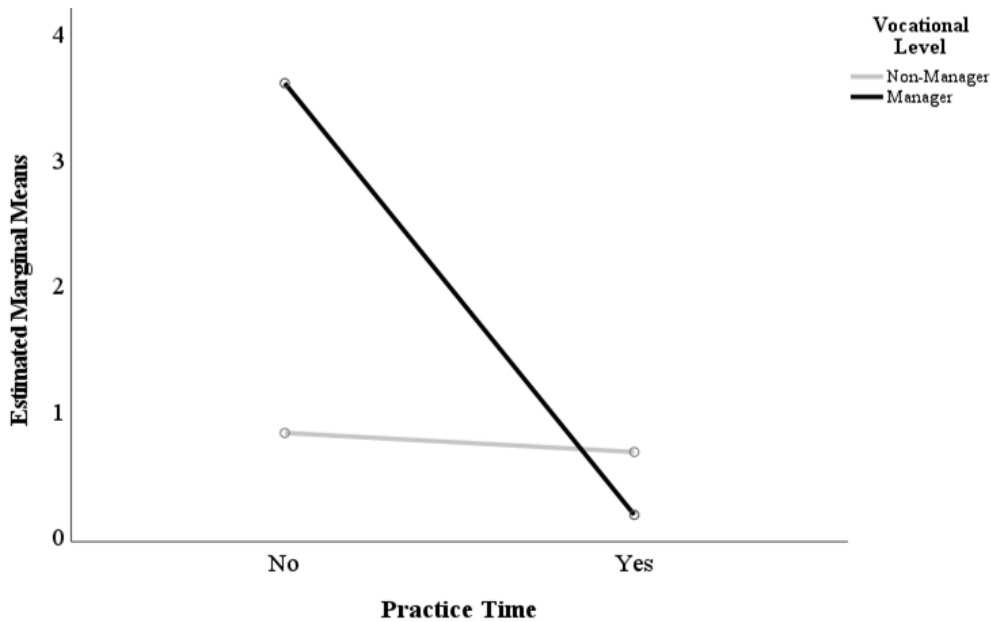
Additionally, the researcher looked at the "Test of Between-Subject Effects"

portion of the output from SPSS® to identify significant interactions with $p < .05$ being

significant (Laerd, n.d.).The researcher examined the statistical significance of the

interaction. There was not a statistically significant interaction between imagery practice

time and vocational level for the change in flourishing score, $F(1, 27) = .625$, $p = .436$,

partial $\eta^2 = .023$ (see Table 15).

Table 15 *Two-way ANOVA Test of Between-Subject Factors*

Source	df	F	p	Partial Eta Squared
Vocational Level	1	.302	.587	.011
Practice Time	1	.746	.395	.027
Vocational Level x Practice Time	1	.625	.436	.023
Error	27			
Total	31			
Corrected Total	30			

Because the interaction was not significant, the researcher examined the main effect, conducting Type III sums of squares analysis (Laerd, n.d.). The researcher used the unweighted marginal means due to the different number of participants in each group, which is an unbalanced design (Laerd, n.d.). As shown in Table 15, there was no statistically significant main effect on the change in flourishing of vocational level, $F(1, 27) = .302$, $p = .587$, partial $\eta^2 = .011$. Also, there was no statistically significant main effect on the change in flourishing based on practice time, $F(1, 27) = .746$, $p = .395$, partial $\eta^2 = .027$.

Using pairwise comparisons, the researcher examined the differences in mean change in flourishing between vocational levels. Managers were associated with a mean change in flourishing scores 1.14, 95% CI [-3.12, 5.40] higher than non-managers, not a statistically significant difference, $p = .587$. The differences are shown in Table 16.

Table 16 *Pairwise Comparisons for Vocational Level and Flourishing Score Change*

(I) Vocational Level	(J) Vocational Level	Mean Difference (I-J)	Std. Error	p^a	95% CI for Difference [a]	
					Lower Bound	Upper Bound
Non-Manager	Manager	-1.141	2.075	.587	-5.398	3.117
Manager	Non-Manager	1.141	2.075	.587	-3.117	5.398

Note. Based on estimated marginal means.

[a] Adjustment for multiple comparisons: Bonferroni

Again, using pairwise comparisons, the researcher examined the differences in mean change in flourishing between participants with and without imagery practice time. Participants who did not practice imagery were associated with a mean change in flourishing scores 1.79, 95% CI [-2.47, 6.05] higher than those who practiced, not a statistically significant difference, $p = .395$. The differences are shown in Table 17.

Table 17 *Pairwise Comparisons for Practice Time and Flourishing Score Change*

(I) Practice Time	(J) Practice Time	Mean Difference (I-J)	Std. Error	p [a]	95% CI for Difference [a]	
					Lower Bound	Upper Bound
No	Yes	1.792	2.075	.395	-2.465	6.050
Yes	No	-1.792	2.075	.395	-6.050	2.465

Note. Based on estimated marginal means.

[a] Adjustment for multiple comparisons: Bonferroni

According to Laerd (n.d.), researchers often choose to report descriptive statistics. It is important to understand, however, that descriptive statistics are weighted marginal means. Because the present study does not have a balanced design (there were a different number of participants in each group), unweighted marginal means are necessary when

interpreting the main effects (they were demonstrated in Tables 16 and 17). Table 18

summarizes the descriptive statistics.

Table 18 *Descriptive Statistics with the Flourishing Change as the Dependent Variable*

Vocational Level	PracticeTime	M	SD	n
Non-Manager	No	.82	7.400	11
	Yes	.67	3.905	9
	Total	.75	5.937	20
Manager	No	3.60	5.595	5
	Yes	.17	2.137	6
	Total	1.73	4.245	11
Total	No	1.69	6.829	16
	Yes	.47	3.226	15
	Total	1.10	5.344	31

Finally, a clustered bar chart is effective for presenting the results of a two-way

ANOVA (Laerd, n.d.). Clustered bar charts bring together all variables and results of the

two-way ANOVA analysis (Laerd, n.d.). Figure 10 shows the clustered bar chart for the

present study with 95% confidence intervals.

Figure 10. Two-Way ANOVA Clustered Bar Chart

Error Bars: 95% CI
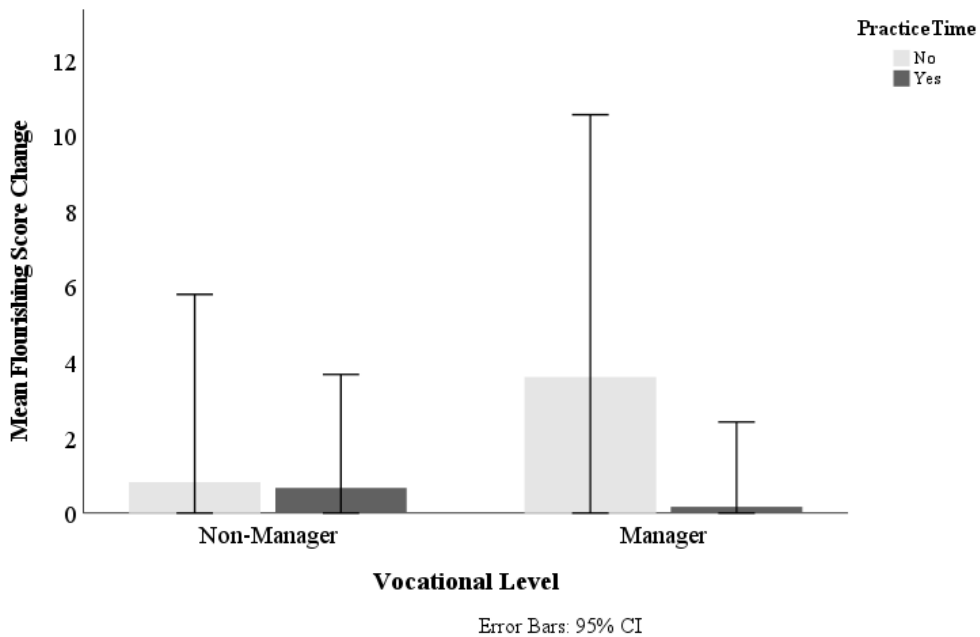
A two-way ANOVA was conducted to examine the effects of vocational level and practice time on the change in flourishing scores. Residual analysis was performed to test for the assumptions of the two-way ANOVA. Outliers were assessed by inspection of a boxplot, normality was assessed using Shapiro-Wilk's normality test for each cell of the design, and homogeneity of variances was assessed by Levene's test. There were no outliers, residuals were normally distributed ($p > .05$), and there was homogeneity of variances ($p = .150$).

