

**Empowering Creativity:
Harnessing the Potential of Industrial Design Students with ADHD**

by

Lilly Victoria Echeverri

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Approved by

Benjamin Bush, Chair, Associate Professor, Industrial Design
Rich Britnell, Professor, Industrial Design
Christopher Arnold, Associate Professor, Industrial Design
Dr. Leslie Cordie, Associate Professor, Educational Foundations, Leadership, and Technology

ABSTRACT

The purpose of this project is to leverage the college-aged individual with diagnosed ADHD to best find their niche procedure within the design process by utilizing strategic management solutions in the design curriculum. By the creation of a new adaptable design method—through the combining of existing design methodology— these students can leverage their confidence and gain insight into how to work with their ADHD abilities during the creative segment of the design process. They will also be able to better overcome average ADHD challenges such as ‘Time Blindness’ and ‘Task Paralysis’. The conceptualization of ADHD is still quite new, being only a little over 50+ years old as an accepted learning disability. Framing ADHD as a possible superpower in a creative field such as Industrial Design through this approach will assist in leveraging creativity, learning helpful self-management strategies, and allowing minds to flow within different design process modules. The primary approach is through task switching so one will be better equipped to work within a given time frame without abstraction by organizing their thoughts and applying their unique process to any design project within the Industrial Design classroom. Therefore, this project intends to bridge the gap between Industrial Design students with ADHD and Industrial Design methodology by creating a supplemental productive working routine before students with ADHD leave school for the workforce.

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TABLE OF CONTENTS

Abstract	2
Acknowledgements	3
Table of Contents	4
List of Figures	9
Chapter One	
1.1 Problem Statement	12
1.2 Need for Study	13
1.3 Objective of Study	15
1.4 Assumptions.....	16
1.5 Scope and Limits.....	17
1.6 Anticipated Outcomes.....	18
1.7 Definition of Terms.....	19
Chapter Two	
<i>Literature Review</i>	
2.1 Introduction.....	22
2.1.1 The Problem.....	23
2.2 History.....	24
2.2.1 Key Figures in ADHD	24
2.2.2 Themes and Trends within the Timeline	25
2.2.3 History of Design Education.....	25
2.2.3.1 Key Figures in Design Education	26

2.2.4	Connecting ADHD and Design Education	27
2.2.5	History of ADHD.....	27
2.2.5.1	History of ADHD: Policy and Legislation.....	28
2.2.5.2	History of ADHD: Policy and Legislation Today	28
2.3	ADHD.....	29
2.3.1	Types of ADHD.....	30
2.3.2	Common Challenges for a person with ADHD	31
2.3.2.1	ADHD Paralysis.....	31
2.3.2.1.1	Types of ADHD Paralysis	32
2.3.2.1.2	How to Overcome ADHD Paralysis	33
2.3.2.2	Time Blindness	35
2.3.2.3	Decision Fatigue	36
2.3.3	ADHD Advantages for the Designer	37
2.3.3.1	Creative Thinking	38
2.3.3.2	Hyperfocus	38
2.3.4	Self-Management Strategies	40
2.3.4.1	Gantt Chart.....	40
2.3.4.2	Time Blocking	41
2.3.4.3	Self-Reflection	42
2.3.4.4	Case Study on Gamification	43
2.4	Related Fields.....	44
2.4.1	Business Management Strategies.....	44
2.4.2	Empowering ADHD in the Workplace.....	46

2.4.3 How the Workplace Relates.....	47
2.5 Related Methods	49
2.5.1 Connecting Related Methods to the SDAD.....	49
2.5.2 Design Process Methods	50
2.5.2.1 The Double Diamond Method	51
2.5.2.2 The HCD Design Process by IDEO.....	53
2.5.2.3 The Six Phases of the IDEO Design Process.....	57
2.5.2.4 The Design Squiggle.....	58
2.5.2.5 The Pinball Machine Method.....	60
2.5.2.6 The Helix	62
2.6 Literature Review Conclusion	65
2.6.1 Key Points.....	65
2.6.2 The Gap.....	65
2.6.3 Conclusion	66

Chapter Three

The Spiral Staircase Approach

3.1 Introduction.....	67
3.2 The Spiral Staircase Approach.....	68
3.3 Synthesizing the Strategies	71
3.3.1 How this relates to the Double Diamond Method	71
3.4 Navigating the Spiral Staircase Approach	73
3.5 Overview of the 12 Steps	75
3.5.2 A Detailed Description of the Four Main Stages.....	77

3.5.2.1 Discover: Stage 1	79
3.5.2.2 Define: Stage 2.....	82
3.5.2.3 Design: Stage 3	84
3.5.2.4 Deliver: Stage 4.....	85
3.6 Integration of ADHD Checkpoints	87
3.6.1 ADHD Checkpoint 1: Time Management	88
3.6.2 ADHD Checkpoint 2: Analysis Paralysis	89
3.6.3 ADHD Checkpoint 3: Self-Reflection	90
3.7 Spiral Staircase Approach Conclusions	91

Chapter Four

Practical Design Application

4.1 Introduction.....	92
4.1.1 Validation of the Hypothetical Applications	92
4.2 Overview of Personas	93
4.3 Project Brief	94
4.4 Persona Case 1: Ava	96
4.4.1 Initial Challenges	98
4.4.2 Application of the SPR.S.A	99
4.4.2.1 Scenario 1: Ava’s Time Management Application.....	100
4.4.2.2 Scenario 2: Analysis Paralysis in Stage 2	106
4.4.2.2.1 Worksheet Application: Ideation	104
4.4.2.3 Scenario 3: Ava’s Self-Reflection	113
4.5 Persona Case 2: Ethan.....	119

4.5.1 Initial Challenges	120
4.5.2 Application of the SPR.S.A	121
4.5.2.1 Scenario 1: Ethan’s Time Management Application	122
4.4.2.1.1 Worksheet Application: Rapid Ideation.....	126
4.5.2.2 Scenario 2: Analysis Paralysis in Stage 2	130
4.5.2.2.1 Worksheet Application: Research.....	130
4.5.2.3 Scenario 3: Analysis Paralysis in Stage 4	138
4.5.2.3.1 Worksheet Application: Refine.....	139
4.5.2.4 Scenario 3: Self-Reflection	151
4.6 Comparative Analysis of Personae	159
4.7 Reflections on Effectiveness	160
4.8 Conclusion of Practical Applications.....	160
Chapter Five	
<i>Conclusion</i>	
5.1 Summary of the Spiral Staircase Approach	162
5.2 Rationale for the SPR.S.A	163
5.3 Implications of the Approach.....	164
5.4 Limitations of the Approach	165
5.5 Suggestions for Future Research	165
5.6 Final Conclusion	166
References	168
Appendix	17

LIST OF FIGURES

Figure 1: Historical Timeline of ADHD.....	24
Figure 2: Double Diamond Method.....	51
Figure 3: HCD Design Process by IDEO I.....	54
Figure 4: HCD Design Process by IDEO II.....	55
Figure 5: The Six Phases of the IDEO Design Process	57
Figure 6: The Process of The Design Squiggle by Damien Newman	59
Figure 7: “My Design Squiggle” by Shubhangi Choudhary	60
Figure 8: The Pinball Machine Method.....	61
Figure 9: The Helix.....	63
Figure 10: The Spiral Staircase Approach	70
Figure 11: Reconstructed Double Diamond Method for the SPR.S.A	72
Figure 12: Top View of Spiral Staircase Approach: The 12 Steps Defined	76
Figure 13: Top View of Spiral Staircase Approach: The 4 Stages Defined	78
Figure 14: Top View of Spiral Staircase Approach Template.....	79
Figure 15: Top View of Spiral Staircase Approach: Stage 1: Discover	80
Figure 16: Top View of Spiral Staircase Approach: Stage 2: Define.....	82
Figure 17: Top View of Spiral Staircase Approach: Stage 3: Design	84
Figure 18: Top View of Spiral Staircase Approach: Stage 4: Deliver.....	86
Figure 19: Hypothetical Logo for Pivot & Pickle Sports Inc	95
Figure 20: Picture of Ava.....	97
Figure 21: Ava’s Personal Design Process through the use of the SPR.S.A	99
Figure 22: Ava’s Time Management Worksheet 1	101

Figure 23: Ava’s Time Management Worksheet 2 – Time Block	103
Figure 24: Ava’s Analysis Paralysis Worksheet 1	106
Figure 25: Ava’s Analysis Paralysis Worksheet 2	108
Figure 26: Ava’s Analysis Paralysis Worksheet 3.....	110
Figure 27: Ava’s Analysis Paralysis Worksheet 4.....	112
Figure 28: Ava’s Self-Reflection Worksheet 1.....	114
Figure 29: Ava’s Self-Reflection Worksheet 2.....	115
Figure 30: Ava’s Self-Reflection Worksheet 3.....	117
Figure 31: Ava’s Self-Reflection Worksheet 4.....	118
Figure 32: Ethan’s Personal Design Process through the use of the SPR.S.A	121
Figure 33: Ethan’s Time Management Worksheet 1.1	124
Figure 34: Ethan’s Time Management Worksheet 1.2	125
Figure 35: Ethan’s Analysis Paralysis Worksheet 1.3	127
Figure 36: Ethan’s Analysis Paralysis Worksheet 1.4	129
Figure 37: Ethan’s Analysis Paralysis Worksheet 1.1	131
Figure 38: Ethan’s Analysis Paralysis Worksheet 1.2	133
Figure 39: Ethan’s Time Management Worksheet 2.1	135
Figure 40: Ethan’s Time Management Worksheet 2.2	137
Figure 41: Ethan’s Analysis Paralysis Worksheet 2.1	140
Figure 42: Ethan’s Analysis Paralysis Worksheet 2.2	142
Figure 43: Ethan’s Analysis Paralysis Worksheet 2.3	144
Figure 44: Ethan’s Analysis Paralysis Worksheet 2.4	145
Figure 45: Ethan’s Time Management Worksheet 3.1	148

Figure 46: Ethan's Time Management Worksheet 3.2	150
Figure 47: Ethan's Self-Reflection Worksheet 1	152
Figure 48: Ethan's Self-Reflection Worksheet 2	154
Figure 49: Ethan's Self-Reflection Worksheet 3	156
Figure 50: Ethan's Self-Reflection Worksheet 4	158

1.1 PROBLEM STATEMENT

Throughout the history of education, neurodivergence has had a negative connotation. Therefore, neglecting students with neurodivergence that would make them successful given their unique set of traits in an educational environment. There are ways to work with symptoms of ADHD and thinking processes to enhance their design thinking and work-life balance. Students with diagnosed ADHD in design frequently go unnoticed while struggling to find their way through the design process due to common ADHD behavioral impacts. Entering the college classroom from standardized school systems, a student will have been taught many different methods of studying and memorizing for tests and projects. When they enter the Industrial Design classroom, they will be taught methods and management for the general design process. Because of the gap between the average design process and industrial design student with ADHD, the opportunity to bridge self-management skills in the average college-aged industrial design classroom presents itself. What a design student with ADHD may not be properly taught, is how to go about the management of their personalized design process that are specific for the diagnosed ADHD student. When these students exit the college studio and enter the corporate work environments they will be faced with team and time management demands, skills that they have not yet honed to fit their personal superpowers that come with having ADHD. By looking at the already existing design methods that cater to design thinking and applying how the ADHD mind works, it becomes evident of said gap between how a neurodivergent designer thinks through the design process versus a student designer without ADHD.

1.2 NEED FOR STUDY

To justify this study, an opportunity found within the research has been identified as to the concept of exploration within design education, ADHD education, and ADHD in Design correlations, but so far there is neglect in the examination of how design education can benefit ADHD students. A similar opportunity in how ADHD students in design classrooms can best assert authority and power back into the design process by leveraging their neurodivergent thoughts and behavioral patterns throughout the design process. There is a need to study this subject as there are growing statistics on the number of college students diagnosed with ADHD. According to The National Library of Medicine, “It is estimated that approximately 25 % of college students receiving disabilities services are diagnosed with ADHD, and this percentage is on the rise...It has been estimated that between 2 and 8 % of college students in the United States (U.S.) have ADHD” (Green & Rabiner, 2012, para. 1). A more recent reading stated, “The population of college students with ADHD has increased substantially in the past 20 years — from roughly 2 percent of the student body to about 11.6 percent. In other words, roughly 1 in 9 college students today has an ADHD diagnosis” (Antshel et al., 2023, para. 4). These compelling numbers create the need for further research especially because, “Unfortunately, between 32% and 35% of ADHD teens will drop out of [high]school before graduation...according to a study by Joshua Breslau for the Journal of Psychiatric Research” (Joshua Breslau, 2010, as cited in Cooney, 2020, How Students Are Affected section para. 6). Auburn has great groundwork behind ADHD as there are many college professors with an interest in Educational Psychology who have dedicated research to the very subject of ADHD in education. They also have many

resources for students to succeed in the classroom through providing accommodations and psychiatric evaluations. However, “While college disability services are one solution, only a minority of college students with ADHD seek these services” (Antshel et al., 2023, College Students with ADHD: Conclusions section), says a recent article on the improvement of outcomes for college students with ADHD. Efforts should be made to inspire confidence in design students with an ADHD diagnosis.

1.3 OBJECTIVE OF STUDY

The objective of the study is to develop a tool that will empower students with ADHD to discover where they excel at different stages of the design process and when to recognize unhelpful patterns to be able to efficiently move through a given project in a time sufficient manner. This is to be accomplished by synthesizing four different study areas, ADHD, Management, Education, and Design Thinking, to identify where a person with ADHD struggles and where they excel within the design process while in a collegiate learning environment. The goal would be to develop a tool and approach for student designers with ADHD to be able to form their own understanding of their needs and abilities when compiling their project timeline. In addition, these students would know how to better prepare for the semester and syllabus and to grow inclusivity in the college-aged classroom by allowing them to understand what they need to ask for from the Professor. The student would know how to start that conversation and recognize when they become stuck, not moving forward, and overall find themselves in a never-ending loop of failure when attempting a design project. This thesis should reinforce and leverage a student's thinking by the self-evaluation and training of their own thoughts and abilities such as creativity and time management. The question this thesis begins with is, if the process is a linear process, how many times can a designer go back and restart before it impacts their daily and work life? How can a student with ADHD work with their ADHD instead of against it?

1.4 ASSUMPTIONS

There are significant roadblocks that come with having a learning disability. However, every person is capable of learning and growing at any stage and age. One can learn anything one puts their mind to, and one can continue to learn throughout their lifetime. Collegiate design education is an important steppingstone for designers discovering how to leverage themselves in the Design field. Every person is capable of overcoming adversity in the learning environment. Specifically, students with ADHD experience adversities particular to their diagnosis. This thesis addresses Student Industrial Designers, assuming they are diagnosed with ADHD, self-diagnosed ADHD, or have ADHD traits and are looking for support. By advocating for a particular kind of inclusivity, the assumption will be that I will model the new Spiral Staircase Approach in my language and perspective. It is assumed that the readers are not seeking medical advice and are choosing their own decisions about their personal ADHD diagnosis or traits. Only the individual with ADHD or self-diagnosed ADHD traits, however it may present itself, can identify how they experience their own neurodivergence. This thesis is not and cannot tell any one person how to best go about incorporating their unique traits and skills into a neurotypical expected world. But instead, is only one of many approaches to break through specific common challenges someone with ADHD may face in the Design Process through validation of existing strategies and methods. “The main obstacle to understanding and managing ADHD has been the unstated and incorrect assumption that individuals with ADHD could and should be like the rest of us“ (Dodson, 2024, para 6).

1.5 SCOPE & LIMITATIONS

The scope of this thesis will include researching the following subjects: (A) Industrial Design Process and Methods (B) Collegiate Design Education (D) Self-Regulation Strategies for ADHD (E) ADHD and Design Correlations (F) Time Management Strategies. These subjects will be researched on their history and their relativity to each other, with a focus on college-aged students in Industrial Design. There will be research on the design process along with common time management strategies that could be implemented into this approach for the average student with diagnosed ADHD. The limits include no primary research or conducted surveys, only a collection of data through former case studies including college students and adults. This thesis will not cover ADHD medication or pharmaceuticals but only self-regulation options and learned behavioral traits. Only a person with diagnosed ADHD knows which medication is right for them and should not use this thesis to decipher medical decisions as it will not be discussed within this scope of research.

1.6 ANTICIPATED OUTCOMES

With the creation of this thesis, the anticipated outcome will deliver novel positive workflow approaches to the design education community. There will be one more positive push into the world where ADHD, a learning disability, will have a positive light shed on the strengths of these students and how they can use these strengths in their chosen design careers. This project allows self-improvement where having ADHD might hinder a student –rather than help– in the design classroom. This will empower students with ADHD to realize their ability to learn and grow. Students will have the ability to hone their skills within the industrial design process with a mindset of “I can do anything I put my mind to” rather than “I was already born with the gene that I can't do it.” The tool developed in this thesis is meant to be intertwined into the semester by using self-regulation management methods right into the collegiate design classroom. This approach should support design students with ADHD but should also be able to be used by those without ADHD as well seeking to better organize and narrow down a design process that works for them.

1.7 DEFINITION OF TERMS

1. ADHD – abbreviation: attention deficit hyperactivity disorder (Merriam, 2023)
2. ADD – abbreviation: attention deficit disorder. (Merriam, 2023)
3. Bauhaus – adjective: of, relating to, or influenced by a school of design noted especially for a program that synthesized technology, craftsmanship, and design aesthetics. (Merriam, 2023)
4. Behavioral Therapy – noun: psychotherapy that is concerned with the treatment (as by desensitization or aversion therapy) of observable behaviors rather than underlying psychological processes and that applies principles of learning to substitute desirable responses and behavior patterns for undesirable ones (such as phobias or obsessions). (Merriam, 2023)
5. CAD – abbreviation: Computer-Aided Design
6. Craft – noun: an occupation, trade, or activity requiring manual dexterity or artistic skill. (Merriam, 2023)
7. Curriculum – noun: a set of courses constituting an area of specialization. (Merriam, 2023)
8. Design Process – a method used to be more creative, productive, and accurate. (Design Process, 2018)
9. DSM – abbreviation: Diagnostic and Statistical Manual of Mental Disorders (Merriam, 2023)

10. Gamification – noun: the process of adding games or game like elements to something (such as a task) to encourage participation. (Merriam, 2023)
11. Hyperactivity – noun: increased levels of function or activity especially when considered abnormally excessive. (Merriam, 2023)
12. Impulse Control – refers to the difficulty some people have in stopping themselves from engaging in certain behaviors. (Cherney, 2020)
13. Industrial Design – noun: design concerned with the appearance of three-dimensional machine-made products. (Merriam, 2023)
14. Mental Processing Speed – encompasses all the things that the human mind can do naturally. Common mental processes include memory, emotion, perception, imagination, thinking, and reasoning. (Interaction Design, 2023)
15. Neurodiversity – noun: individual differences in brain functioning regarded as normal variations within the human population; the concept that differences in brain functioning within the human population are normal and that brain functioning that is not neurotypical should not be stigmatized. (Merriam, 2023)
16. Neurotypical – adjective: not affected with a developmental disorder and especially autism spectrum disorder: exhibiting or characteristic of typical neurological development. (Merriam, 2023)
17. Prototyping – noun: a first full-scale and usually functional form of a new type or design of construction (such as an airplane.) (Merriam, 2023)
18. Student Designer with ADHD (SDAD) – An acronym to shorten the description for a Student Industrial Designer with ADHD.

19. Industrial Design Creative Process (I.D.C.P) – An acronym to describe the process for an Industrial designer that includes breaking down creativity into structured steps to completion.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

“Everyone is smart in different ways. But if you judge a fish on its ability to climb a tree, it will spend its whole life thinking that it’s stupid” (Hunt, 2017, p. 84). This famous quote by Lynda Hunt in their book, *Fish in a Tree*, depicts how skill sets are far too diverse and unique for a standardized assessment approach that assumes a narrow range of normal ability.

This literature review is meant to offer new perspectives on ADHD and the effects it can have on an Industrial Design Student who has ADHD. As they perform the design process. Student Designers with ADHD (SDAD) may experience specific challenges and benefits to having ADHD in the educational design environment. Unique characteristics of ADHD can present itself in an individual’s self-management or their creative thought patterns. By incorporating several self-management strategies regularly used in corporations and education, one can begin to identify which steps can be applicable in the Industrial Design Creative Process.

Within a successful corporation, maximizing efficiency is vital; therefore, a strong relationship between skillsets and tasks is essential. Analyzing self-management and ADHD-learned behavioral traits helps to indicate this theory and fill the gap between ADHD Education and Design Education. This thesis discusses approaches and strategies to view ADHD as a strength in Industrial Design with the correct self-management processes.

This literature review provides a historical timeline of relevant individuals, places, and theories that helped synthesize and document the concepts of design education and general

knowledge of ADHD, beginning with where the concept of this condition began before having a significant impact on the education world or an official name.

Related fields such as self-management techniques for students with ADHD and design methodology, have both played a part in humans interacting with other humans throughout both college-aged classrooms and the workplace. These strategies have the potential to be paralleled in the classroom to fit more than one need for the individual student.

There is an opportunity to bridge what students with ADHD and Professional Designers are collectively striving to accomplish in their daily respective pursuits including organization, mindfulness, time management, and creativity. Recommendations on how to fill those gaps and gain insight into becoming a well-rounded organized designer for the individual student will be included in an approach to the structure proposed in this thesis.

2.1.1 The Problem

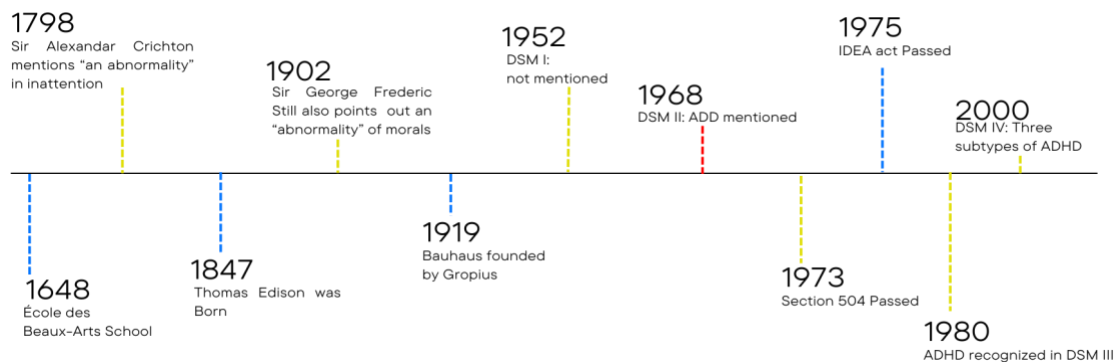
Even though ADHD in the classroom has become increasingly recognized with time, it is still seen as a weakness or as an “academic learning disability.” However, there are many opportunities during the design process when creating a conceptual product that allows students with diagnosed ADHD and ADHD tendencies to utilize their strengths in ways other students cannot. There is also an opportunity to work—not against but with—ADHD symptoms when tackling the Design Process. How does the corporate world already address this through self-management strategies when working with all types of people and timelines? By acknowledging symptoms that may not be seen as strengths and are frustrating to the average ADHD Design Student, such as poor time management, one can start incorporating their own process and access relief in areas where they may normally experience insecurity.

2.2 History

Notably, there is some history between the connection of ADHD and design education that may shed better light on how the two correlate through the ages, in part because, ADHD was not recognized as a mental disability until the 1980s. Below is a timeline to use as a reference throughout this section of the literature review and to gain a better perspective on the dates of these subjects throughout the last few centuries.

Figure 1

Historical Timeline of ADHD



Note. Timeline ranging from 1648 to 2000 includes significant years for growth of ADHD.

(Adapted from Lange, 2010. et al.)

2.2.2 Key Figures in ADHD.

Within the timeline, precursors to what we know as ADHD today occurred in 1798 when Sir Alexander Crichton noticed and distinguished two different abnormal inattention (Crichton, 1798, as cited in Lange, 2010) and then in 1902 when Sir George Frederic Still was the first to mention the possibility that there was, “an abnormal defect of moral control in children” (Masters, 2021, para. 4). Crichton stated that “if there is an incapacity [of attention] with the

necessary degree of constancy to one object [or subject] and how that arises from an ‘unnatural or morbid’ nerve sensibility that is born with that person or an effect from past diseases. He also goes on to state that this abnormality diminishes with age and that it is fortunate because this inability to focus will make that person incapable of paying attention consistently to “any one object of education” (Crichton, 1798, as cited in Lange, 2010). These two early influential figures played an important role in stigmatizing what later became known as ADHD.

2.2.3 Themes and Trends within the Timeline

There are some intriguing dates within the 20th century that allude to the fact that the average person still was ignorant to some of the better-found discoveries and advances in mental medicine. One important omission is that the first edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) failed to include ADHD in 1952 (Holland, 2024). But with this in mind, the actual recognition of ADHD did not come about until 1980 (Holland, 2024).

2.2.4 History of Design Education

This section reviews the history of Design Education and some influential places where it started. The first school of art would be the École des Beaux-Arts. The École des Beaux-Arts was established in Paris in 1648 as one of the first Art schools with a curriculum including teaching classical art such as the works and techniques of Ancient Greece and Rome. Subjects within the school focused on anatomy, geometry, and perspective. This exhibits the grasp designers had on the way perspective and geometry interacted with the human body within human-centered design during the 1600’s. The École des Beaux-Arts School became the basic

model for any [and all] art schools for around four centuries until Bauhaus was founded in the 1900s (Tate, n.d.).

2.2.4.1 Key Figures in Design Education

The founder of Bauhaus was Walter Gropius, a German architect and designer who lived from 1883-1969 (Winton, 2016). Gropius was the head of Kunstgewerbeschule, which was a vocational art school that was previously headed by his friend Henry Van de Velde. Gropius then advanced the vocational art school into what we know now as Bauhaus in 1919. He was the director of Bauhaus from 1919 to 1928 and even designed the facility for Bauhaus in 1925 (Gorman, 2003).

The formal head of Kunstgewerbeschule and colleague of Gropius—Henry Van de Velde—said, “New results can be obtained by using means and materials which are as old as the hills.” (Henry van de Velde, 1897, as cited in Gorman, 2003, p. 48). Today, one can still recognize many methods and approaches that were implemented to be used in industrial design curricula. The instruction at Bauhaus held up their own specific range of principles. These included supporting practical, scientific creative individuals such as architecture students, sculpting students, and painters (Gorman, 2003).

Bauhaus was a workshop-based education system, and the goal of Bauhaus was “to educate architects, painters, and sculptors of all levels, according to their capabilities (Gorman, 2003). These education curriculum points were implemented by Bauhaus. As Gropius said, “The manner of teaching arises from the character of the workshop: Avoidance of rigidity; priority of creativity; freedom of individuality, but strict study discipline. (Original author, year, as cited in

Gorman, 2003). One might start to see why the ADHD individual whether knowledgeable or not of their condition would naturally gravitate to curriculums such as this.

2.2.5 Connecting ADHD and Design Education

Connecting design education to ADHD, another notable figure to highlight would be Thomas Edison. “Thomas Edison...is mentioned more often than any other historical figure for exhibiting classic ADHD behavior,” (Burgess, 2012, para. 2). One reason to point Edison out would be that there seem to be many accounts where people believe he may have had undiagnosed ADHD, a diagnosis that was not even conceptualized at this time. He had been expelled from his school for tendencies that would now likely be simply diagnosed with ADHD (Hartmann, 2005), or, as other articles put it, he “would have been put on Ritalin” (Burgess, 2012, para. 1). Today Edison would have been protected under ADA laws and regulations that protect neurodivergent students, which will be discussed later in this literature review (see Section 2.2.6.2). This is significant as even though Thomas Edison seems to have struggled with ADHD, he still became known as one of our greatest inventors with 1093 patents (Josephson & Conot, 2024). This connection supports the theory that expanded creativity is one strength that should be utilized and harnessed in students of design with ADHD.

2.2.6 History Of ADHD

The History of ADHD and the current policies that regard the protection of students with neurodivergence should be first discussed to gain a better understanding of the positive and negative perspectives on ADHD. ADHD stands for Attention-Deficit/Hyperactivity-Disorder (Elmaghraby & Garayalde, 2022, para. 1) Symptoms include not being able to focus, excess

movement that does not fit the setting, and impulsivity. There are lots of other signs and symptoms that could point to a student having ADHD that has fluctuated throughout the years, but one consistent indicator would be exceeding creativity (Stolte et al., 2022). Finding the right name to give to those who exhibit these symptoms took until the 1980's (Holland, 2024).

2.2.6.1 History of ADHD: Policy and Legislation

The Diagnostic and Statistical Manual of Mental Disorders (DSM) came out with its first edition in 1952 and did not mention or recognize ADHD as a mental disorder (Masters, 2021) By 1968 DSM II was published and included a condition said to be a “hyperkinetic reaction of childhood (Masters, 2021). Finally in 1980 DSM III coined ADD leaving out hyperactivity as a mental disorder and then when revised in 1982 ADHD was fully recognized as a disorder. Since then, there have been additions to how there are even three subtypes of ADHD according to the DSM IV. This is significant as the DSM is what doctors and psychologists still use today to diagnose mental health and brain-related conditions.