The interaction effect between vocational level and practice time on the change in flourishing scores was not statistically significant, $F(1, 27) = .625$, $p = .436$, partial $\eta^2 = .023$. Therefore, an analysis of the main effect for vocational level was performed, which indicated that the main effect was not statistically significant, $F(1, 27) = .302$, $p = .587$,

partial η^2 = .011. All pairwise comparisons were run and were reported 95% confidence intervals and *p*-values were Bonferroni-adjusted. The unweighted marginal means of the change in flourishing scores for non-managers and managers was .74 ± 1.237 and 1.88 ± 1.666, respectively.

Managers were associated with a mean change in flourishing score 1.14 (95% CI, -3.12 to 5.40) points higher than non-managers, not a statistically significant difference, *p* = .587. Participants with no imagery practice time were associated with a mean change in flourishing score 1.79 (95% CI, -2.47 to 6.05) higher than participants with practice time, *p* = .395.

Summary

The statistical tests described in this chapter were used to analyze the research objectives and determine the relationship between technology-assisted imagery and the change flourishing among remote-working professionals who no longer work in a traditional office setting. The researcher invited 984 members of the Scottsdale Slack® channel to participate. Originally, 32 individuals consented to participate. The researcher used random assignment, placing half of the participants into the treatment group and the other half into the control group. One person withdrew, and 31 workers completed the study.

For RO1, a frequency distribution examined the demographic characteristics of the participants, including age, gender, ethnicity, vocational level, employment status, and education level. Nearly all participants were white females between the ages of 20 and 59 with bachelor's degrees, working as full-time employees. To analyze RO2, a Pearson's correlation was used, revealing a slight, positive relationship between imagery

practice time and the flourishing change among those who practiced imagery. Both RO3

and RO4 utilized a *t*-test to compare the change in flourishing between two independent

groups, and both had no evidence of outliers. In RO3, although the groups passed the

assumption of homogeneity, the results showed there were no statistically significant

differences in scores for non-managers. In RO4, the groups were not statistically

equivalent, so a Welch *t*-test was used. The results showed there were no statistically

significant differences in the change in flourishing scores for treatment group participants

and control group participants. For RO5, a two-way ANOVA was used to determine the

combined influence of imagery practice and vocational level on the change in flourishing.

The analysis revealed that while there was an interaction between the variables, it was not

statistically significant. Further, when the main effects were examined, the tests

confirmed the outcomes of RO3 and RO4 which stated that imagery was equally

beneficial by vocational level and participant group. The next chapter includes the

findings, conclusions, and recommendations related to this study.

CHAPTER V – CONCLUSION

This study examined the relationship between technology-assisted imagery and flourishing measures among remote-working professionals who no longer work in a traditional office setting. Work plays an important role in people's well-being (VanderWeele, 2017). The traditional workplace has been radically transformed due to artificial intelligence, changing worker demographics, the globalization of work, the popularity of side hustles, and a global pandemic (Fayard et al., 2021; Scully-Russ & Torraco, 2020). Amidst the transformation of the traditional workplace, many workers have less access to traditional, in-person methods for flourishing (Scully-Russ & Torraco, 2020; Torous et al., 2020), which led the researcher to examine options for flourishing in a remote-work setting.

In Chapter I, the researcher described the main functions of imagery, including the reciprocal relationships with positive self-talk and goal action planning (Cupal & Brewer, 2001; Ievleva & Orlick, 1991; Munezane, 2015; Neck & Manz, 1992). In Chapter II, the literature review explored the new workplace, learning theories, human flourishing, and imagery, including brain mechanics and vision boards (Burton & Lent, 2016; Ruffino et al., 2017; Waalkes et al., 2019). Chapter III unpacked the research methodology, and Chapter IV outlined the results. In Chapter V, the researcher presents the findings, conclusions, and recommendations, plus important implications, limitations, a discussion, recommendations for future research, and a summary.

Findings, Conclusions, and Recommendations

This section outlines the findings, conclusions, and recommendations for the study. The results produced important information about the relationship between

imagery practice and human flourishing among remote-working professionals in the technology sector. The results also explored the benefits of imagery at various vocational levels, including non-managers and managers who practiced imagery.

Finding 1: Raising awareness about one's strengths through self-assessments may be as effective as technology-assisted imagery practice.

All participants read and signed a consent form, informing them about the study's aim to explore a connection between imagery and human flourishing. Every participant also completed a self-assessment that encouraged them to reflect on their strengths and areas of opportunity regarding their well-being in various aspects of life (emotional health, physical health, meaning and purpose, character strengths, social connectedness, and financial security). According to the literature, creating awareness of one's strengths can improve well-being (Huber et al., 2019; Seligman, 2011) because each thought that an individual gives additional focus to initiates an extra burst of action toward achieving the desired target (Kavanagh et al., 2005). The results of the statistical tests indicate that the program was effective in improving flourishing levels for the control group that took self-assessments and the treatment group participants who practiced imagery.

Conclusion. The findings of this study affirm what previous researchers have demonstrated—that imagery is an effective method for improving the constructs of flourishing (Munezane, 2015; Witmer & Young, 1985). Treatment group participants had free, unlimited access to technology for practicing imagery, and the practice correlated positively to increased flourishing scores as revealed in the results. Control group participants received information about a potential connection between imagery and human flourishing, and they took a self-assessment that helped them identify areas of

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strength. The test results revealed equal levels of increased flourishing for both groups. This indicates that the well-being assessment (that raised awareness of individual strengths) was as beneficial as the imagery practice for improving flourishing.

Recommendation. HR practitioners and instructional designers should curate insightful and freely-available information about well-being. Accessible, "bite-size" snippets of content (similar to the daily encouragements) should endorse the practice of positive cognition such as imagery, positive self-talk, and goal planning. Additionally, they should couple this content with self-assessments that allow individuals to recognize their strengths, which leads to greater well-being.

Finding 2: *Individuals with wide-ranging demographics can practice technology-assisted imagery.*

Imagery is teachable among all age groups—even children can employ it (Wimmer et al., 2015). In the present study, participants ranged in age from 20 to 59, were male and female, and represented all major demographic groups, including White or Caucasian, Hispanic or Latino, Black or African American, Native American or American Indian, and Asian or Pacific Islander. Participants had varied education levels, including bachelor's degrees, master's degrees, or doctorate degrees. Interestingly, all participants were full-time, regular employees.

Conclusion. These findings reinforced previous studies, which demonstrated that most people employ imagery throughout the day (Dror & Kosslyn, 1994; Wimmer et al., 2015). HR scholars and practitioners can feel confident using imagery practice across many demographics. Content that teaches individuals to flourish is beneficial across all ages, genders, and ethnicities. Programs that teach and enhance the constructs of

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flourishing need not be tailored to specific demographics to be effective. Workers of various demographics can receive training curated through mobile app technology. Although contractors and part-time workers were invited to participate, none accepted the offer, which may indicate that they do not perceive themselves as eligible for wellness programs and benefits.

Recommendation. Employers should consider deploying well-being programs that utilize imagery for professionals, regardless of their demographics. Because contingent workers are an essential aspect of the emerging workplace (Webb et al., 2017), HR practitioners should be sure there is a clear offer to them for well-being training. Organizations should also be sure part-time workers can participate in wellness efforts.

Finding 3: Professionals who work in a non-traditional workplace can increase flourishing levels using technology-assisted imagery.

Previous research has explored imagery practice among individuals and organizations. This study expanded the scope of research by exploring technology-assisted imagery practice in a non-traditional, work-from-home setting. Technology-assisted imagery practice among professionals who worked remotely at least half of each work week was effective in improving flourishing scores. In general, the data showed that as practice time increased, the change in flourishing also increased for professionals. Many workforce experts believe there will not be a return to the traditional workplace (de Lucas Ancillo et al., 2020; Parker et al., 2020; Wong, 2020), so having resources that improve flourishing and are easy to curate for off-site workers is valuable.

Conclusion. Employees have historically sought in-person professional assistance and formal relationships in achieving growth and well-being in their work and personal

lives (Amundsen, 2021; Douglas & McCauley, 1999; Segers et al., 2011; Torous et al., 2020). This study confirms that digital, off-site solutions offer viable alternatives to traditional resources for flourishing. The results demonstrate that technology-assisted imagery practice can improve human flourishing, reinforcing previous literature regarding the advantages of imagery (Burton & Lent, 2016; Neck & Manz, 1992; Ruffino et al., 2017; Waalkes et al., 2019), even if workers participate in the emerging, remote-work setting.

Recommendation. Technology-assisted imagery can help remote workers flourish in their new, non-traditional work setting. Therefore, organizations and HR practitioners should offer programs that use technology and imagery. Specifically, HR can deploy programs that include positive self-talk and goal-setting rituals to improve the well-being of professionals, whether fully-remote or hybrid workers. Corporate leaders should tout the benefits of imagery practice and encourage workers to participate in free programs to experience the personal benefits, particularly if they work remotely.

Finding 4: Non-managers and managers benefit equally from imagery practice.

Researchers have debated whether skill level impacts the usefulness of imagery (Anthony et al., 1993; dos Santos et al., 2021; Montuori et al., 2018). The third research objective addressed this debate. Of the 15 treatment group participants, six were managers, and nine were non-managers. The non-managers and managers experienced a similar improvement in their flourishing measures after practicing imagery in the mobile app.

Conclusion. Technology-assisted imagery practice is beneficial whether employees are individual contributors who do not supervise others or are in a position to

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manage people. Programs deployed through a mobile app are accessible and effective for professionals at various organizational levels. Well-being programs can be deployed equally among all employees, and bespoke content is not required for specific groups. Unfortunately, this finding does not settle the debate about imagery's usefulness by skill set or vocational level.

Recommendation. Employers should consider deploying programs that include imagery practice, positive self-talk, and goal setting to improve the well-being of remote workers. Leaders can rest assured that imagery practice is beneficial, regardless of an individual's vocational level. HR leaders should use mobile app technology to effectively curate flourishing programs without regard to vocational levels.

Finding 5: Mobile apps curate instructional technologies that support human flourishing, but well-being programs should be carefully examined.

In the present study, all participants were able to find the app in the online stores, establish a username and password, and create at least one goal that included a digital image and affirmation statement. This demonstrated that mobile app technology was not a barrier to practicing imagery. It is unclear whether participants had any privacy concerns when using the app. Would the researcher share any information with organizational leaders? This nagging question may have kept treatment group participants from fully engaging in imagery practice. What is clear is that a daily practice for a prolonged period was not sustainable. After the first work week, participants engaged with the app with less frequency.

Conclusion. Workers can improve their flourishing scores using programs that are curated with app technology. While app consumption is growing exponentially (Iqbal,

2020), declining app usage throughout the study indicates that daily usage for three weeks may be overly burdensome. According to previous research, daily imagery practice improves the likelihood of achieving desired effects (Limayem et al., 2007; Schwartz & Gladding, 2012). The study offered treatment group participants free and unlimited access to the mobile app. However, most participants did not practice daily. Requesting a daily practice for extended periods may be more strenuous than beneficial, and privacy concerns may inhibit full engagement in the study. The underutilization of the app, which could have been caused by privacy concerns or participation fatigue, may have negatively impacted the results.

Recommendation. HR scholars and practitioners can deploy well-being programs via mobile devices. Digital well-being interventions can be programmed for working professionals and motivate them towards improvement. However, programs should be closely examined to ensure they do not require burdensome levels of commitment from participants. Programs should also not feel overly personal or intrusive.

Implications

Society is grappling with the emerging workplace and automation that radically changes the nature of work (International Labour Organization, 2020; Quifan & Lee, 2021; Ra et al., 2019). Many workforce experts do not believe there will be a return to the traditional office setting (de Lucas Ancillo et al., 2020; Parker et al., 2020; Wong, 2020). This research provides a greater understanding of how to flourish in the new, non-traditional workplace. The present study explicitly assists HR scholars and practitioners who are searching for new avenues to help non-traditional workers flourish in a remote-work setting despite losing access to some in-person resources. Previous research

connects imagery to improvement in professional skills and career development (Neck & Manz, 1992). This research reinforces that employees who use imagery positively affect their internal dialogue and ability to flourish (Neck & Manz, 1992). Through this study, technology has again shown effective in assisting individuals in creating digital images of an ideal future state (Adolphs et al., 2018; Carolan et al., 2017). And the study revealed that technology-assisted imagery correlates to increased levels of flourishing, making it a novel resource for finding well-being in the emerging workplace. These findings create an opportunity for employers in the technology sector to invest in their workforce and improve the well-being of workers scattered in remote-working locations. This study offers companies new subject matter and cost-effective, practical tactics to sustain and improve worker well-being.

Limitations

Limitations are study features that may impact the results; the researcher has very little control over limitations (Roberts & Hardy, 2019). There are limitations to this study requiring mention. First, the study involved the use of an app. Because treatment group participants interacted with the app in isolation, it was impossible to observe the user experience. Instead, the researcher relied on back-end app usage data. Second, the study sought to quantify cognition, including imagery and the constructs of flourishing. Most of this work neither addressed nor tested employees' ability to control or alter their cognitive processing, the intervention did not diagnose mental health conditions, and there was no intent for the intervention to "trigger" or perpetuate previous mental health diagnoses. Also, retaining participants willing to practice for three weeks proved problematic. According to Webb et al. (2017), stand-alone internet-based interventions

can reach many people but often have high attrition rates. Practice time decreased throughout this study, insinuating that a daily practice for three weeks required more time and effort than participants were willing to give, despite an incentive being offered.

As part of the consent document, treatment group participants were informed that a research team would have access to the data collected in the mobile app. The researcher has no way of knowing if participants were concerned that personal aspirations and professional goals entered into the app would be shared with leaders in the organization and negatively impact their performance evaluations. It is unclear whether this kept them from engaging fully with the app and daily practice. Control group participants may not have had the same privacy concerns since they did not use the app.

Finally, imagery has detractors. Made wildly popular in 2006 by the movie and subsequent book *The Secret* (Byrne, 2006), visualization became frequently associated with the Law of Attraction in popular culture. The Law of Attraction, and therefore mental imagery, has come to mean that our bodies send out vibrations to attract our lofty desires (Trine, 2008). Neck and Manz (1992) said that while some people are concerned about the scientific credibility of mental imagery, it plays an essential role in bringing attention to the need for empirical evidence. Specifically, they found that applying cognitive practices, including imagery, can improve individual and organizational performance (Neck & Manz, 1992).

Discussion

The researcher examined the relationship between technology-assisted imagery and flourishing measures among professionals who no longer work in a traditional office setting. The study's findings answered the overarching research question: *Can*

technology-assisted imagery improve flourishing? Additionally, the important findings in the study aligned with previous literature, (a) becoming aware of one's strengths can improve well-being; (b) individuals with wide-ranging demographics can practice imagery; (c) there is a positive correlation between imagery practice and improvement in the constructs of flourishing; (d) non-managers and managers benefit equally from imagery practice; and (e) mobile app technology is effective for deploying treatment programs.

The non-traditional workplace will continue to evolve. In 2020, seemingly overnight, the workplace wildly transformed due to the COVID-19 coronavirus, which quickly became a global pandemic. This massive disruption rapidly accelerated the use of artificial intelligence. Machine learning quickly replaced human effort for certain tasks. Technology leaders and workforce experts project further technological unemployment (the replacement of human capital through artificial intelligence; Roberts, 2021). Simultaneously, the modern workforce demands that workplaces transform into spaces that give meaningful work and positively affect culture and society (de Lucas Ancillo et al., 2020). Organizational leaders and HR practitioners must continue to uncover new methods and resources for helping employees navigate the ever-changing workplace.