2.2.6.2 History of ADHD: Policy and Legislation Today

Today there are certain policies and legislation to help protect students in the classroom who are neurodivergent, policies such as Section 504 of the Rehabilitation Act of 1973 and the Individuals with Disabilities Education Act (IDEA) of 1975 which is under Federal Law. Section 504 states, “Children covered under Section 504 are usually children with less serious disabilities, or children who do not otherwise qualify for services under IDEA but still have a disability that is substantially limiting in the educational setting” (CHADD, 2020, p. 2). The IDEA –passed by President Gerald Ford in 1975– is “When a child with ADHD qualifies under

IDEA, the child receives an Individualized Education Program (IEP). The IEP is a written document that includes specific goals for the child based on the child's current level of performance.” (CHADD, 2020, p. 4). There is a plan implemented in Section 504 for educators to follow in the classroom when they encounter students with ADHD who require these accommodations to be made. These accommodations include:

- Reducing the amount of homework without reducing difficulty.
- Giving the student a quiet place to work free from distractions.
- Providing clear and simple directions for homework and assignments.
- Giving extra time, modifying, and breaking down tests into smaller sections.
- Using audio recordings for providing notes.
- Using positive behavioral intervention techniques (positive reinforcement).
- Having a nurse monitor/oversee student's medication administration.
- Meeting with the school counselor to work on academic and/or behavior challenges.
- Having a “communication notebook” for parents and teachers to stay informed on student's progress or difficulties.

2.3 ADHD

It is vital that designers who might find support tools, such as the one proposed in this thesis, understand that ADHD includes symptoms that may be frustrating as well as helpful in a learning environment. In this section one can find a deeper examination on: (1) What ADHD is, (2) types, (3) common challenges, and (4) possible advantages ADHD could hold in the Design College Environment.

2.3.1 Types of ADHD

According to the *Physician's Review* by Dr. Rana Elmaghraby and Dr. Stephanie Garayalde (2022), “There are three main types of ADHD: (1) Predominantly inattentive presentation, (2) Predominantly hyperactive/impulsive presentation, and (3) Combined Presentation” (para. 4). To optimize the tool for students, it is helpful to fully understand their diagnosed subtype of ADHD.

The Inattentive Type will have more common symptoms such as, not being able to pay close attention or make careless mistakes while performing tasks at school or within a job. They may have an issue with organizing tasks and [managing] their time poorly, therefore missing deadlines (Elmaghraby & Garayalde, 2022).

The Hyperactive/Impulsive Type, “refers to excessive movement such as fidgeting, excessive energy, not sitting still, and being talkative,” (Elmaghraby & Garayalde, 2022, para. 6). They are also known for, “[Blurring] out an answer before a question has been finished,” (Elmaghraby & Garayalde, 2022, para. 6). A more inclusive way to say this is they cannot wait to get their next thought or idea out of their head.

The Combined type is simply the two—inattentive and hyperactive types—together. Showing signs of both types will most likely result with this type of ADHD. This is a fairly common subtype as, “62% of adults had the combined subtype [out of 107 adult outpatients with ADHD of both sexes,” (Wilens et al., 2009, Abstract)

Referencing the three main types of ADHD could correlate to how a student goes about using the developed design tool in Chapter 3. Considering this thesis focuses on classroom and task paralysis the main two types that will benefit from the Spiral Staircase Approach will be the 'Predominantly inattentive presentation' and 'Combined

presentation.' Subtypes. The 'Impulsive presentation' type may mean those with that subtype may be well-suited for Industrial Design's creative free space.

2.3.2 Common Challenges to having ADHD

To better overcome challenges of ADHD that could be hindering to the common Industrial Design student, one should first comprehend them. By discussing symptoms such as (1) ADHD Paralysis (2) Time Blindness and (3) Decision Fatigue one can start to identify where SDAD will need more guidance to create a better focused atmosphere and personal process when moving through a design project. What are these three symptoms, what are their types, and what are the strategies already available to the person with ADHD to help work through their specific encounter with ADHD symptoms?

2.3.2.1 ADHD Paralysis

ADHD paralysis is when the brain freeze[s] and the person “becomes completely stuck, unable to make a choice, complete a task, or do anything at all,” (Ives, 2024, para. 1). It comes because instead of seeing choices in a linear pattern their mind is like a web of decisions and all the different possibilities are calculated in real time. Laurel Ives provides a quote from Dr. Helen Read that states:

I've seen somebody I know with ADHD standing in the garden like a statue for ages, unable to go to work. Their brain is thinking through all the different choices and possibilities and consequences of a certain action, and because of that they're just not starting what they need to do (Dr. Helen Read, as cited in Ives, 2024, para. 3).

The academic journal goes on to mention how, “ADHD paralysis can also be brought on by stressful work environments” (Ives, 2024, para.11). There is also the difference of the physical ADHD brain as Professor Cortese explains:

Individual areas of the brain are different in people with ADHD in terms of size and function, but also there is a difference in connectivity. The frontal lobe, or executive network, allows us to plan and select the right choice. The default mode is more focused on daydreaming and introspection. With ADHD it seems like the default mode network interferes with the functioning of the executive network, distracting it from fulfilling a task (Cortese, as cited in Ives, 2024, para. 10).

By calling attention to as to why one cannot simply “keep going” will directly impact how well one’s efficiency is in their everyday tasks– including school and work-related tasks. These challenges show that there is an actual reason for a person with ADHD’s inability to work in a linear plan, a feature that is often seen as a detriment rather than simply how their brain works.

2.3.2.1.1 Types of ADHD Paralysis

There are a few different types of ADHD paralysis including: (1) Mental Paralysis (2) Task Paralysis and (3) Choice Paralysis (Ives, 2024). Choice paralysis will be helpful to analyze now –as decision fatigue will become an important note later– in Chapter 3’s design process model.

ADHD Mental Paralysis, “occurs when a person is overwhelmed with thoughts, emotions, and information, or experiences sensory overload,” (Team, A. E., 2024, para. 4). This type of ADHD paralysis can affect a person’s ability to organize their thoughts

and makes it more challenging to deliberate what they should do next (Team, A. E., 2024). In design this could become a hinderance when trying to decide what step to take next to properly advance their project within their project timeline.

ADHD Task paralysis can become about when a person has a lot of ‘tasks’ to achieve and not much motivation to do them. “When something needs to be done, the more recently evolved part of your brain establishes how important that task is. But if you have lower levels of dopamine, like many people with ADHD, something has to be labelled as much more important for them to get going and do it,” (Dr. Smith, as cited in Ives, 2024, para. 3). This is why the ADDA Editorial Team includes, “[keeping] things interesting,” in their list of “8 Strategies to Get Back in Motion,” (Team, A. E., 2024, para. 8).

ADHD choice paralysis may be the paralysis experienced commonly by designers with ADHD. Being that “it might involve something big, like making a work decision on how to move a project forward,” (Team, A. E., 2024, para. 5). Design projects are not only big, but also are made up of many smaller tasks. “Similarly, when faced with a choice or decision, people with ADHD may find it hard to [prioritize] or choose and end up overthinking the situation and doing nothing,” (Ives, 2024, para. 15). SDAD may end up in a frustrating cycle of being unable to start or needing to start their project over and over again, without making measurable progress toward their design goals.

2.3.2.1.2 How to Overcome ADHD Paralysis

In the article, “ADHD paralysis: Causes, symptom and treatment;” the author, Laurel Ives (2024), synthesizes a list of ways to overcome ADHD paralysis that includes

non-medical learned behavioral traits that could prove useful to the SDAD who experiences ADHD Paralysis (Team, A. E., 2024). The list includes:

1. Write everything down
2. Structure and plan in advance for writing tasks
3. Focus on small easy wins and rewards
4. Enjoy [socializing], but schedule regular downtime for decision-making
5. Try the Pomodoro Technique
6. Take regular movement breaks
7. Try cognitive [behavioral] therapy (CBT)

The ADDA editorial team compiles a similar list that intertwines with these same strategies they name the “8 Strategies to Get Back in Motion,” (Team, 2024, para. 8) mentioned earlier in Section 2.3.2.1.1. Their list includes:

1. The Daily brain dump
2. [Making] tasks achievable (easy wins)
3. [Keeping] your work schedule simple
4. Focus on completion, not perfection
5. [Making] room for rewards
6. [Getting] up and [moving]
7. [Keeping] things interesting

Between these two lists one can already see overlap in research and the idea that there are more options to try before giving up. The overlapping suggestions are the brain dump, rewards, and physically moving around. With these two resources, the SDAD can begin to figure out the best methods that work for them when faced with ADHD Paralysis.

2.3.2.2 Time Blindness

There have been studies on students with ADHD's ability to sense time differently than those without ADHD. However, time blindness is seen as a negative attribute that can lead to negative outcomes such as being late to school or work.

“Research suggests that students with ADHD have executive functioning difficulties and deficits in their abilities to conceptualize time. The conceptualization of time deficits was coined by Barkley (2008) as “time blindness.” (Barkley, 2008, as cited in Bennett, A. L., Jr., 2018). This can be especially difficult for College Students who average a 15-week semester.

For college students with LD/ADHD, difficulties with planning and managing academically related time are compounded by slower learning and slower production of academic work. These students must work longer and harder than their peers in order to compensate, which makes skills and strategies used for managing time and productivity critical to college success (Kreider et al., 2019, p. 2).

For this reason, it is beneficial for a student to take time before beginning a project to organize their time in a way that works for them.

Time Optimism is a different definition used by Dr. George Sachs that explains how individuals with ADHD may experience, "difficulties in prioritizing and estimating time" (PsyD, 2024 para. 1). To better manage time as an individual with ADHD one should try: (1) Dividing large task into smaller steps, (2) using Visual Aids and timers, (3)

Prioritizing Tasks and delegate, when necessary, which fosters overall teamwork (PsyD, 2024).

2.3.2.3 Decision Fatigue

Decision Fatigue is described by Dr. MacLean as the concept that, “After making many decisions, your ability to make more and more decisions over the course of a day becomes worse,”(Dr. MacLean, as cited in Berg, 2021). Similarly, an article in the National Library of Medicine claims decision fatigue is, “the impaired ability to make decisions and control behavior as a consequence of repeated acts of decision-making.” (Pignatiello et al., 2020, p. 1). The authors of this article also, “[identify] three antecedent themes (decisional, self-regulatory, and situational) and three attributional themes (behavioral, cognitive, and physiological) of decision fatigue,” (Pignatiello et al., 2020, p.1). These two articles illustrate the connection, shown in other research as well, between ADHD and Decision Fatigue. While all individuals may experience decision fatigue, it is most prevalent in those who show traits of ADHD. Green and Romanoff (2022) wrote “For people with ADHD, on the other hand, decision fatigue can become a near-constant state, even on days when they aren’t making any especially tough decisions.” They also describe the symptoms of decision fatigue as:

1. Difficulty thinking clearly or staying focused on the decision
2. Feeling easily overwhelmed
3. Headaches, upset stomach, and other physiological symptoms of stress.
4. Irritability, frustration, and short temper
5. Dissatisfaction with all available choices

These are important to identify as one begins to better self-regulate by understanding why they may feel as though they can't make further decisions or are stuck in analysis paralysis. Because "in that stressed and tired state, you're liable to make impulsive, short-sighted decisions—or you might procrastinate and avoid making a decision. Some might find themselves paralyzed with indecision, unable to make any choice at all." (Green, 2022, para. 8).

Some strategies to manage decision fatigue were explained by Ascher and Ascher (2024), who write out these three strategies to decrease the mental load: (1) Simplify, (2) Routinize, and (3) Prioritize Rest. (Ascher et al., 2024). By doing these three things one can reduce the symptoms of decision fatigue and improve efficiency, well-being, and productivity.

2.3.3 ADHD Advantages for the Designer

One of the most widely used design methodologies in Industrial Design is the Double Diamond, which uses both convergent and divergent thinking. This is both an opportunity and a challenge for SDAD. As Stolte, et al. (2022) wrote, "For ADHD, there is more evidence for a link with stronger divergent thinking than with convergent thinking abilities (45). However, this link between ADHD and divergent thinking is far from clear,"(Stolte et al., 2022, p. 3). In this section one can understand the positive link between design and ADHD, in addition to the enhanced creativity that is frequently attributed to those with the condition.

2.3.3.1 Creative Thinking

According to White (2019), in their article, *The Creativity of ADHD*:

But ADHD may also bring with it an advantage: the ability to think more creatively.

Three aspects of creative cognition are divergent thinking, conceptual expansion and overcoming knowledge constraints. Divergent thinking, or the ability to think of many ideas from a single starting point, is a critical part of creative thinking.

White continues discussing a study performed on college students with ADHD and non-ADHD peers where ADHD students, “showed a broader scope of semantic activation...and is given evidence that linked ADHD to higher divergent thinking and ability to overcome the constraining effect of task examples, it seemed intuitive to look more closely at the relationship between ADHD and the third element of creative thinking, conceptual expansion,” (White, 2019, para. 4). This study suggests that having ADHD allows for greater creative thinking, a ‘superpower’ that SDAD may not realize they have.

2.3.3.2 Hyperfocus

In the ADHD community, there is discussion surrounding hyperfocus versus “flow state”. The consensus is that they are two different things and what a person with ADHD will normally experience is accurately described as hyperfocus whereas flow state can be experienced by anyone. “Historically, hyperfocus has been conceptualized as a symptom of attention deficit hyperactivity disorder (ADHD)...whereas flow has been construed as an enjoyable and facilitative experience within positive psychology,” (Grotewiel et al., 2022, p. 1).

Hyperfocus “showcases individuals’ exceptional ability to concentrate intensely on tasks of deep interest, leading to remarkable productivity and creativity. While managing this intense focus may present challenges, channeling it effectively allows individuals to achieve outstanding results aligned with their passions, emphasizing their unique strengths as ADHD superpowers,” (Selinger, 2024, para. 2).

Another study on hyperfocus and ADHD claimed, “People with ADHD had higher hyperfocus, and more ADHD symptoms related to higher hyperfocus,” (Hupfeld et al., 2022, para. 11). The authors continued with how hyperfocus can be a powerful ability given that:

Many of our participants said that hyperfocus makes them very productive. They said they would not get anything done without hyperfocus. The ability to completely block out distractions and focus only on your goal can be an amazing talent and can lead to breathtaking accomplishments. It is no surprise that many famous people have ADHD, including Olympic gold medalists, artists, singers, and scientists (Hupfeld et al., 2022, para. 12).

Both studies find hyperfocus in ADHD a positive advantage and even suggest that some of the most successful people with ADHD could relate their success to their ability to hyperfocus (Hupfeld et al., 2022). This ability can relate directly to the design field as a student designer must be able to efficiently control when to hyperfocus into a subject or project in order to meet timeline constraints.