The need to flourish will not diminish. Remote work has negatively impacted the flourishing domains, and workers need digital tools that promote good physical and mental health (Amundsen, 2021; Torous et al., 2020). Participants in this study demonstrated through their surveys that individual flourishing measures are still not optimal, despite a post-COVID return to 'normal' in many aspects of life such as air travel, transportation, retail services, and eateries.

Immersive technologies may offer new and exciting methods for improving human flourishing. The literature is clear that mental images where individuals see themselves achieving desired targets improve flourishing (Fox & Bailenson, 2009). This study's results indicate that 2-D digital renderings through mobile apps also improve flourishing. The next logical question is *Can immersive virtual and augmented reality scenarios also improve human flourishing?* The review of the literature revealed that realistic images are more effective than vague mental images and that technological virtual environments aid users in improving health and cognition (Adolphs et al., 2018; Hershfield et al., 2011). As one considers previous research in tandem with the outcomes of the present study, it is not difficult to imagine that immersive technologies may be able to improve human flourishing.

This study uniquely brings together research from multiple fields of study including human capital development, learning theories, theories of motivation, brain mechanics, mental imagery, the emerging workplace, and the role of technology in our work and personal lives. The findings affirmed a novel approach to helping remote workers flourish in their non-traditional, at-home workspaces. HR practitioners can glean important conclusions and recommendations from the study.

<div align="center">Recommendations for Further Research</div>

The researcher used the findings of this study to make the following recommendations for further research. First, HCD scholars could replicate the present study with a larger population to obtain results that can be generalized further. The strength of the self-assessment, the underutilization of the app, and similar increases in flourishing for both the control and treatment groups made it challenging to fully assess

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the impact of technology-assisted imagery on flourishing in this particular study. As indicated, the self-assessment alone may have been as impactful on flourishing as the technology-assisted imagery. This first recommendation is made, based on these nuanced findings.

Second, the study only examined the impact of imagery on domestic technology professionals who worked remotely for at least half of each week. Future studies could explore the benefits of technology-assisted imagery for employees who work in an on-site, traditional work setting or other industry sectors. Additionally, workers outside the United States could be included in future studies, although program content should be carefully translated and localized.

Participants created goals that were both short- and long-term and were targeted toward most facets of life including body, mind, and spirit. Aggregated scores across the pretest and posttest for all participants revealed that the lowest scored construct of flourishing was Physical Health, and many participants set goals around eating and exercise habits and losing weight. Conversely, the highest-scored construct in both the pretest and posttest was Character Strengths. Future research that explores a potential relationship between these constructs may prove beneficial. It may also be informative for future studies to examine morning routines versus evening habits to contribute to human capital development and well-being literature. Researchers could also consider comparing the outcomes of those who practice mental imagery not assisted by technology (simply imagining scenarios or creating collages to frame or put on a bulletin board) with those who practice technology-assisted imagery (creating images with technology).

The researcher also recommends considerations for future data collection methodology. Daily encouragements were sent to each treatment group participant. However, despite receiving daily encouragement, mobile app usage declined throughout the study. Participants opened the app to practice imagery with lower frequency after the first work week of the three-week study. Therefore, future researchers should consider their approach to recruiting and incentivizing participants for studies that seek participation for extended periods. Additionally, the researcher recommends a shorter invitation period. Multiple employees told the researcher that they had pinned (saved) the Slack© invitation for later with the understanding that they had plenty of time to participate but ultimately forgot to later return to the invitation. Finally, mixed-methods research may prove useful for triangulating the data. Interviews with open-ended questions may provide more specific insights than app usage data alone.

Summary of the Study

Work plays a valuable role in people's lives (VanderWeele, 2017), and employees want to find well-being at work, meaning and purpose, good health, and happiness (VanderWeele, 2021). Traditional in-person methods that facilitate well-being at work are less available in the new remote-working environment (International Labour Organization, 2020; Scully-Russ & Torraco, 2020). The popularity of digital learning and vision boards offered an opportunity to develop an app to help workers integrate imagery into their daily lives. This quantitative study sought to determine the relationship between technology-assisted imagery and flourishing measures among professionals who work remotely and are no longer in a traditional office setting.

The literature supported a conceptual framework that was based on human capital development theory. A quantitative study with random assignment was an effective research design. In terms of results, a Pearson's *r* test revealed a positive correlation between technology-assisted imagery and increased human flourishing. A *t*-test revealed that imagery is equally beneficial across varying vocational levels. A second *t*-test demonstrated that treatment and control group participants who took personal self-assessments increased their flourishing levels. A two-way ANOVA revealed that there is no significant interdependency between vocational level and practice time which could affect participants' ability to flourish. These findings affirmed previous research about imagery's positive effects (Munezane, 2015; Neck & Manz, 1992) and added to the body of literature as it pertains to technology assistance in the emerging workplace.

Athletes, students, counselors, and working professionals use imagery to achieve the desired future (Ievleva & Orlick, 1991; Neck & Manz, 1992). Technology can facilitate mental imagery training and practice (Burton & Lent, 2016; Sikder et al., 2019). This study confirms that technology-assisted imagery positively correlates to increased human flourishing, offering a novel resource to remote-working professionals.

Re: FW: Permissions Request

Kate Piersanti <kate@headlandpro.com>
Tue 6/21/2022 7:29 PM

To: Wendi Lord <Wendi.Lord@usm.edu>

Hi Wendi,

You have permission to use the figure you have requested for your dissertation. How exciting--a dissertation!

Please use this as the credit line:

>   Reprinted with permission of the publisher. From (title of book),
>   copyright© (year) by (author), Berrett-Koehler Publishers, Inc.,
>   San Francisco, CA. All rights reserved. www.bkconnection.com

Thank you and I hope all goes well on this last leg of your PhD requirements.
Go well,
Kate

On Tue, Jun 21, 2022 at 5:04 PM Berrett-Koehler <bkpub@bkpub.com> wrote:

From: Wendi Lord <Wendi.Lord@usm.edu>
Date: Thursday, June 16, 2022 at 5:18 PM
To: Berrett-Koehler <bkpub@bkpub.com>
Subject: Permissions Request

Good day. I am a PhD candidate in the Human Capital Development program at the University of Southern Mississippi. I'm seeking permissions to use the "three-legged stool" figure on page 306 of "Foundations of Human Resource Development" by R. A. Swanson, 2001, in my dissertation.

Thank you for your consideration, and please let me know if you have any questions.

With gratitude

Wendi Lord

PhD Candidate,

University of Southern Mississippi

Re: REPUBLICATION REQUEST - IMAGE

Sciam randp <randp@sciam.com>
Tue 6/21/2022 8:34 PM
To: Wendi Lord Wendi.Lord@usm.edu

Dear Wendi

Thank you for your request. We are able to grant permission for the image below to be used in your Master's thesis as detailed in the request form below. There is no fee for this use. Please let us know if you need an agreement letter, or if this email will suffice.

Best of luck!
Sincerely,
Rights and Permissions, Scientific American

From: webmaster@sciam.com <webmaster@sciam.com>
Sent: Friday, June 17, 2022 12:10 PM
To: Sciam randp <randp@sciam.com>
Subject: REPUBLICATION REQUEST - IMAGE

CONTACT INFORMATION -
Name: Wendi Lord
Company/Institution: PhD Candidate - University of Southern Mississippi
Street Address: 4848 Turquoise Lake Ct.
Colorado Springs Colorado 80924 Country: UNITED STATES
Phone: 4802820530

MATERIAL REQUESTED -
Title of Article: The Reticular Formation
Author of Article: French
Date of Publication: May/1957
Page Number or Complete URL where **image** appears: 54
First four words of caption: The reticular formation is
ABOUT YOUR WORK -
Tentative Title of Work: Dissertation: Flourishing in a Non-Traditional Workplace Using Technology-Assisted Imagery
Author/Editor: Wendi Lord
Brief Description of Work: Good day. I am a PhD candidate in the Human Capital Development program at the University of Southern Mississippi. I'm seeking permissions to adapt Dr. French's depiction of the Reticular Activating System figure (see below) in "The Reticular Formation" by French, 1957, Scientific American, 196(5), on page 54 (https://www.jstor.org/stable/10.2307/24940826), in my dissertation. Thank you for your consideration.
Format: - OTHER - Specify in Detail Electronic only
Purpose of Usage: Dissertation

APPENDIX C – Invitation to Participate in the Study

INVITATION:

Hello, Scottsdale! @channel

I am an employee on the Academy e-Learning team and a Ph.D. candidate focused on human flourishing. I need your help to complete my research! Specifically, I'm looking for Axon employees and contractors who spend at least half of your work hours each week working at an off-site location (not working at the headquarters facility). If you would like to learn more and potentially participate, please click on this link to complete a Consent Form. Please sign up **no later than August 8, 2022, at noon PT!** And if you have any questions, Slack or call me at (480) 282-0530. Thank you in advance for your help!