2.3.4 Self-Management Strategies

Assessing what strategies have been tested in the field through case studies of ADHD students and how they self-regulate affirms those who are not only students but also designers who must have a good grasp of time management to succeed in the workplace later on. “A strategy is a tool, plan, or method to enhance information processing, efficiency, and/or performance in order to achieve success in a task,” (Kreider et al., 2019, p. 2). But “It is critical that students master prerequisite skills to use a strategy effectively,” (Lienemann, et al., 2006, p. 4). Furthermore, there are constraints specific to SDAD that would benefit from self-regulation strategies, specifically time-management. Therefore, it is imperative to discuss and debate the essential time managements techniques gathered for both Designers and Students with ADHD alike.

2.3.4.1 Gantt Chart

The Gantt Chart named after Henry Gantt (Williams, 2023) is used by Business Professionals and Design professionals and serves as a solid baseline for organizing a Project Timeline as directed in step 6 of Forbes 6-step Strategy (Hennigan et al., 2024). The chart helps break down tasks and allows the individual to see visually what needs to be done first. This is especially helpful to the SDAD as task breakdowns fall under one of the strategies to help prevent ADHD task paralysis (Ives, 2024) as mentioned previously. “Along with breaking projects into small, easy-to-swallow pieces with checkpoints along the way, Gantt charts can be dynamic tools that adapt as a project evolves,” (Williams, 2023, para. 5) Gantt Charts can also be described as “a series of horizontal lines show work done or production completed in a certain amount of time, can be used for mapping out assignments. These charts can help students

organize, sequence, and plan homework assignments as well as develop visual learning guides to prepare for tests,” (Namahoe, 2016 as cited in Hart Barnett, 2017).

Other constraints include time blindness and paralysis, and one way to manage them “is to focus on completion rather than perfection.” (ADDA Editorial Team, 2024) When one focuses too much on perfection, one can become overwhelmed by the number of mistakes or decisions which will lead to decision fatigue and ADHD paralysis. The Gantt chart can remind individuals with ADHD that it is okay to clean up and organize thoughts and ideas later. First one must get it on paper and out of their brain to progress towards completion. As the artist Salvador Dali said, “Have no fear of perfection, you will never reach it.”

Creating an option for students with ADHD to plan out their project’s timeline will exponentially increase their chances for success in the workplace in the future. The reason it is important for the ADHD individual to include a step in the Design Process for creating a Timeline is due to the fact, “that ADHD can impact the development of time management skills and that these skills are important for social functioning and career success.” (Desrochers, Breanna. 2019, p. 603)

2.3.4.3 Time Blocking

A third time management technique shown effective for the person with ADHD would be Time-Blocking. This technique helps overcome a majority of the previously mentioned common challenges seen for someone with ADHD in Section 2.3.2.1. Through a re-prioritization of tasks. Allowing flexibility for the reduction of decision fatigue and preventing over-committing to too many upcoming tasks. Overall, visually imparting time-management skills with practice and

repetition of use. (Hitomi, 2021) This time management strategy is directly implemented into the proposed approach in Chapter 3 as a template provided in Appendix A.

2.3.4.4 Self-Reflection

An important structure that will be implemented into the design tool in Chapter 3 will include a self-reflection portion for the ADHD student after completing the design process. “One of the most effective [instructional] techniques for students with [Learning Disabilities] is strategy instruction/s,” (Lienemann, et al., 2006, p. 4). That reflection allows individuals to consider what went well and what can be improved upon. The satisfaction of something done well can reinforce the use of that strategy for another project, while reflection on what needs to change can allow the individual to make self-improvements. Considering a big part of helping a Design Student with ADHD how to better self-regulate throughout the design process, Chapter 3 will have strategy instruction including a self-reflection portion that could be considered critical to the student’s success when using the approach.

Lienemann puts it in the academic journal, *Self-Regulated Strategy Development for Students with Learning Disabilities*,

Students should be encouraged to become partners in the strategy evaluation process. This increases students’ sense of ownership in the strategy, reinforces progress, and provides a practical way to reduce a teacher’s load. Students can help in many ways, such as learning to evaluate their final products or deciding if the necessary criteria for each step of a strategy have been met. Helping students ask appropriate self-questions (e.g., Am I ready to move on to the next step?) is another

effective way to help students evaluate their own progress. (Lienemann, et al., 2006).

These strategies are referencing a student being assisted by a teacher's guidance, but these evaluations can still relate here as a possible solution for self-regulation. "The self-evaluation strategy also required participants to reflect on challenges related to learning, task performance, and/or progress toward personal goals. For most, the process began by identifying an area or specific task in which improved performance was needed." (Kreider et al., 2019, p. 7).

Through Kreider et al.'s (2019) case study, it was found that the participants to self-reflect properly, they would need to have three awareness of: (1) a range of potential strategies, (2) the types of situations that the strategies can be helpful in, and (3) the approaches for adjusting the strategies to meet specific situational demands (Kreider et al., 2019). "The presence of these factors was important for effective strategy use." (Kreider et al., 2019, p. 10). This awareness is why it will be vital to include these three factors in the self-reflection portion of Chapter 3's design tool.

2.3.4.5 Case Study on Gamification

The case study that is the focus of this section is on a student named Derek (Proulx-Schirduan, 2009) Derek had been diagnosed with ADHD strengths under interpersonal, naturalist, and spatial intelligence. The educator working with Derek decided that the main intervention, "aside from traditional treatments such as medicine and behavioral therapy," would use simple software that was loaded with lively graphics and instant feedback, like a game. This improved Derek's memory, attention, mental processing speed, listening skills, and impulse control" (Proulx-Schirduan, 2009). An application that applies gamification principles to

learning is Quizlet. This program is growing in popularity and is reaching a generation of students with a growing inability to concentrate.

2.4 Related Fields

After discussing general self-management strategies to combat common challenges for individuals with ADHD, this section discusses strategies for accommodating and managing SDAD, as well as opportunities for self-regulation, which are compared and contrasted. Takeaways from this discussion will assist in developing a synthesized strategy for self-regulation in the design process.

2.4.1 Business Management Strategies

Broadening the discussion on how corporate professional achieves self-management through self-management strategies in the corporate environment as it relates to the SDAD. To begin, Forbes gives a quick 6-step strategy for forming an effective Project Timeline they include: (Hennigan et al., 2024)

1. Creating a Project Brief
2. Organizing the Project Scope
3. Estimating how much time per task
4. Define Task Dependencies
5. Make note of Milestones
6. Build the Project Timeline

Thankfully most students or workplaces will already have the Project Brief ready for the designer, but it always will help to re-write to deepen the students understanding of the main

goal of their project. Through these quick steps, one can quickly get an understanding of what they are up against timewise and will be able to refer to when Decision Points come up later during strategic moves in the proposed approach in Chapter 3.

Two potential business management strategies to explore would be the five personality traits in the workplace and the OCBs (Organizational Citizenship Behaviors)(Kang et al., 2023). The five personality traits in the workplace are “a notable number of studies comparing the differences in (a) openness, (b) conscientiousness, (c) extraversion, (d) agreeableness, and (e) neuroticism between entrepreneurs and managers. “[This management method] emerged between 1960 and 2000 (Kerr et al., 2018, as cited in, Kang et al., 2023) a tool already established and in use in the everyday workplace by managers who want to be able to correctly navigate different situations and people types as situations arise in a professional setting.

Organizational Citizenship Behaviors (OCBs) (Kang et al., 2023) is another management strategy that is used is also known as “extra-role behaviors.” Which means they are the roles outside of what a job says an employee must perform at in the workplace. These roles tend to be attributes of the individual that add value to the duties of a person with a career. OCBs are different because they are understood as individual behaviors that are beneficial to the organization and are discretionary, not directly or explicitly recognized by the formal reward system (Principles of Management, 2015). The OCBs fall into seven themes: (1) Helping Behavior, (2) Sportsmanship, (3) Organizational Loyalty, (4) Organizational Compliance, (5) Individual Initiative, (6) Civic Virtue, and (7) Self-Development (Podsakoff, et. al., 2000, as cited in, Principles of Management, 2015). These are looked for in the classroom along with the common workplace to show good leadership and intelligence, but they are also things that are commonly not strengths of the average ADHD student. By disagreeing with this majority

stereotype and agreeing that these are learned behaviors one can see that all students should be treated with the utmost opportunity to learn them.

Vital to gain a better understanding of the gap in education and design methods of self-management for the SDAD. Through the integration of the proposed Approach in Chapter 3, these business models such as the OCBs (Kang et al., 2023) can begin guiding a SDAD to implement these behaviors into their everyday workflow. In reference to Section 2.4.3, it shows how having a strong grasp on these independent behavior traits that are commonly expected in the workplace can help a SDAD empower their ideas and gain more success. Without letting these common OCB's become their unexpected withdrawal from success.

Another reason these OCBs are important to note in regard to the SDAD, is the effect of the expected out-of-office role can have added stress to meet the underlying requirements in the workplace. Since the goal of the proposed approach in Chapter 3 is to guide SDAD to form better behavioral traits and build habits to acknowledge time constraints and use their unique skills to their advantage, before entering the workplace environment. These are the skills the students should consider when practicing in a collegiate environment. Since the added stress could turn into ADHD paralysis if one becomes overwhelmed with the un-spoken expectations such as the OCBs (Kang et al., 2023). The added stress is due to the lack of organization shown in common challenges for the person with ADHD. "Organization becomes an unsustainable task because organizational systems work on linearity, importance, and time." (Dodson, 2024, para 8)

2.4.2 Empowering ADHD in the Workplace

In the Ted Talk, "ADHD as an Entrepreneur's Superpower," With John Torrens (TED, 2018), the idea ADHD can be a positive force in the corporate workplace is introduced. Dr.

Torrens discovered his Adult ADHD later in life. He discussed how he felt like the term, “disabled,” did not accurately describe his experience with ADHD. Instead, he found his ADHD in the workplace as his “superpower,” as an entrepreneur (TED, 2018).

Dr. Torrens and his colleague, Professor Johan Wicklund at Syracuse University created a case study by sampling a survey of 400 entrepreneurs. They found, “62% of this sample of highly successful entrepreneurs identified with traits consistent with an ADHD diagnosis,” (TED, 2018). This study and Ted Talk both support the discussion that ADHD has positive traits that can be found as advantages in the corporate work environment for entrepreneurs. By identifying these traits early in the college classroom and paralleling them to the Designer’s experience with ADHD in the workplace, the conversation around ADHD can begin to become an empowering opportunity for design students to better use their ADHD traits as an advantage in their work.

2.4.3 How the Workplace Relates

The workplace environment can be a starting point to begin to build a working design process for those with ADHD. These outside fields, such as business, have found what environments work for their employees to enhance a neurodivergent mind and increase efficiency. Building upon the workplace and what skills should be taught to undergraduates with ADHD and non-ADHD, this list states eight of the hardest-to-hire skills in the workplace (Muratovski, 2020):

1. Cyber Security
2. Data Science and Analytics
3. Critical Thinking and Problem Solving

4. Design/Systems Thinking
5. Innovation and Creativity
6. Global Perspective
7. Cognitive Flexibility
8. Cross-Disciplinary Ability

These eight show strong similarities between the workplace and the design classroom, specifically these four: (a) Critical Thinking and Problem Solving, (b) Design/Systems Thinking, (c) Innovation and Creativity, and (d) Cross-Disciplinary Ability. These four hardest-to-hire skills are all traits and skills commonly developed in students who attend design colleges.

Innovation and creativity are easily attainable by those with ADHD, who naturally have quick minds and can balance cross-disciplinary interests since they are commonly known to be flexible and great problem solvers. This is a huge strength for Designers with ADHD and for students to be able to leverage this power in their projects. Westermeyer (2011) put it, “The analysis of the influential factors in conceptual design, as well as their considered value according to the proposed objectives and how can people incorporate them in conceptual design, open new expectative for the designers. This new exposition can be [broached] with an adequate knowledge management from the beginning of the design problem to the final solution” (p. 119)

One extreme benefit for designers who may have diagnosed or undiagnosed ADHD is that they can retain knowledge quickly, almost at a rapid-fire pace. Managing the thoughts is the only next step, slowing them down is that weakness here. Kelly, K. (2023) states,

“There’s no concrete evidence that ADHD...leads to creativity. [However], there are a few studies that suggest ADHD challenges can have an upside. The same qualities that make it hard to take turns or follow directions, for instance, may

promote creative thinking... It's also important for people with ADHD to work on the skills that could keep their creative dreams from becoming a reality. That includes skills like organization and time management. Improving those skills can help clear the way for creativity to flourish.” (para. 2)

These statements suggest that design creativity and ADHD correlate, though the exact connection is still not fully understood. It is interesting to point out though, that there are still some skills left out that the average person with ADHD struggles with. Lacking those skills, such as organization and timeliness, could seriously hurt their progress when working out solutions to their creative minds. Both these skills are vital and expected of the individual in the common workspace to be seen as a hard worker and team player regardless of a learning disability.

2.5 Related Methods

Navigating the relation between design, time management, education, and business management strategies and methods will influence how one sees opportunities in these fields. The following are pre-existing options for those looking to advance in their personal growth and efficiency. The methods reviewed in this section of the thesis will also be used to synthesize a more concise tool in Chapter 3.

2.5.1 Connecting Related Methods to the SDAD

As referenced in Section 2.2.4 the history of design education has gone through many changes and experiments throughout time that have enhanced the designer's way of working and thinking when approaching a design method. Within design education at the college level, the methods below could prove useful for the average SDAD in the future workplace. It is important

to understand that completing the design degree is the first step to becoming a professional designer, as noted by Richard J. L. Martin (1990) when speaking on Georgia Tech's Design Education curriculum,

“At the end of the undergraduate period, we would claim the student knows how to design and is prepared for practice, lacking only experience to claim the title of “professional.” What the student has learned in fact, is certification for a craft. He knows the rudiments and is prepared for his apprenticeship in the field. He is able to take instruction and respond to design assignments as given to him. However, he is not yet a professional.” (Richard J.L. Martin, 1990, As cited in, The 1990 Conference on Design Education, 1990).

Relating this to what was quoted earlier by Henry Van de Velde in Section 2.2.4.1, using old means and materials can give new results. These are the same curriculum and optional classroom learning opportunities as those in the Bauhaus. The same goes for the design methods of the ages of education, some are, “as old as the hills,” (Henry van de Velde, 1897, as cited in Gorman, 2003, p. 48) but still have validity to their names. Honoring these past methods as tried and true, the building blocks to forming a new design process specifically tailored to the SDAD become clearer.

2.5.2 Design Process Methods

The Design Process Methods discussed in this thesis are to be synthesized in Chapter 3; therefore, it is vital to accumulate an understanding of the possible ways professional designers are currently using to lead them through the design process. Key design methodologies include (1) The Double Diamond Method (2) The Design Squiggle (3) The HCD Design Process by

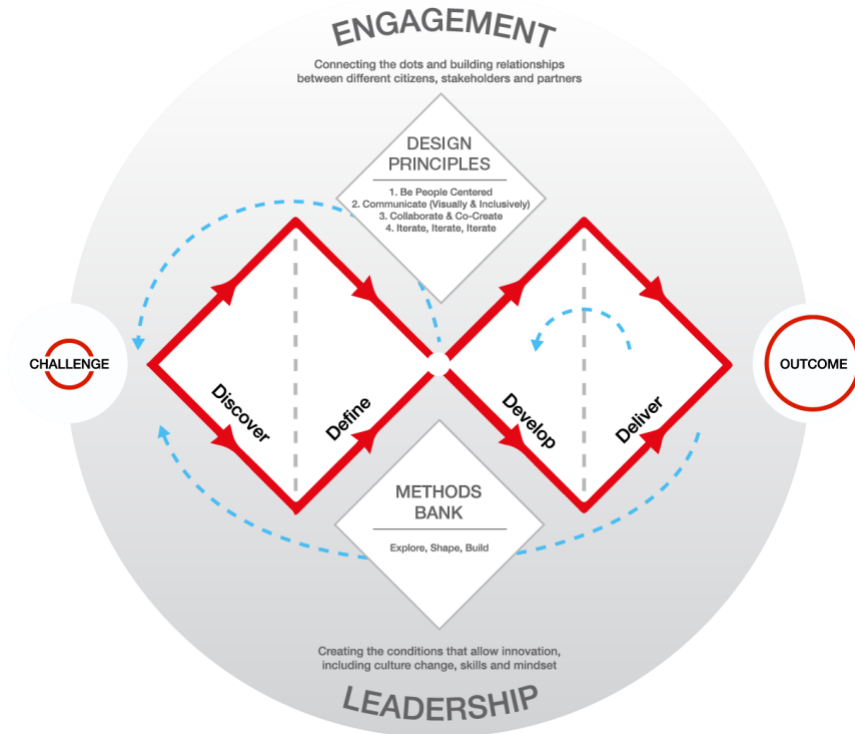
IDEO (4) The Pinball Machine Method and (5) The Helix. Design is often a messy, broad process; these existing methods exist to make the process digestible and reproducible. Imposing learned order upon a seemingly wide array of procedures to choose from.

2.5.2.1 The Double Diamond Method

One interesting design method that is commonly implemented today is named the ‘Double Diamond Design Method.’ (*Framework for Innovation* 2024). This method draws heavily upon the basic principles of strategic therapy, most noticeably the work of those from Ericksonian psychotherapy (Roberts, 2005). It highlights the design process as a diverge, converge, diverge, converge methodology, but maybe this method does not work for everybody. If the only correct way to develop a product in an organized structure is to (a) discover, (b) define, (c) develop, and (d) deliver. The individual with ADHD may look at this and feel defeated when their approach does not immediately work out. It may need to be a back-and-forth, or the student or designer may need to define and then discover. The student may need to jump straight into developing to truly get a grasp on what they are trying to discover. Hopping into programs— namely, CAD – and brainstorming could serve to ignite the creative side of their brain and to send their interest and overall focus up.

Figure 2

Double Diamond Method



Note. Diagram made by The British Design Council in 2005 to better describe the design process. From *Framework for Innovation*. Design Council - Design for Planet. (2024).

<https://www.designcouncil.org.uk/our-resources/framework-for-innovation/>

(*Framework for Innovation* 2024)

The Double Diamond Method was developed by the British Design Council in 2005 (*11 lessons: A study of the design process* 2022) It includes four phases: (1) Discover, (2) Define, (3) Develop, (4) Deliver. It is one of the most known Design Methodologies amongst designers.

“Part of [the] Design Council’s reason for creating the Double Diamond was to address this lack of visibility [of the design process]. Today the Double Diamond is a universally accessible description of the design process and has become an accepted part of design language, it is used and referenced worldwide.” (*History of the Double Diamond* 2024, para 3)

It also, “maps the divergent and convergent stages of the design process” (*11 lessons: A study of the design process*, 2022, p. 6). The ‘Discover’ stage implies the designer identifies market needs and user needs through user research and market research. (*11 lessons: A study of the design process* 2022) This could include quantitative and qualitative data research. The ‘Define’ stage includes project development and sign-off, allowing for the business objectives to be achieved (*11 lessons: A study of the design process* 2022). Phase three, ‘Develop’ opens the design process back up for development and testing. The British Design Council also includes multi-disciplinary working in this third stage that says is a “key feature of the design process...where input and advice from other areas of expertise are essential to finalizing the product or service at the stage.” (*11 lessons: A study of the design process* 2022, p. 20) The final stage is ‘Deliver,’ which includes finalizing testing and launching the final deliverable. This updated model also allows for feedback loops after testing the launch. This Double Diamond model poses unique challenges for the individual designer with ADHD but is built with, “The ambition...to create something that would be applicable in any field; to create a model that Design Council could use with anyone they worked with.” (*History of the Double Diamond* 2024, para 13). This Double Diamond Method will be evaluated in Chapter 3 as the starting base for the development of the Spiral Staircase Approach.

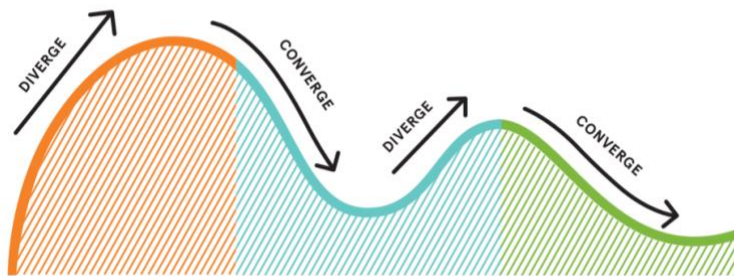
2.5.2.2 The HCD Design Process by IDEO

IDEO is a, “multidisciplinary community of makers who leverage discovery, play and experimentation to help organizations get and stay ahead now and in the future.” (*About ideo: Our story, who we are, how we work* 2024, para 1) The company has been around for 40+ years and has implanted many strategies for the Design community over those 40 years including the

“HCD Design Process” and the “Six Phases of the IDEO Design Process.” The company goes deeper into both these processes in their book, *Field Guide to Human-Centered Design* (IDEO.org, 2015). Even the founder, David Kelley, says, “[They’re] kind of experts on the process of how you design stuff,” (*Ideo human centered design strategy: Design Thinking Process* 2018). By diving into these structured processes one can begin to contrast what is essential for the design process to be considered helpful to the client and the designer through design thinking.

Figure 3

HCD Design Process by IDEO I



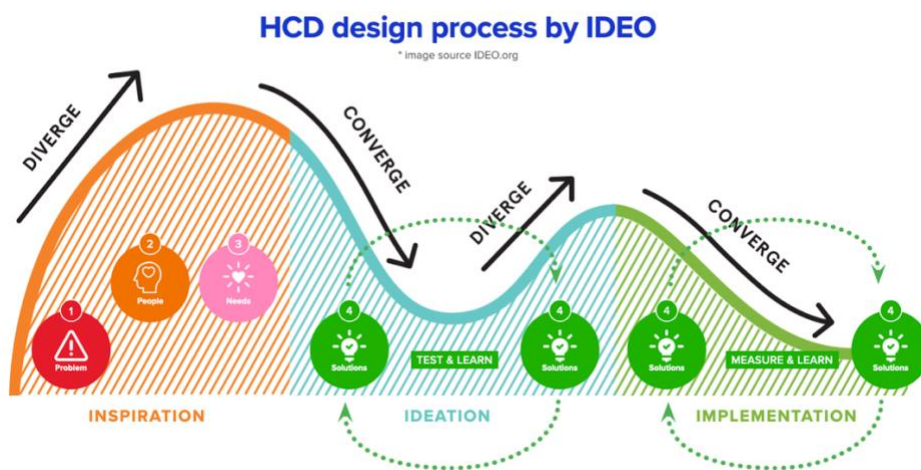
Note. A Diverge, Converge Design Method by IDEO to show HCD Design Process. From IDEO.org. (2015). Introduction. In Field Guide to Human-Centered Design - Design Kit (1st ed., pp. 13–13). story, Scribd. Retrieved September 26, 2024, from <https://tinyurl.com/59cep8kx> (IDEO.org, 2015)

Within the book, *Field Guide to Human-Centered Design* (IDEO.org, 2015). IDEO lays out a three-step mindset that includes (1) Inspiration, (2) Ideation, and (3) Implementation. Shown

here in Figure 3 is how those three steps ebb and flow through the linear design process. The Inspiration Section is in orange, Ideation is in blue, and Implementation is in green.

Figure 4

HCD Design Process by IDEO II



Note. A developed 7-Step Method from the HCD Design Process By IDEO From Tyre, N. (2024, July 16). The human element: Putting people first in the Digital age. The Digital Wellness Institute. <https://tinyurl.com/4cwmzt2j> (Tyre, 2024)

By looking further into the HCD Design Process, the three essential steps to creating a human-centered design. It can be broken up in seven steps while diverging and converging. These steps according to the Figure 4 above are:

1. Problem
2. People
3. Needs

4. Test
5. Learn
6. Measure
7. Learn

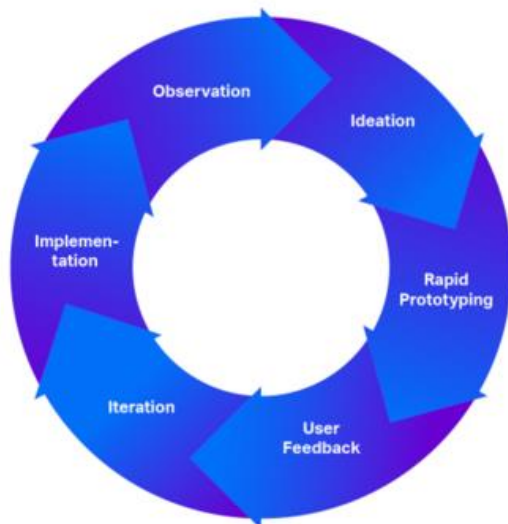
This will be significant in Chapter 3 when synthesizing a new design process for those with ADHD as this method specifically allows for the returning and continuation of testing and learning, and measuring and learning, in the Ideation and Implementation stage of the HCD Design Process (Tyre, 2024).

2.5.2.3 The Six Phases of the IDEO Design Process

The biggest take away from IDEO’s HCD process is that it is exactly that– Human-Centered Design. The central philosophy this process by IDEO (2015) revolves around is, “[by] understanding people and designing from their perspective, you will come up with ideas they’ll embrace,” (*Ideo human centered design strategy: Design Thinking Process* 2018, para 11)

Figure 5

The Six Phases of the IDEO Design Process



Note. The Six Phases of the IDEO Design Process from UserTesting Blog. (2018, December 5).

Ideo human centered design strategy: Design Thinking Process. IDEO Human Centered Design Strategy: Design Thinking Process. <https://tinyurl.com/2s38s5kd>

(Ideo human centered design strategy: Design Thinking Process 2018)

By taking this philosophy and their already structured HCD Process Diagram, designers can see six essential phases of their Design process, listed here below:

1. Observation

2. Ideation
3. Rapid Prototyping
4. User Feedback
5. Iteration
6. Implementation

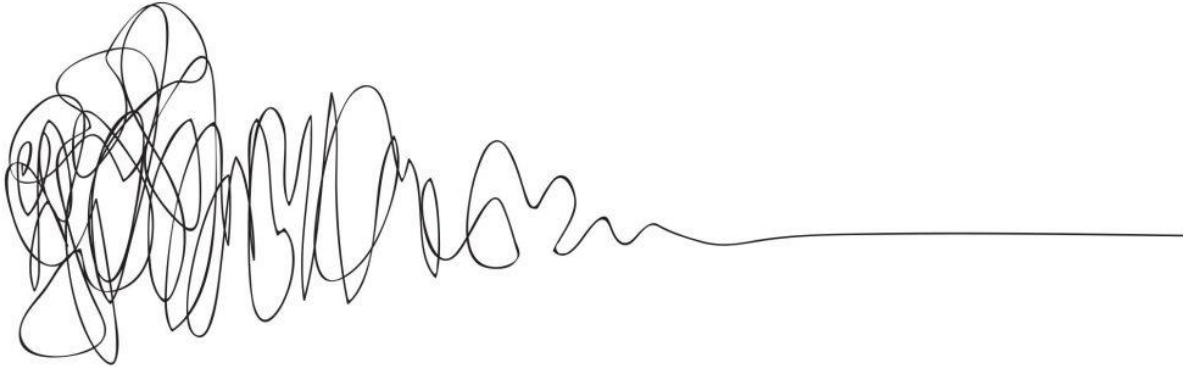
IDEO's Six Phases of the Design process could prove to be a great linear way when performing the design process for a client or for a school project. Finding that IDEO has used and tested these six phases shows that IDEO has found a way to automate the design process that works for them and whatever client comes through the door (IDEO.org, 2015). Even though this could be a great starting point for a student in the design classroom, what is missing from this automated process is how it could relate to the individual designer with ADHD.

2.5.2.4 The Design Squiggle

The Second Design Process to include would be, "The Design Squiggle," (Azhar et al., 2020). This illustration is less of a step-by-step process but instead, an indication of how designers feel when going through the chaos of decision-making in a seemingly, 'messy,' process that ultimately leads to the, 'cleaned up' end product. Comparing this illustration to each other between Newman's original Design Squiggle and a Design Squiggle that has been altered to fit a Professional Designer's needs, it becomes obvious where the desire to put linear steps in a seemingly non-linear process begins.

Figure 6

The Process of The Design Squiggle by Damien Newman



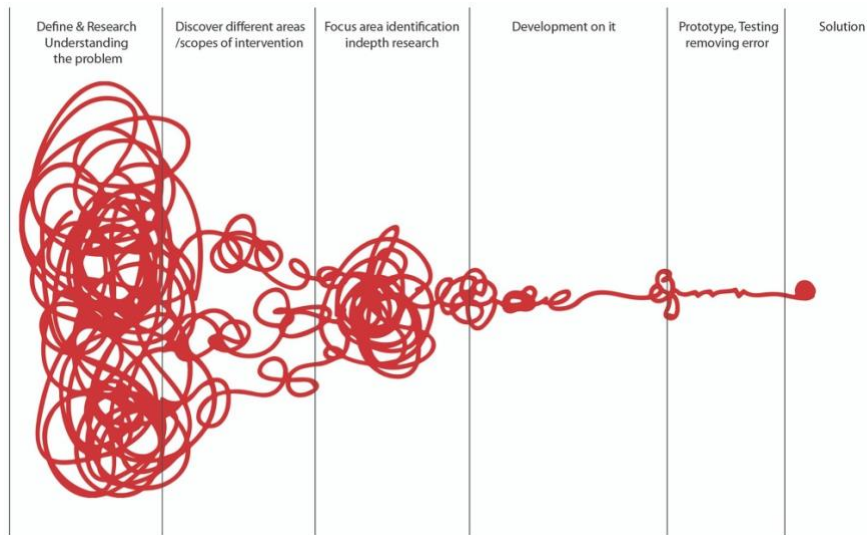
Note. Diagram made by Damien Newman in the early 2000s From *The squiggle*. The Squiggle. (n.d.). <https://thedesignsquiggle.com/>

The ‘Design Squiggle’ was originally illustrated by Damien Newman in the early 2000s (Azhar et al., 2020) to “[represent] the linear process of first understanding a problem through activities such as research, to then finding possible plans to solve the problem and then executing in the plan...[and] it very much feels like a messy and unclear process.” (Azhar et al., 2020, para 5). It is important to include this design process illustration because it communicates the general consensus in the design community of the linear process. What it does not answer is how to unravel the ‘messy’ process; it only represents it.