IRB# 22-409

REMINDER:

@channel **You could win a $100 gift card!** DEADLINE REMINDER: I need volunteers to help me complete research for my Ph.D. program by completing two short surveys and being willing to download/use an app if needed. Please sign up **no later than August 8, 2022, at noon PT!** I'm looking for Axon employees and contractors who spend at least half of your work hours each week working remotely. To learn more, please click on this link to complete a Consent Form to participate and potentially win $100! And if you have any questions, Slack or call me at (480) 282-0530. Thank you in advance for your help!

IRB# 22-409

APPENDIX D – Permission to Send the Study Invitation

Wendi Lord
_____

From:	Elizabeth Hart
Sent:	Tuesday, February 15, 2022 7:42 AM
To:	Wendi Lord
Subject:	RE: Research Project Invitations via Slack

Supportive! Let me know if you need anything else from me.
E

From: Wendi Lord <wlord@axon.com>
Sent: Monday, February 14, 2022 8:06 PM
To: Elizabeth Hart <ehart@axon.com>
Subject: Research Project Invitations via Slack

Hi, Elizabeth –

In our last conversation, you had approved my sending an invitation to members of the Scottsdale Slack channel to participate in my doctoral program final research project. My review board will require your approval in writing, so I would like to request a response to this email as confirmation.

Just as a reminder, I am planning to send the invitation in May/June this year. I will send the invite to the Scottsdale Slack channel, including a short description of the program about using imagery to flourish at work, particularly for those in a non-traditional, work-from-home setting. I will request that interested employees message me regarding their willingness to participate.

If you need anything further, please let me know. Thank you again for approving this project!

With gratitude
- Wendi

APPENDIX E – Consent Form

Link: https://s.surveyplanet.com/dhnb2f8r

My name is Wendi Lord. I am an employee on the e-Learning team, and I'm pursuing a doctoral degree at the University of Southern Mississippi.

The purpose of my research is to determine whether our mobile devices can help us flourish in our new non-traditional work setting. This is a three-week study.

To qualify for this study:
1. Participants must be a full- or part-time employee or contractor for Axon who works at least half of their working hours each week remotely (not at the headquarters location).
2. Participants must be members of the Scottsdale Slack® channel.
3. Participants must be willing to download an app to their mobile device for use related to this study, as needed.
4. Participants agree to complete two short surveys for this study, each taking just 5 minutes to complete.
   - The first questionnaire will be sent on August 8, 2022, and must be completed no later than August 9, 2022, at noon PT.
   - The second survey will be sent on August 30, 2022, and must be completed no later than midnight PT on August 31, 2022.

Why should you participate?
First, participants who complete both surveys will be entered into a drawing to win one of three Amazon gift cards valued at $100.00 each! Also, you will be helping researchers improve the well-being of professionals who now work at home. Your responses will be used in a study to explore whether technology-assisted imagery helps employees flourish in a non-traditional (work-from-home) setting.

There are no foreseeable risks or discomforts to your participation.

Only the research team will have access to the data collected, and all responses will be kept confidential and password-protected. Your responses will be de-identified and used in an academic research study, and your responses will not be shared with any members of the company staff.

The University's Institutional Review Board has approved this study for human studies (IRB # 22-409), which ensures that research projects involving human subjects follow federal regulations.

If you have any questions about the research study, please contact

Wendi Lord
Slack: @wlord
wendi.lord@usm.edu
480-282-0530

Any questions or concerns about rights as a research participant should be directed to the Chair of the Institutional Review Board.

The University of Southern Mississippi
118 College Drive, #5125
Hattiesburg, MS 39406-0001
601-266-5997

All procedures to be followed and their purposes were explained to me. Information was given about all benefits, risks, inconveniences, or discomforts that might be expected. Any new information that develops during the project will be provided to me if that information may affect my willingness to continue participation in the project.

This consent form includes eligibility information and instruction. Please read it carefully before entering your email address next to "I agree" to begin the study.

Thank you for your interest in this study and for your consent to participate in the research.

Q1 I understand that participation in this project is completely voluntary, and I may withdraw at any time without penalty, prejudice, or loss of benefits. Unless described above, all personal information will be kept strictly confidential, including my name and other identifying information.

All procedures to be followed and their purposes were explained to me. Information was given about all benefits, risks, inconveniences, or discomforts that might be expected.

Any new information that develops during the project will be provided to me if that information may affect my willingness to continue participation in the project.

I agree (enter your Axon email address to agree)

Thank you for your interest in this study and for your consent to participate in the research.

APPENDIX F – Pretest for Treatment and Control Groups

Link (treatment group): https://s.surveyplanet.com/xg9bkzwe

Link (control group): https://s.surveyplanet.com/ne4fhi6b

Pretest Welcome Message: Thank you for participating in this study to understand how individuals can flourish in a remote work setting. This is a survey that has no wrong answers, and your responses are critical in helping people feel good and function well. This will probably take 5 minutes or less. Thank you for participating!

Enter your email address (required): _____

1. Overall, how satisfied are you with life as a whole these days?

    0 = Not Satisfied at All, 10 = Completely Satisfied ___

2. In general, how happy or unhappy do you usually feel?

    0 = Extremely Unhappy, 10 = Extremely Happy ___

3. In general, how would you rate your physical health?

    0 = Poor, 10 = Excellent ___

4. How would you rate your overall mental health?

    0 = Poor, 10 = Excellent ___

5. Overall, to what extent do you feel the things you do in your life are worthwhile?

    0= Not at All Worthwhile, 10 = Completely Worthwhile ___

6. I understand my purpose in life.

    0 = Strongly Disagree, 10 = Strongly Agree ___

7. I always act to promote good in all circumstances, even in difficult and challenging situations.

0 = Not True of Me, 10 = Completely True of Me ___

8. I am always able to give up some happiness now for greater happiness later.

    0 = Not True of Me, 10 = Completely True of Me ___

9. I am content with my friendships and relationships.

    0 = Strongly Disagree, 10 = Strongly Agree ___

10. My relationships are as satisfying as I would want them to be.

    0 = Strongly Disagree, 10 = Strongly Agree ___

11. How often do you worry about being able to meet normal monthly living expenses?

    0 = Worry All of the Time, 10 = Do Not Ever Worry ___

12. How often do you worry about safety, food, or housing?

    0 = Worry All of the Time, 10 = Do Not Ever Worry ___

13. With what gender do you identify?

    Male, Female, Non-binary ___

14. Please indicate your age (in years, as of today):

    20-29, 30-39, 40-49, 50-59, 60-69, 70+ ___

15. Please specify your ethnicity:

    White, Hispanic or Latino, Black or African American, Native American or
    American Indian, Asian or Pacific Islander, Other ___

16. Please mark your current employment status: ___

    Full-time employee working 40 or more hours per week
    Part-time employee working less than 40 hours per week
    Full-time contractor working 40 or more hours per week
    Part-time contractor working less than 40 hours per week

17. Please indicate your vocational level: ___

      Non-managerial professional (no direct reports to supervise)

      Manager (supervise at least 1 direct report)

18. What is the highest level of education you have completed?   ___

      Highschool diploma or equivalent (i.e., GED), Some college, no degree,

      Associate degree, Bachelor's degree, Master's degree, Doctorate degree

Pretest Closing Message:
Thank you for taking this survey!
(Wendi Lord, IRB#: 22-409)

Additional Closing Message for Treatment group only:
      Please proceed to the Apple® or Google Play® store and **download the Flourishing at Work app** to begin the study on Tuesday, August 9, 2022.

      After you download the app, create at least one goal. Using the app, you will assign an image and affirmation statement to each goal and review them daily throughout this study. Each time you're finished reviewing your goal(s), click on "I'm finished for now" to close out the app.

Thank you again for being part of this program. Your participation will help all of us flourish at work and in life.

(Wendi Lord, IRB#: 22-409)

CONTROL GROUP:

Thank you for participating in my study, examining how we can flourish in a remote work setting! I have received your signed consent form. Please take about 5 minutes to complete the first questionnaire for this study. This survey **must be completed no later than Tuesday, August 9, at noon PT.**

https://s.surveyplanet.com/ne4fhi6b

If you have any questions, Slack or call me at (480) 282-0530. Thank you in advance for your help!

Wendi Lord (IRB# 22-409)

TREATMENT GROUP:

Thank you for participating in my study, examining how we can flourish in a remote work setting! I have received your signed consent form. Please take about 5 minutes to complete the first questionnaire for this study. This survey must be completed **no later than Tuesday, August 9, at noon PT.**

https://s.surveyplanet.com/xg9bkzwe

Be sure to follow the instructions at the end of the survey. You will proceed to the Apple or Google Play store and download the *Flourishing at Work* app to begin the study on Tuesday, August 9, 2022. Within the app, you'll establish at least one goal and review it daily for 3 weeks. If you have any questions, Slack or call me at (480) 282-0530. Thank you in advance for your help!

Wendi Lord (IRB# 22-409)

APPENDIX H – Well-Being Assessment

1. Overall, how satisfied are you with life as a whole these days?

    0 = Not Satisfied at All, 10 = Completely Satisfied _____

2. In general, how happy or unhappy do you usually feel?

    0 = Extremely Unhappy, 10 = Extremely Happy _____

3. In general, how would you rate your physical health?

    0 = Poor, 10 = Excellent _____

4. How would you rate your overall mental health?

    0 = Poor, 10 = Excellent _____

5. Overall, to what extent do you feel the things you do in your life are worthwhile?

    0= Not at All Worthwhile, 10 = Completely Worthwhile _____

6. I understand my purpose in life.

    0 = Strongly Disagree, 10 = Strongly Agree _____

7. I always act to promote good in all circumstances, even in difficult and challenging situations.

    0 = Not True of Me, 10 = Completely True of Me _____

8. I am always able to give up some happiness now for greater happiness later.

    0 = Not True of Me, 10 = Completely True of Me _____

9. I am content with my friendships and relationships.

    0 = Strongly Disagree, 10 = Strongly Agree _____

10. My relationships are as satisfying as I would want them to be.

    0 = Strongly Disagree, 10 = Strongly Agree _____

11. How often do you worry about being able to meet normal monthly living expenses?

    0 = Worry All of the Time, 10 = Do Not Ever Worry _____

12. How often do you worry about safety, food, or housing?

    0 = Worry All of the Time, 10 = Do Not Ever Worry _____

APPENDIX I – Permission to use the Well-Being Assessment

The Human Flourishing Program
at Harvard's Institute for Quantitative Social Science

HOME   MEDIA   GIVE

ABOUT US▾   FLOURISHING▾   OUR RESEARCH▾   TEACHING▾   EVENTS▾   NEWS&MEDIA▾   GIVE

Our Flourishing Measure

The Human Flourishing Program has developed a measurement approach to human flourishing, based around five central domains: happiness and life satisfaction, mental and physical health, meaning and purpose, character and virtue, and close social relationships. Each of these is nearly universally desired, and each constitutes an end in and of itself.

The measure and its conceptual motivation were put forward in a 2017 paper, On the Promotion of Human Flourishing, by Professor VanderWeele, in the Proceedings of the National Academy of Sciences. The Program aims to encourage the measurement and tracking of these various aspects of flourishing in workplace, medical, educational, and governmental settings, and to better understand the determinants of flourishing, and policies to promote it. Together with the SHINE Program at the Harvard T.H. Chan School of Public Health, the measure has been used in collaboration with Levi Strauss & Co., Allegacy Credit Union, Owens Corning, several major airlines, and also a new multi-year research collaboration with Aetna, to expand and develop the measure yet further, and to track and promote well-being among employees.

We also have proposed a number related measures adapted for use in adolescent samples, more extensive assessments, incorporating years of life into flourishing, and calculating flourishing scores with Gallup World Poll data. Further information on these other assessments is available here.

The Program's flourishing index measure is copyrighted under a Creative Commons License (CC-BY-NC 4.0). However, it can be used without permission for non-commercial purposes if proper citation is given. The reference for the paper in which the measure was presented is:

> VanderWeele, T.J. (2017). On the promotion of human flourishing. Proceedings of the National Academy of Sciences, U.S.A., 31:8148-8156.

Download the 12 flourishing questions for use in your organization here, under our creative commons license.

Subscribe to our mailing list

Email Address *

First Name

Last Name

VanderWeele, Tyler J. <tvanderw@hsph.harvard.edu>
Tue 11/23/2021 2:16 PM
To: Wendi Lord; Wilson, Matthew <mfwilson@fas.harvard.edu>

Dear Wendi,

This is wonderful to hear and please do keep us posted.

All best wishes,
Tyler

From: Wendi Lord <Wendi.Lord@usm.edu>
Sent: Sunday, November 21, 2021 8:04 PM
To: Wilson, Matthew <mfwilson@fas.harvard.edu>; VanderWeele, Tyler J. <tvanderw@hsph.harvard.edu>
Subject: Using the WBA to explore Flourishing While Working in Isolation

Dr. VanderWeele & Dr. Wilson -

Thank you for the pioneering work you are doing in the Human Flourishing Program at the Institute for Quantitative Social Science. I wanted to make you aware of a research proposal I am crafting, which will utilize the Well-Being Assessment developed by your team. The quantitative study will be conducted in 2022, specifically focusing on Work & Well-Being.

A global pandemic has forced organizations to revamp traditional methods for facilitating well-being at work. Specifically, employees need solutions that allow them to flourish at home in an isolated work arrangement. This study connects research about flourishing into the workforce context, exploring whether professionals who practice technology-assisted imagery can improve the way they feel and function while working in isolation. Summative details are attached for your information.

In the future, I plan to conduct further research in the areas of Character & Formation, Religious Communities, and Meaning & Purpose. Again, thank you for developing the WBA, which is foundational to this project. If you would like access to my 2022 study, I would be pleased to share the results when the study concludes next summer.

With much gratitude

Wendi Lord
Ph.D. Candidate, USM School of Leadership
Human Capital Development,
emphasizing Instructional Technologies & Design

APPENDIX J – Posttest for All Participants

Link: https://s.surveyplanet.com/g1pouilb

Posttest Welcome Message: Thank you for completing this research study. There are just a few questions to follow up on. This survey has no wrong answers and will probably take 5 minutes or less. Let's get started!

Enter your email address (required): _____

1. Overall, how satisfied are you with life as a whole these days?

    0 = Not Satisfied at All, 10 = Completely Satisfied   ___

2. In general, how happy or unhappy do you usually feel?

    0 = Extremely Unhappy, 10 = Extremely Happy   ___

3. In general, how would you rate your physical health?

    0 = Poor, 10 = Excellent   ___

4. How would you rate your overall mental health?

    0 = Poor, 10 = Excellent   ___

5. Overall, to what extent do you feel the things you do in your life are worthwhile?

    0 = Not at All Worthwhile, 10 = Completely Worthwhile   ___

6. I understand my purpose in life.

    0 = Strongly Disagree, 10 = Strongly Agree   ___

7. I always act to promote good in all circumstances, even in difficult and challenging situations.

    0 = Not True of Me, 10 = Completely True of Me   ___

8. I am always able to give up some happiness now for greater happiness later.

    0 = Not True of Me, 10 = Completely True of Me   ___

9. I am content with my friendships and relationships.

    0 = Strongly Disagree, 10 = Strongly Agree   ___

10. My relationships are as satisfying as I would want them to be.

    0 = Strongly Disagree, 10 = Strongly Agree   ___

11. How often do you worry about being able to meet normal monthly living expenses?

    0 = Worry All of the Time, 10 = Do Not Ever Worry   ___

12. How often do you worry about safety, food, or housing?

    0 = Worry All of the Time, 10 = Do Not Ever Worry   ___

Posttest Closing Message: Thank you for completing the program and taking this survey! If you would like access to any of the materials from this program, please contact Wendi Lord via Slack or at 480-282-0530.