There has been attempts to break down the ‘Design Squiggle’ by other Designers in the industry such as Shubhangi Choudhary (2019) who breaks down the design squiggle into 6 phases (see below).

Figure 7

“My Design Squiggle” by Shubhangi Choudhary



Note. A Re-Design of the Design Squiggle originally by Damien Newman From Choudhary, S. (2019, February 18). The design squiggle. Medium. <https://medium.com/@i.shubhangich/the-design-squiggle-2e80fb8d27e4>

(Choudhary, 2019)

Choudhary goes on to simplify it even further as only three phases (1) Research (2) Concept and (3) Design. Choudhary found the visual aid vital for their client presentations because it helped them tell the story of their design project in other countries such as Japan and Korea (Choudhary, 2019). This shows the versatility and relatability of the visual aid. It can be beneficial to break down how to un-knot the mess that is the design process as mentioned in Section 2.5.1.

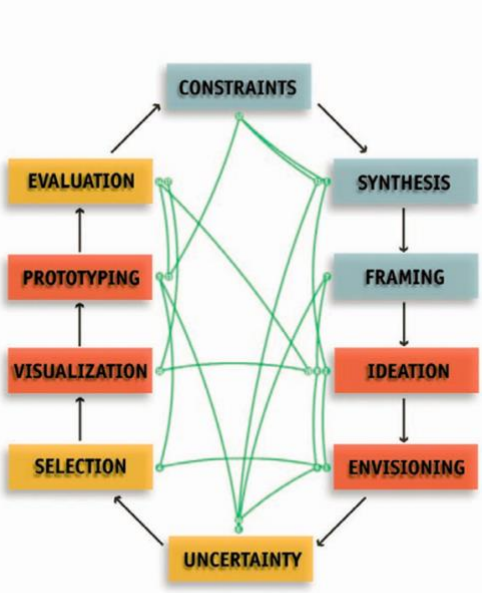
2.5.2.5 The Pinball Machine Method

Introducing the Pinball Machine Method into this literature review as the first method to visually describe the opportunity to jump from different steps in the design process. The visual validation of the Pinball Machine Method is refreshing from the linear reproduction styles that

were seen in IDEO’s multiple methods seen in the above sections of Section 2.5.1. Showing a seemingly randomized process. This method– though randomized– still is beginning to show visual structure in comparison to the Design Squiggle in Figure 6.

Figure 8

The Pinball Machine Method



The dark arrows show a general tendency toward a cyclical process, with the color coding of the titles indicating activities of similar types. In real life, as is illustrated by the project shown in the green sequence, the pattern is complex and less orderly than a clockwise cycle.

Note. The Pinball Machine Design Analogy, Original Author unknown. From Shelly, K. (2016a, February 27). Designing design methods. Medium. <https://medium.com/@interkatie/designing-design-methods-c3a1a9e188d3>

The above Figure 8 has a combination of ten randomized and set visual phases of the method. According to (Shelly, 2016) the Pinball Machine Analogy’s Ten Stages to the Design Process include:

1. Constraints
2. Synthesis
3. Framing
4. Ideation
5. Envisioning
6. Uncertainty
7. Selection
8. Visualization
9. Prototyping
10. Evaluation

These ten stages are, “[generalizations of] the interaction design process... They will often be used in the same sequence and repeated iteratively, but the most productive process is usually out of order; it can sometimes seem almost random,” (Moggridge, 2007, p. 729).

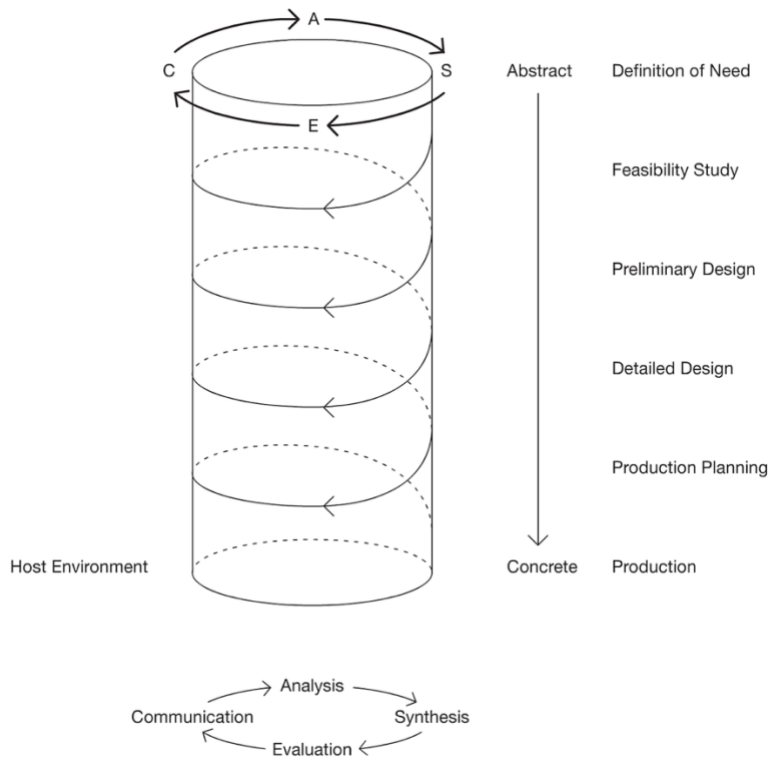
When researching methods in design it was proving difficult to find a Design Process Visual that did not lead itself into being a start-to-end direct pathway for a designer. The Pinball Machine Visual is the first method within this literature review that shows the option for a designer to return to a phase in the design process or circle back to a step they would like to repeat. However, the cyclical process proposes a possible misunderstanding as the visual could lead a designer to believe there is no end goal. One could get stuck in this loop forever so to say, with no divergence or convergence to guide the designer.

2.5.2.6 The Helix

The oldest and most relevant process to review “The Helix” by Mihajlo Mesarovic who, “created this visualization of the design process in 1964,” (Mesarovic, 1964, as cited by Shelly, 2016).

Figure 9

The Helix



Note. The Helix by Scientist Mihajlo D. Mesarovic in 1964 From Shelly, K. (2016a, February 27). Designing design methods. Medium. <https://medium.com/@interkatie/designing-design-methods-c3a1a9e188d3>

This Model, The Helix (Shelly, 2016) provided considerable insight into the development of the proposed approach discussed in Chapters 3 and 4. Its structure of a downward spiral with, “both

a repeated cycle of steps and progress through time,” (Dubberly, 2004, p. 121). This model illustrates the messiness of design with a focus on forward movement to complete the design project.

Because, The Helix (Shelly, 2016) was one of the first design models to be implemented in the design world holds importance. It should be the baseline to construct an everchanging process for a SDAD. As Peter Rowe puts it,

Throughout this kind of account runs the assumption that it is possible to discriminate distinct phases of activity and, [furthermore], that such distinctions have relevance to our understanding of design...The very maintenance of distinct phases of activity, with a beginning and an end, and with feedback loops among them, requires that objective performance criteria can be explicitly stated in a manner that fundamentally guides the procedure. (Peter Rowe, 1987, as cited in Dubberly, 2004)

So far not a single discussed process methodology or analogy has been able to visually demonstrate the opportunity for a designer to return back to pre-attempted steps. None have specified when to return and when to continue. Even though this Helix (Shelly, 2016) model allows for repetition and moves in a similar production progress to the proposed Spiral Staircase Approach, it negates the synthesized design process steps and how it could relate to a designer with ADHD. It also refers to the entirety of production development whereas the Spiral Staircase Approach will be focused on the design process solely.

2.6 Literature Review Conclusion

2.6.1 Key Points

Key findings were within the history of education of design and in where what we know of ADHD today: (a) Bauhaus was the first industrial design education with Walter Gropius as Founder in 1919, and (b) ADHD throughout the year has had a negative tone and only has been around the last 43-50 years and more recently has begun a shift in recognition for the possibility of being a strength that could be leveraged in design and the classroom. There are existing policies that protect students in said classrooms who are neurodivergent such as Section 504 and how designers are starting to put together that we may be interconnected with ADHD via natural creative abilities. The gap is that there is a budding emergence of recognition of positive undertones and usage of the growing discovery of ADHD in students and it's being a superpower in the corporate design world and the classroom, but no usage of the two together. Where opportunity lies with students centered in their workflow using these same leveraging and utilizing strategies as they would if they were managers themselves. Where does education in design come into play now that we have connected that ADHD is a superpower rather than a disadvantage?

2.6.2 The Gap

So, what is missing? This literature review is meant to be a reference to what has already been found through case studies on ADHD and correlations to superpowers and disadvantages in the college and work environment. Many of the articles and journals referenced on the correlation of ADHD and Designers and plenty of articles that spoke on

the correlation of ADHD and education, but not many confirmed how to combine the two in a fundamental way that could help benefit a SDAD before entering the workplace.

2.6.3 Conclusion

Throughout this literature review, we have looked at (a) Designers' correlation with ADHD, (b) Self-Management for Designers, (c) Design Process Practice for Design Students with ADHD, and (d) Existing common Design Methods. However, what these sections omit from discussing utilizing management strategies to help the individual SDAD create a personalized design method to set them up for success as a designer in the workforce through incorporating self-regulation and self-management techniques throughout learning the design process. There is a major opportunity here to bridge this gap for the SDAD through combining strategies already implemented in the workforce to create better behavioral skills that utilize their unique abilities that come with having ADHD. To end as we began, “Everyone is smart in different ways. But if you judge a fish on its ability to climb a tree, it will spend its whole life thinking that it’s stupid.” (Hunt, 2017, p. 84).

CHAPTER 3: THE SPIRAL STAIRCASE APPROACH

3.1 Introduction

The Spiral Staircase Approach (SPR.S.A) is a helpful analogy to describe the non-linear creative process for the individual SDAD. This process is a synthesized approach adapted from previous design processes well-known in the design community, such as the (1) The Helix, (2) the Double Diamond, and (3) the HCD 6 Phases. This combining of methods allows the breaking down of the four main stages into a 12-step process to be more digestible and inclusive for the SDAD.

The approach itself is intended to be universal, with specific checkpoints that could benefit both the SDAD and the student designer without ADHD through simple task initiation tactics such as brain dumps and decision trees. The staircase-like visual provides permission to the Student Designer that it is okay to return to a previously completed step if they recognize the time risk and are confident so that they can continue once completing a repeated step.

One can easily navigate the four stages by referring to Figure 13, the top view of the four main stages together. The approach incorporates no-return points to encourage continuation and break the cycle of feeling stuck in one spot with ADHD paralysis (Team, A. E., 2024). The high-low risk warnings increase awareness when contemplating returning farther than one step back. This also increases the gamification of the process which should overall increase interest in the SDAD's desire to continue, therefore increasing overall productiveness and perseverance.

The SPR.S.A also offers improvement tactics for self-management through incorporating three ADHD checkpoints: (1) Time Management Worksheet, (2) Analysis Paralysis Worksheet,

and (3) Self-Reflection Worksheet. The Time Management Worksheet can be found at the beginning of the staircase model to encourage the practice of time planning to reduce overall stress and time blindness. The second SDAD Checkpoint, Analysis Paralysis, can be deployed anywhere on the staircase and to be repeated whenever the SDAD feels stuck or overwhelmed. This support step tackles the three types of ADHD Paralysis as discussed in the literature review (Team, A. E., 2024). The Self-Reflection guide reveals to the SDAD where to make improvements and when improvements have been made through the practice of using the SPR.S.A.

A student designer's ability to manage their ADHD through the use of the SPR.S.A can begin to encourage the embracing of the individual's unique thought processes. The SPR.S.A only begins to allow the student to harness their ADHD as a catalyst for their creativity and time to create something distinctive to their character and process. These challenges being addressed do not come without also encouraging the SDAD to use their unique abilities in an advantage mindset such as applying hyperfocus and to leverage creative thinking with every design project.

3.2 The Spiral Staircase Approach

This section introduces the Spiral Staircase Approach to help the SDAD better navigate the Design Process. Methods such as the Double Diamond Method (*History of the Double Diamond* 2024), the Pinball Method (Moggridge, 2007), The HCD Method by IDEO (Tyre, 2024), and the Helix Analogy (Shelly, 2016) will help create a stable base for the general design process to be broken down for those with ADHD. Because “perhaps all design method diagrams can be separated into one of the three camps: diamond-esque, pinball-esque, and helix-esque”

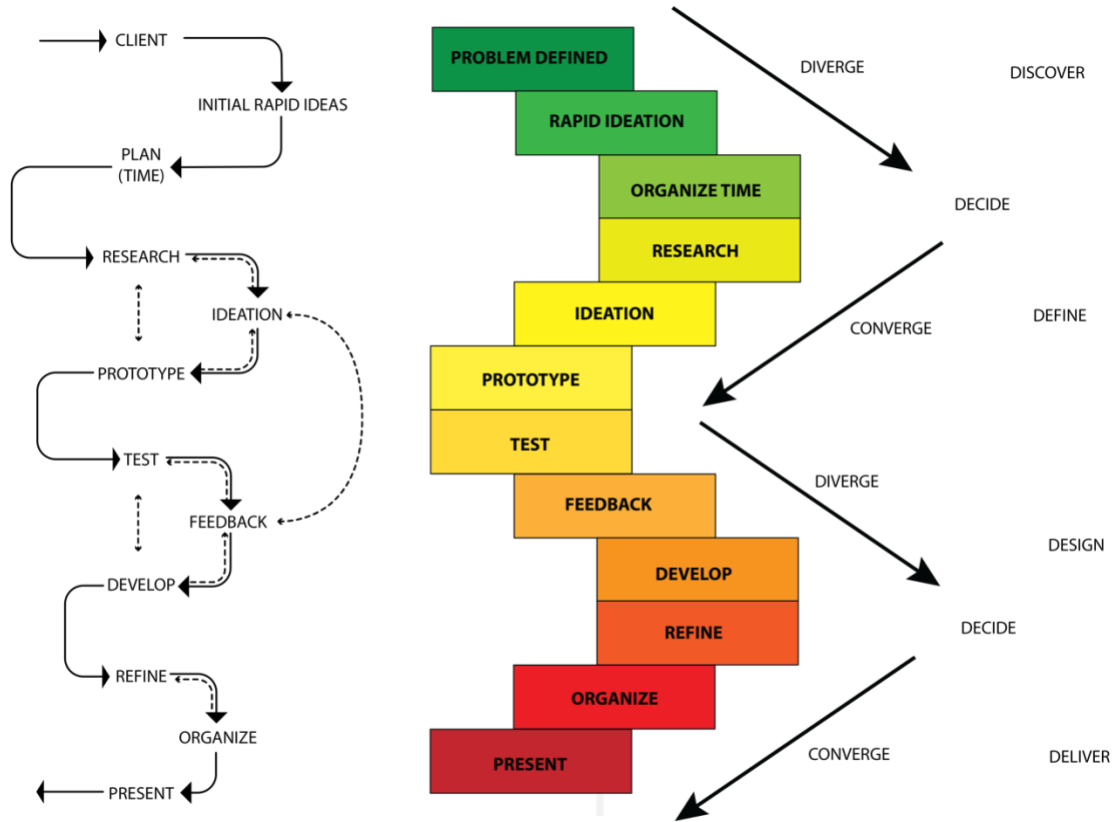
(Shelly, 2016, p. 14), this core principle can provide the foundation for the spiral staircase method.