(IRB#: 22-409)

APPENDIX K – Random Number Generator Example

Office *of*
Research Integrity

THE UNIVERSITY OF
SOUTHERN
MISSISSIPPI.

118 COLLEGE DRIVE #5116 • HATTIESBURG, MS | 601.266.6756 | WWW.USM.EDU/ORI

NOTICE OF INSTITUTIONAL REVIEW BOARD ACTION

The project below has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services regulations (45 CFR Part 46), and University Policy to ensure:

- The risks to subjects are minimized and reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered involving risks to subjects must be reported immediately. Problems should be reported to ORI via the Incident submission on InfoEd IRB.
- The period of approval is twelve months. An application for renewal must be submitted for projects exceeding twelve months.

PROTOCOL NUMBER: 22-409
PROJECT TITLE: FLOURISHING IN A NON-TRADITIONAL WORKPLACE USING TECHNOLOGY-ASSISTED IMAGERY
SCHOOL/PROGRAM School of Leadership
RESEARCHERS: PI: Wendi Lord
Investigators: Lord, Wendi~
IRB COMMITTEE ACTION: Approved
CATEGORY: Expedited Category
PERIOD OF APPROVAL: 01-Aug-2022 to 31-Jul-2023

Donald Sacco, Ph.D.
Institutional Review Board Chairperson

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APPENDIX N – Daily Encouragement for Treatment Group Participants

Day 1: Thank you again for participating in this study, focused on flourishing in a non-traditional work setting using technology-assisted imagery. If you haven't already done so, you can get started by downloading the *Flourishing at Work* app from the Apple or Google Play store to create at least one goal. You will collect images, write affirmations, and review your goals throughout the next 3 weeks. Enjoy the journey of dreaming about the future!

Day 2: There are many benefits to imagery, so don't forget to log into the app for a few minutes to start your vision board and proactively imagine today what you want for the future.

Need an example to get started? Try a short-term goal. Find a picture that depicts yourself in comfortable shoes and clothing, walking or running. Add the sentence "I can walk to feel healthy and vibrant and clear my mind." Think about the path you'll take, the sights, the sounds, and the smells. Imagine how it will feel, knowing you're enjoying the time and living a healthy lifestyle.

When you're finished, click "I'm finished for now" to close out of the app.

Day 3: Mental imagery is the process of intentionally imagining an ideal future and dwelling on it until it becomes a reality. Spend a few minutes today imaging your goals and aspirations. Remind yourself that you are worthy of fulfilling your dreams!

Is there something you'd like to learn? A certification or degree you'd like to obtain? Would you like to learn a foreign language or a new programming language? Open the app, and add an image and affirmation!

Then, take a few deep breaths. Get a sense of what it will feel like when you've accomplished this goal. Remind yourself that you can do this! If dates are important to you, feel free to include a timeline or a critical milestone in your affirmation statement. Consider sharing your dream with someone who could be a cheerleader and accountability partner.

When you're finished, click "I'm finished for now" to close out of the app.

Day 4: Using our imagination is essential in memory, spatial planning, navigation, and our interactions with other people. Spend time in the app today, imagining your best life—whether it's your health, relationships, career, or travel.

When you're finished, click "I'm finished for now" to close out of the app.

Day 5: A vision board is a collection of images that helps us focus on our goals and dreams. Have you created your vision board? Need an example?

Take a few deep breaths. Get a mental picture of what a healthy lifestyle means to you, whether it's the proper food intake, fitness activities, restorative sleep, or remembering to take your vitamins. Grab a picture, create an affirmation, and save it to your vision board!

When you're finished, click "I'm finished for now" to close out of the app.

Day 6: Did you review your vision board today? Log into the app and let yourself dream as you review your goals. Feel free to add another goal or remove one, if needed! When you're finished, click "I'm finished for now" to close out of the app.

Day 7: Every facet of life can be depicted with an image. Spend a few minutes in the app today visualizing your financial goals, education or career aspirations, or the hobby you want to turn into a business. You can also imagine your ideal travel and leisure time or your ideal mental and physical well-being. You can even dream about the pets you want as companions!

When you're finished, click "I'm finished for now" to close out of the app.

Day 8: Look at your vision board, and speak those positive messages to yourself. It feels awkward at first, but you'll fall in love with this habit. Set a timer if that makes it easier. When you're finished, click "I'm finished for now" to close out of the app.

Day 9: Don't forget to take time for imagery today! Log in to the app and start adding some goals and images. Then scroll through them each morning. When you're finished, click "I'm finished for now" to close out of the app.

Need some ideas? Ask yourself a few questions such as Where do I want to live? Who would I like to help? Who would I like to vacation with? What would I do with more free time? If money were no object, what would I do?

Day 10: Your thoughts create positive or negative spirals of momentum. Feeling good creates a positive, upward spiral, but feeling bad produces a negative, downward spiral. Spend a few minutes adding images of what would make you feel good today! When you're finished, click "I'm finished for now" to close out of the app.

Day 11: Is a promotion or a new role on your vision board? As you review your image, ask yourself: "Wouldn't it be nice to find more challenge at work?" Or perhaps you're dreaming about a new car. Positively talk to yourself: "Won't it be great when I have a dependable vehicle with all the bells and whistles?" Adding positive expectancy is about creating good feelings as much as it is about acquiring the object itself. When you're finished, click "I'm finished for now" to close out of the app.

Day 12: Take the next few minutes to practice mental imagery. Find a calm and comfortable place to sit or kneel. Quiet your mind. Open the app and review the digital images that represent your ideal future. If there is an important presentation, a critical exam, a competition, or a must-have conversation on the horizon, envision your successful performance. When you're finished, click "I'm finished for now" to close out of the app.

Day 13: You're more than halfway through the program, and I hope you are having an incredible journey. Remember to be kind to yourself. There is nothing about you that needs to be fixed. Spend a few minutes in the app reviewing your vision board and imagining how it will feel to accomplish your goals and aspirations. When you're finished, click "I'm finished for now" to close out.

Day 14: Remember, your internal dialogue is important. Your vision board may feel intimidating or overwhelming to construct. Recognize the helpful and not-so-helpful thoughts you have. Re-center your thinking so you can feel better and complete your board. When you're finished, click "I'm finished for now" to close out of the app.

Day 15: Ready to begin your imagery practice? Open the app and start thinking about the best of yourself. What strengths do you have that you can support others with or leverage for your own use? What could you do today that would bring you joy? Today, you are your own coach. What do you want to say to yourself? Ready? Set. Go!

When you're finished, click "I'm finished for now" to close out of the app.

Day 16: We find what we deliberately look for. Reflect on your current situations and relationships, then shift your attention to them in the ideal future state. What small steps can you take today to make progress? Spend a few minutes considering whether you should add an image to your vision board.

Day 17: Affirmations are positive statements that you speak to yourself. They are an important part of your self-talk. Positive self-talk, or affirmations, remind you that you are worthy of achieving your dreams. You can talk to yourself about any area of your life! Open your vision board in the app and spend a few minutes creating or repeating the affirmations that are personal to you. When you're finished, click "I'm finished for now" to close out of the app.

Day 18: Research tells us that looking at our vision board daily and focusing on the words and images will unconsciously help us make choices throughout the day that are consistent with our goals. Open the Flourishing at Work app, and get started! When you're finished, click "I'm finished for now" to close out.

Day 19: Update your vision board as often as needed. If you find that an image no longer depicts your aspirations, simply remove the image (and perhaps celebrate!). If you've been newly inspired, add a photo to your board that depicts your inspiration.

Day 20: Don't forget your imagery practice! Your images will likely remind you of things you currently have or do. Acknowledge what is already good in your life, and show gratitude for things that are yet to come. When you're finished, click "I'm finished for now" to close out of the app.