The concept develops from the idea that the design process is non-linear but in fact, can be a back-and-forth process. To the SDAD mind, this can be a positive as it is relieving to have visual validation and reasoning to a seemingly random process. It can quickly become a negative if the SDAD finds themselves stuck in a repetitive paralysis (as noted in discussion about the pinball method in Section 2.5.2.5, Figure 8). This approach aims to help the SDAD acknowledge these common repetitions and encourage continuation.

This strategy keeps both elements of decision-making in mind and allows the SDAD to strategically make decisions quicker and easier than swimming in circles. Like stairs, eventually, one must go down and leave the house. The goal of this analogy is to convey getting the SDAD down the stairs and out of the house with a completed design project within their given timeframe. Below is the framework for the Staircase built from the revamped Double Diamond Method and the HCD method by IDEO discussed in Figure 2 and Figure 4.

Figure 10

The Spiral Staircase Approach



Note. Figure of Spiral Staircase Approach.

Showing the design process in this metaphorical way is important because it allows the SDAD to visually understand the goal and timeline of the typical industrial design project process. The metaphor is that the design process can be viewed as a spiral staircase rather than a unidirectional spiral or a helix as seen in Figure 9. The staircase analogy not only demonstrates the step-by-step character of an Industrial Design Creative Process but also gives autonomy to the SDAD to return to the previous steps above or advance to future steps as they please. Figure 13 will show

a further breakdown of the SPR.S.A that will contain the unique challenges and checkpoints for the SDAD as well as suggest the risk of falling behind a given project. Figure 10 is meant to demonstrate the combination of the HCD converge and diverge method in Figure 4 and the Double Diamond's four phases seen in Figure 2 which are: (1) Discover, (2) Define, (3) Design, and (4) Deliver into a spiral staircase-like visual illustrating continuity and progress.

3.3 Synthesizing the Strategies

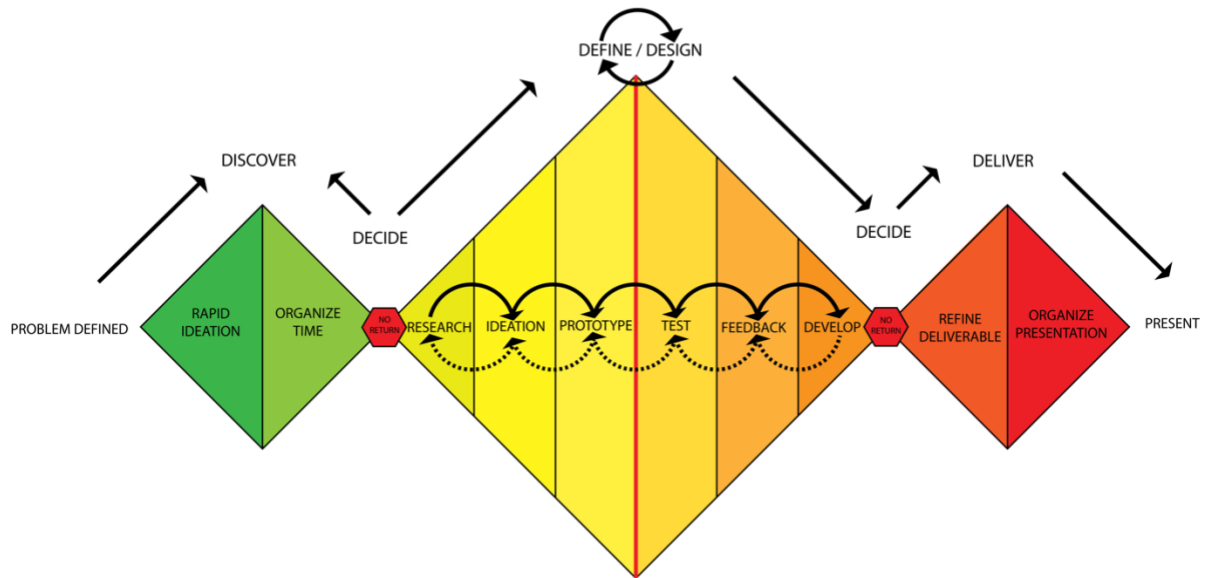
After synthesizing existing design methodologies, a new 12-step design process emerges catered for the designer with ADHD. Utilizing the 4 main divergent and convergent stages of the Double Diamond Method (*Framework for Innovation 2024*), and the combination of the Steps of the Pinball Machine Method (Moggridge, 2007) and The Six Phases of the IDEO Design Process (*IDEO human centered design strategy: Design Thinking Process 2018*), the new 12 step Approach, The SPR.S.A breaks down the existing steps into a digestible framework for the SDAD.

3.3.1 How this relates to the Double Diamond Method

This approach implements the 4 main steps: (1) Discover, (2) Design, (3) Define, and (4) Deliver (shown in Figure 2) from the British Design Council's Double Diamond Method. These four stages can be dissected to allow internal sub-steps to be completed at each stage. Within those sub-steps one can return and repeat each no more than twice before continuing to the next stage. By reconstructing the double diamond one can begin to visualize how these four steps could be interpreted by someone with ADHD.

Figure 11

Reconstructed Double Diamond Method for the SPR.S.A



Note. Reconstructed Double Diamond Method in Relation to the Spiral Staircase Approach.

The SPR.S.A takes the adapted Double Diamond Method by the British Design Council in Figure 2 and adds a fifth over-arching phase called Decide. This is important to the analogy as the SDAD must come to a decision point that cannot be altered as the design process continues without returning to a set of steps eventually. These no-return points have significance in encouraging the SDAD to continue and should decrease decision fatigue. The no-return points are strategically placed where the diamonds converge. Including where the process of design expands and narrows down is a huge part of how the process works and allows for a better visual of where one should be at that stage. This also gives clarity to the overarching SPR.S.A by implementing the steps in well-known models such as the Double Diamond Method.

John Chris Jones (1992) puts it,

One of the simplest and most common observations about designing, and one upon which many writers agree, is that it includes the three essential stages of analysis, synthesis, and evaluation. These can be described in simple words as 'breaking the problem into pieces', 'putting the pieces together in a new way' and 'testing to discover the consequences of putting the new arrangement into practice'. (Jones, 1992, p. 63)

Taking these three simplified 'essential stages' of the design order there is an opportunity to expand in between where the best places are to stop, re-evaluate, and regroup.

3.4 Navigating the Spiral Staircase

It is important to note that the individualistic experience for a person with ADHD. This tool holds an emphasis on each person's unique experience by being flexible and adaptable, attempting to make the SPR.S.A helpful for a SDAD because of the navigation this diagram exhibits in Figure 13. A SDAD using this diagram should be able to easily identify when it is a higher and lower risk of returning to a previous step.

The SPR.S.A is meant to induce motivation through strategic board-game like gamification (Templeton, 1995) of the Industrial Design Creative Process for the SDAD. To support this structure there is a pattern to help navigate the SDAD through the process to reduce fatigue and choice paralysis. The SPR.S.A allows one step forwards and allows 1-3 steps backwards.

Three steps back are the highest risk choice, and two steps back are the lower risk choice. The majority of the high and low risk possibilities for the SDAD would most likely occur between the second and third stage as shown in Figure 13, Revised Double Diamond and as shown in Figure 11, the Top View of the Dissected Four Stages of the SPR.S.A., hence why the revised Double Diamond in Figure 11 shows the two stages combined.

The high and low risk warnings only occur in between the stages since they are for when the SDAD is deciding whether to go back to a previous stage. Task Switching is encouraged within the stage itself, therefore making that decision neither a low nor high-risk choice. This approach specifically wants to only incentivize to not return after a student is too far down the ‘stairs’. This will come into play later on in Appendix C, the Self-Reflection Worksheets. When the student counts up their points for the overall use of the SPR.S.A. The completion of the step is 10 points flat. Repeating a step does not deduct points but does not add to them either. A student can only gain points by breaking through their analysis paralysis or taking less time than originally planned by using the task management time worksheets in Appendix A.

Once a designer leaves the first stage, they should have the tools to manage their time by using the self-guided worksheet that incorporates Time Management, which was developed strategies given in the literature review. This will allow the SDAD to promptly continue their process with confidence.

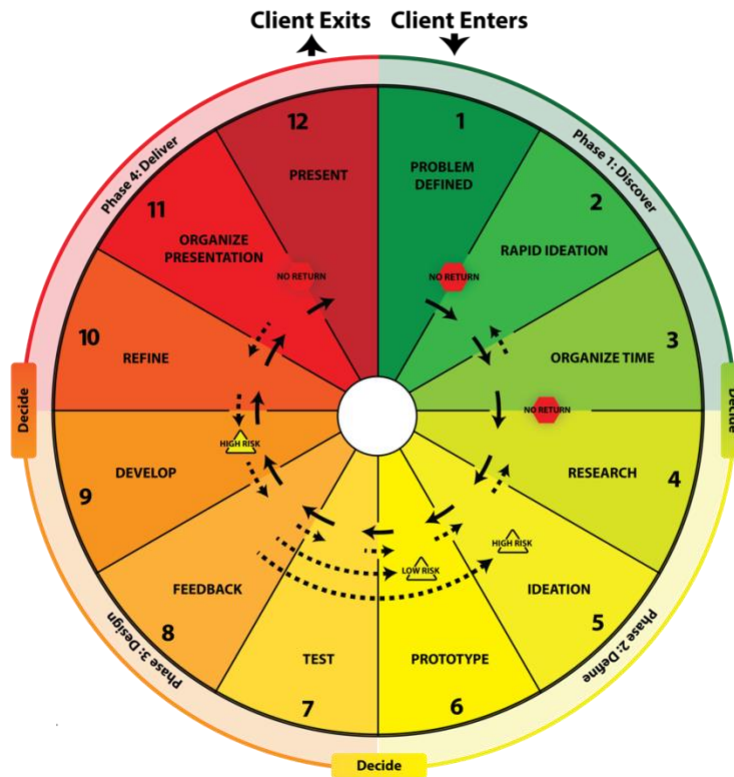
The process holds three important ADHD Checkpoints that will combat (1) Time Management, (2) Analysis Paralysis (3) Self Reflection.

3.5 Overview of the 12 Steps

There are high and low-risk decision points implemented throughout the approach to signal to the designer with ADHD if they need to stop and move on or if they have the time available to return to a previous step without delaying the projected due date of the project. These high and low-risk cautions encourage the continuation and bring urgency and warning to the SDAD to double-check constraints before repeating an already completed step. They should answer the questions, "Should I move on?" and "Do I have time to try this again?" Figure 10 is a good way to visualize the overarching concept and how the four Phases flow through the Design Process, but this strategy does not come without its risks.

Figure 12

Top View of Spiral Staircase Approach: The 12 Steps Defined



Note. Top View of the Analogy of Using a Spiral Staircase for a 12-Step Design Process for the Person with ADHD.

To best understand Figure 10 and Figure 13, this section serves to describe the Spiral Staircase Approach's 12 synthesized steps to the Design Process which include:

1. Problem Defined

2. Rapid Ideation
3. Organize Time
4. Research
5. Ideation
6. Prototype
7. Test
8. Feedback
9. Develop
10. Refine
11. Organize
12. Present

These 12 Steps are broken down into 4 "flights" or "stages" of stairs that allow a designer to better gather where they are in the design process as they perform the necessary steps.

The analogy serves as a "staircase" rather than a unidirectional spiral that allows the designer ease of returning to a previous step or repeating a whole section of steps. This challenges the appropriateness of a linear process and creates an opportunity to personalize the design process to the individual designer's needs.

3.5.2 A Detailed Description of the Four Main Stages

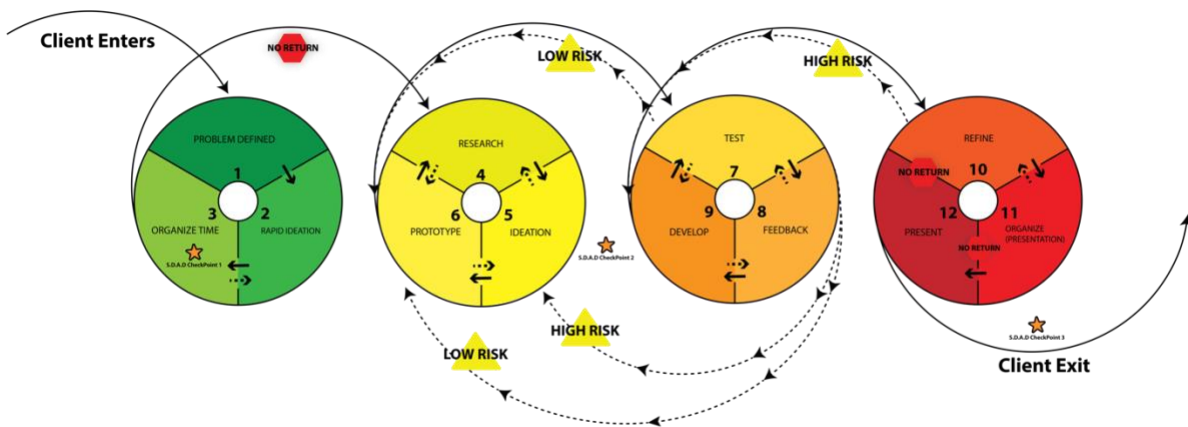
This section breaks down the twelve SPR.S.A steps into four main stages referenced in Figure 10 and Figure 12 even further. All four stages include three steps each, allowing a student to return to a previous step within the operating stage without the risk of falling behind in their time constraint. Scattered between these stages are where the no-return and high and low-risk

points reside. These are to help a SDAD know if their decision to return and repeat a step is worth the risk of falling behind or if they have time to return. There are also three ADHD Checkpoints to combat the specific challenges a SDAD may face throughout the average design process. These will be broken down further throughout this section.