Day 21: Last day to look at the app! Can you believe our program ends today? No matter how you decided to use your images and affirmations, be sure to live in alignment with them. There's a good chance you'll want to share this journey with others. Although some of your images are personal, sharing the process and your experience benefits them and you. Remember, this is not about fixing yourself or others. It's about finding what makes you feel alive and sharing a life you create with those you love.

Thank you for participating. Tomorrow you will receive a questionnaire about your experience, and you could win a $100 gift card if you complete the survey. I wish you all the best as you continue to dream about the future and reach for your wildest dreams!

APPENDIX O – Study Conclusion Email to Treatment Group

Congratulations! You have completed the study, which explored the relationship between technology-assisted imagery and flourishing in a non-traditional work setting. It is now time to complete the second questionnaire, which takes just 2 minutes. As a reminder, **you could win a prize** for participating! Those of you who complete the survey **no later than August 31 at noon PT** will be entered into a drawing to win one of three $100 gift cards.

To complete the questionnaire, please visit https://s.surveyplanet.com/g1pouilb

Remember, all responses are de-identified, and all data is carefully stored and password protected. Once again, thank you for participating in this important research to help us all feel and work better as the modern workplace continues to evolve. I will message you via Slack if you are a gift card winner, and if you have any questions about this final questionnaire or are interested in the study's findings, please contact me. Thank you, and I wish you all the best in flourishing at work!

Wendi Lord
Slack: @wlord
Email: wendi.lord@usm.edu
Phone: 480-282-0530
IRB#: 22-409

REMINDER:
DEADLINE REMINDER! Thank you for completing a short, 2-minute survey. Don't forget **you could win a prize** for participating! Everyone who completes the survey **no later than today at noon PT** will be entered into a drawing to win a $100 gift card.

To complete the questionnaire, please visit https://s.surveyplanet.com/g1pouilb

IRB# 22-409

APPENDIX P – Study Conclusion Email to Control Group

Thank you for participating in my study! It's time to complete the second questionnaire, which takes just 2 minutes. As a reminder, **you could win a prize** for participating! Those of you who complete the survey **no later than August 31 at noon PT** will be entered into a drawing to win one of three $100 gift cards.

To complete the questionnaire, please visit https://s.surveyplanet.com/g1pouilb

Remember, all responses are de-identified, and all data is carefully stored and password protected. Once again, thank you for participating in this important research to help us all feel and work better as the modern workplace continues to evolve. I will message you via Slack if you are a gift card winner. You were part of a control group. If you have any questions about this final questionnaire or are interested in accessing the study's materials, findings, and conclusions, please contact me.

Thank you, and I wish you all the best in flourishing at work!

Wendi Lord
Slack: @wlord
Email: wendi.lord@usm.edu
Phone: 480-282-0530
IRB#: 22-409

REMINDER:

DEADLINE REMINDER! Thank you for completing a short, 2-minute survey. Don't forget you could win a prize for participating! Everyone who completes the survey **no later than today at noon PT** will be entered into a drawing to win a $100 gift card. To complete the questionnaire, please visit https://s.surveyplanet.com/g1pouilb
IRB# 22-409

APPENDIX Q – Code Book

Item	Variable	Type	Scale	Description	Values
-	SubjectID	Numeric	Scale	ID #	Sequential starting with 01001
1	Email	String	Nominal	Email address	
2	Group	Numeric	Nominal	Assignment	0=Control, 1=Treatment
3	Q1_EmotionalHealth_Pre	Numeric	Scale	Dimension 1	0=Not Satisfied at All, 10=Completely Satisfied
4	Q2_EmotionalHealth_Pre	Numeric	Scale	Dimension 1	0=Extremely Unhappy, 10=Extremely Happy
5	Q3_PhysicalHealth_Pre	Numeric	Scale	Dimension 2	0=Poor, 10=Excellent
6	Q4_PhysicalHealth_Pre	Numeric	Scale	Dimension 2	0=Poor, 10=Excellent
7	Q5_Meaning_Purpose_Pre	Numeric	Scale	Dimension 3	0=Not at All Worthwhile, 10=Completely worthwhile
8	Q6_Meaning_Purpose_Pre	Numeric	Scale	Dimension 3	0=Strongly Disagree, 10=Strongly Agree
9	Q7_CharacterStrengths_Pre	Numeric	Scale	Dimension 4	0=Not True of Me, 10=Completely True of Me
10	Q8_CharacterStrengths_Pre	Numeric	Scale	Dimension 4	0=Not True of Me, 10=Completely True of Me
11	Q9_SocialConnectedness_Pre	Numeric	Scale	Dimension 5	0=Strongly Disagree, 10=Strongly Agree
12	Q10_SocialConnectedness_Pre	Numeric	Scale	Dimension 5	0=Strongly Disagree, 10=Strongly Agree
13	Q11_FinancialSecurity_Pre	Numeric	Scale	Dimension 6	0=Worry All of the Time, 10=Do Not Ever Worry
14	Q12_FinancialSecurity_Pre	Numeric	Scale	Dimension 6	0=Worry All of the Time, 10=Do Not Ever Worry
15	FlourishingScore Pretest	Numeric	Scale	Sum Q1-12	0 to 120
16	Gender	String	Nominal	Gender	1=Male, 2=Female, 3=Non-binary
17	Age	Numeric	da	Age	1=20-29, 2=30-39, 3=40-49, 4=50-59, 5=60-69, 6=70+

18	Ethnicity	Numeric	Nominal	Ethnicity	0=White, 1=Hispanic or Latino, 2=Black or African American, 3=Native American, 4=Asian or Pacific Islander, 5=Other
19	EmploymentStatus	Numeric	Nominal	Employment Status	1=Full-time employee 2=Part-time employee 3=Full-time contractor 4=Part-time contractor
20	VocationalLevel	Numeric	Ordinal	Vocational Level	1= Non-manager, 2=Manager
21	EducationLevel	Numeric	Ordinal	Educational Level	0=Highschool, 1=Some College/Associate, 2=Bachelor's, 3=Master's, 4=Doctorate
22	Q1_EmotionalHealth_Post	Numeric	Scale	Dimension 1	0=Not Satisfied at All, 10=Completely Satisfied
23	Q2_EmotionalHealth_Post	Numeric	Scale	Dimension 1	0=Extremely Unhappy, 10=Extremely Happy
24	Q3_PhysicalHealth_Post	Numeric	Scale	Dimension 2	0=Poor, 10=Excellent
25	Q4_PhysicalHealth_Post	Numeric	Scale	Dimension 2	0=Poor, 10=Excellent
26	Q5_Meaning_Purpose_Post	Numeric	Scale	Dimension 3	0=Not at All Worthwhile, 10=Completely worthwhile
27	Q6_Meaning_Purpose_Post	Numeric	Scale	Dimension 3	0=Strongly Disagree, 10=Strongly Agree
28	Q7_CharacterStrengths_Post	Numeric	Scale	Dimension 4	0=Not True of Me, 10=Completely True of Me
29	Q8_CharacterStrengths_Post	Numeric	Scale	Dimension 4	0=Not True of Me, 10=Completely True of Me
30	Q9_SocialConnectedness_Post	Numeric	Scale	Dimension 5	0=Strongly Disagree, 10=Strongly Agree
31	Q10_SocialConnectedness_Post	Numeric	Scale	Dimension 5	0=Strongly Disagree, 10=Strongly Agree
32	Q11_FinancialSecurity_Post	Numeric	Scale	Dimension 6	0=Worry All of the Time, 10=Do Not Ever Worry

33	Q12_FinancialSecurity_Post	Numeric	Scale	Dimension 6	0=Worry All of the Time, 10=Do Not Ever Worry
34	FlourishingScore_Posttest	Numeric	Scale	Sum Q1-12	0 to 120
35	FlourishingScore_Change	Numeric	Scale	Posttest minus Pretest	0 to 120
36	PracticeTime_Minutes	Numeric	Scale	Sum of Minutes (seconds rounded to next minute)	
37	PracticeTime	Numeric	Nominal	0 minutes=No, >0 minutes= Yes	0=No 1=Yes

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