It is important to note here that, not pictured in Figure 10, Stage 2 and Stage 3 is most likely where the second SDAD would reside on the SPR.S.A. It is not included in the figure as it pertains to the individual SDAD and could appear at any point on the SPR.S.A. and should be referenced any time the SDAD is experiencing feelings of overwhelm and decision fatigue also known as ADHD Paralysis as discussed in Section 2.3.2 in the literature review.

Figure 13

Top View of Spiral Staircase Approach: The 4 Stages Defined



Note. Top views of the four main stages of the SPR.S.A analogy.

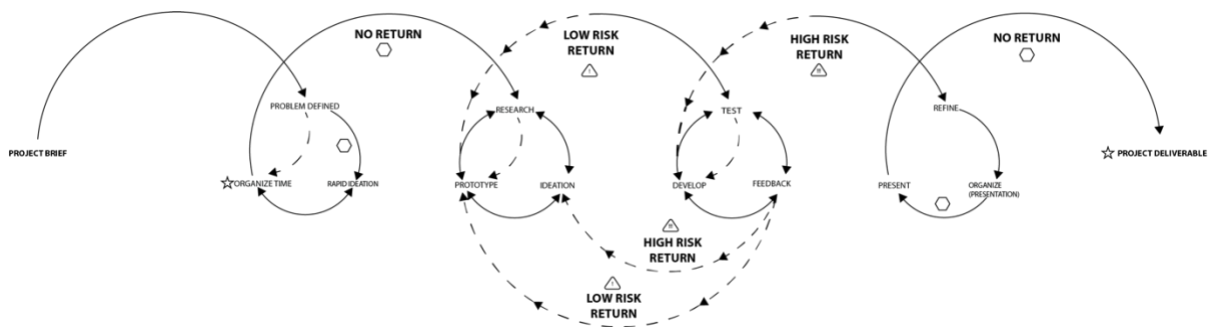
Here one can see clearer –in reference to Figure 12– where the higher risk and lower risks are and when the decision points will come about, leaving ample time to make quicker decisions and

allow for design thinking to take precedent. There is also a point within the model that the student designer may not return or go back. When iteration and development are essential to a design process, staying in these phases ensures that a project will remain incomplete. The Spiral Staircase Method includes a gamification element that proves helpful to the ADHD brain; this is simply an approach to help the SDAD learn how the process works best for them and eventually, they will be able to quickly make these decisions more naturally.

Below (see Figure 14) is a breakdown of the same four stages top view. This breakdown may be easier to digest for the SDAD when recording their process. This Figure will be used as a template in Chapter 4. This template is meant to serve as a practical guide when the SDAD begins its project and follows the SPR.S.A.

Figure 14

Top View of Spiral Staircase Approach Template



Note. Top views of the four main stages of the SPR.S.A breakdown template.

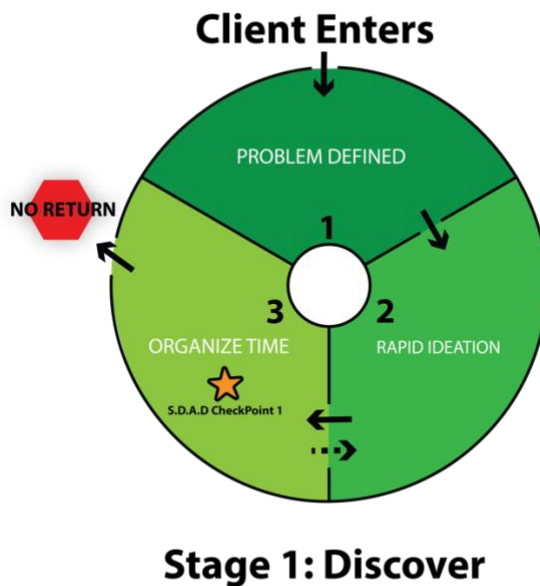
3.5.2.1 Discover: Stage 1

To begin, the SDAD enters the Discovery Stage. The first stage in the SPR.S.A, as viewed in a top-down orientation in Figure 13, is ‘Discover’, prompted by the original ‘Double

Diamond Method. Within ‘Discovery, a student may be prompted with a problem that needs to be solved. This prompting can be from a teacher or a client.

Figure 15

Top View of Spiral Staircase Approach: Stage 1: Discover



Note. Top view of the first of four main stages of the SPR.S.A analogy.

This is also where research begins. Before one can solve a problem, one must understand the problems context. Here one should research the market and any new lingo and information that could help them relate to the client and/or client base better.

This is when Design Thinking step one: to Clarify– Comes into Play (Han, 2022) “By [understanding] the person affected by a problem, you can find a more impactful solution

[through empathy],” (Han, 2022, para. 3) This stage includes three steps: (1) Problem Defined, (2) Rapid Ideation, and (3) Organize Time. These steps are essential to getting started in the Design Process.

The beauty of this approach is that the individual will have the chance to decide what is best for their personal process. This concept of breaking down tasks within the already disassembled steps will be processed better through the Time Management sheet in Appendix A.

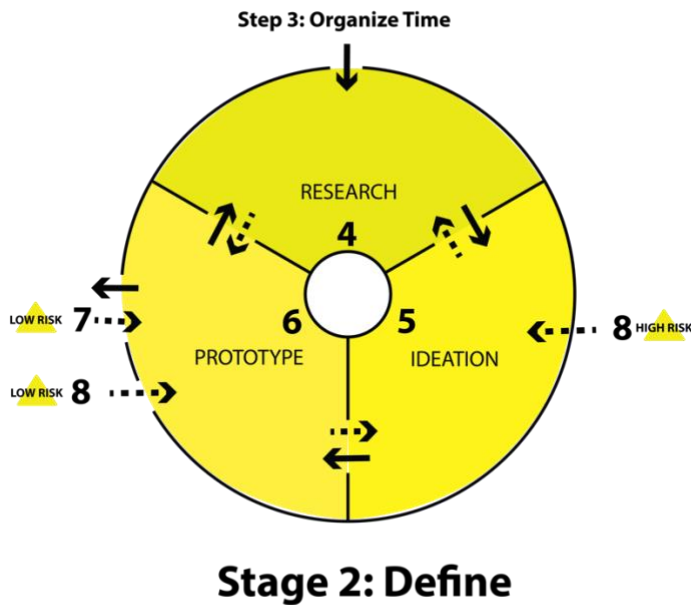
One will notice the first SDAD checkpoint in Step 3: Organize Time. This step serves as a catalyst for the SDAD to put time organization as a priority in their design process. By practicing self-management as an essential step instead of an optional step, the SDAD will discover the numerous advantages of time management and will more likely integrate this approach into tasks following graduation. One can reference this Self-Guided Time Management Worksheet in Appendix A.

Once the SDAD completes this third step, a no-return point is prompted to encourage the SDAD not to repeat the first stage. It is time for them to trust the work they have incorporated so far into their design process and feel confident that they have prepared for the next stages effectively.

3.5.2.2 Define: Stage 2

Figure 16

Top View of Spiral Staircase Approach: Stage 2: Define



Note. Top view of the second of the four main stages of the Spiral Staircase Approach.

The second stage of the SPR.S.A is the Define Stage, which includes the three steps: (1) research, (2) ideation, and (3) prototype.

The definition stage includes examples of two low risk returns and one high-risk return. The high-risk return exhibits how making a large jump rather than a small step back could be detrimental to a student's work-time balance, such as going from Step 8: Feedback in Figure 17 all the way back to Step 5: Ideation in Figure 16.

Even though this high-risk warning is administered into the approach in this way, it is there to facilitate design thinking throughout. It prompts the student to ponder the why behind repeating a completed step, giving a chance for self-growth, and personal curiosity and improvement.

Giving the SDAD full guided autonomy within the design process gives way for personalized decision-making the next time they contemplate a high-risk return. Students should first ask themselves if making that jump is vital to the completion of their project and for the betterment of their final deliverable and design.

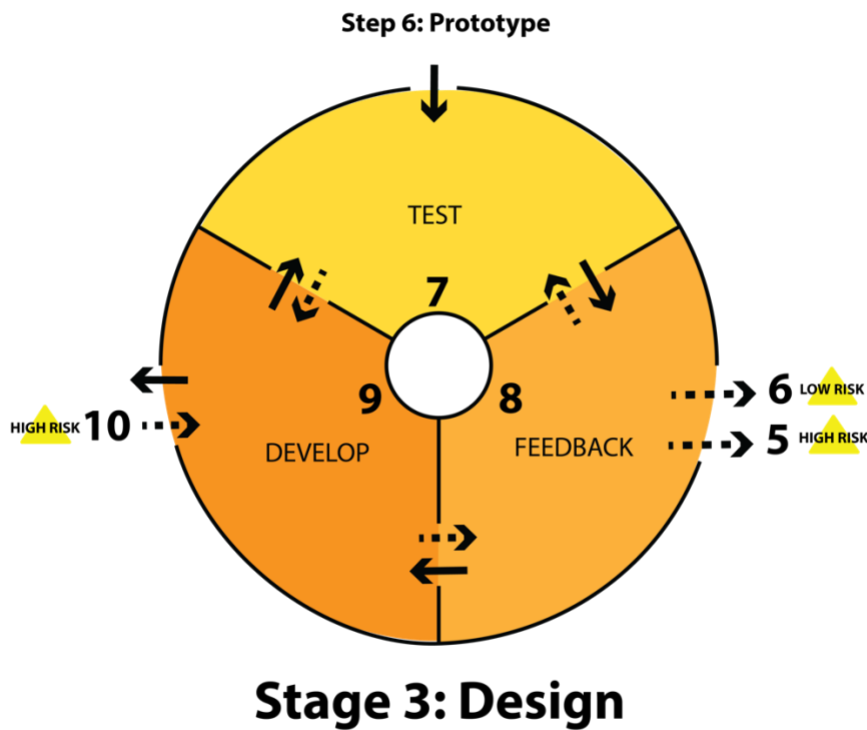
This define stage is also vital to the completion of a proper design process as it holds the three most commonly repeated steps in the previously discussed existing design methodologies in the literature review in Section 2.5.2.

Again, the revised Double Diamond in Figure 11 demonstrates the idea that Stage 2 and Stage 3 are anticipated to be the most commonly repeated and iterated upon steps among all four design process stages. The define stage of the design process is also where the SDAD can begin to untangle the knot, as shown in Figure 7, the Design Squiggle.

3.5.2.3 Design: Stage 3

Figure 17

Top View of Spiral Staircase Approach: Stage 3: Design



Note. Top view of the third of the four main stages of the SPR.S.A analogy.

The third stage of the SPR.S.A includes (1) Test, (2) Feedback, and (3) Develop. These three steps are derived from from the Test and Learn ideation stage shown in Figure 3 of the HCD Design Process (Tyre, 2024). In the HCD design process this phase includes converging and diverging. For the Spiral Staircase Approach, it is reduced into only divergence. This is due to

the fact this approach allows for a return to previous states of the design process. Stage Three is when the majority of high and low-risk return options begin to reveal themselves.

Step Three permits two high-risk and one low-risk warning. These options continue to allow the strength of individualistic choice within this model. The SDAD can return to prior steps in this stage as their specific time frame allows, though engaging in a high-risk return at Step 10 to Step 9 is not a point of no return. However, the SDAD should remember not to return more than twice (as time allows) to avoid analysis paralysis.

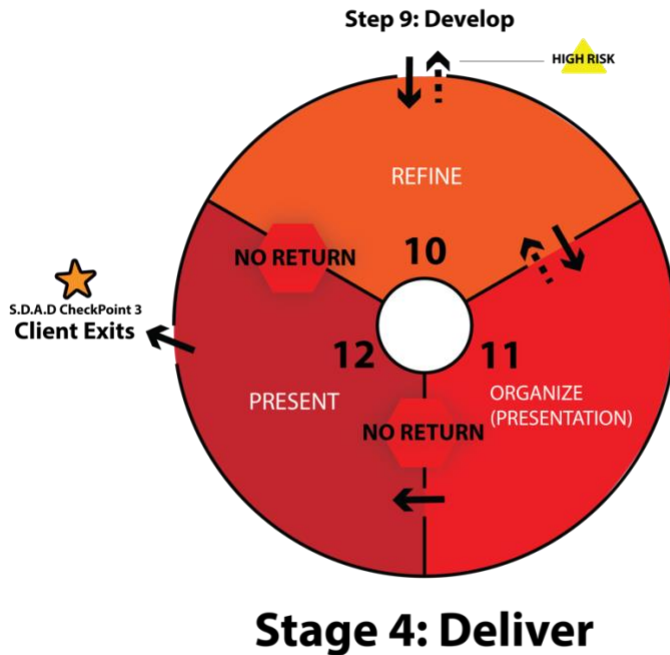
This second SDAD checkpoint is built and compiled to guide the SDAD through possible ADHD Paralysis symptoms and serves to aid the student in identifying which ADHD. Paralysis they may be battling. Though not a guaranteed way to break through, it can be a starting off point and source to begin working through the ADHD. This second SDAD checkpoint can be further viewed in Appendix B.

3.5.2.4 Deliver: Stage 4

Stage Four of the SPR.S.A is the deliver stage. This stage includes the final three steps: (1) Refine, (2) Organize the Presentation, and (3) Present. The final stage has the most no-return points of all four phases because the SDAD is near the end of the project. Given that the designer is at the final stage of the project, it would not benefit the student or the client to return to a previous step. Once a final solution and presentation are given, the project is commonly passed off to another individual to progress the project further. This is where the difference is most evident between the Spiral Staircase Approach and the Helix Model in Figure 9.

Figure 18

Top View of Spiral Staircase Approach: Stage 4: Deliver



Note. Top View of the Fourth of the Four Main Stages of the SPR.S.A analogy.

Refining the concept is essential to the designer and the design project as it would include answering the questions: How will the SDAD finish this? What is the best way to show the student’s client their concept? Will the SDAD final concept include a 3D render, a physical prototype, a final sketch, or a slide show presentation? This is the time to decide the best way to deliver the SDAD’s idea. If the best way is with a prototype or rendering, and the SDAD is not happy with their previous prototypes or renders, it would be helpful to use this approach to decide whether it is vital to return to Phase 3 and repeat the “Develop” Step.

If satisfied with the previous outcome of the Develop Step it is time to move on to organizing the concept presentation. This is a no-return step given that the assumption that the designer is content with the 2D and 3D sketches, including any renderings or prototypes for the purpose of showing the client in their final presentation. This step is vital to a person with ADHD since a person with ADHD may tend towards having a messy process first. If comparing to the Design Squiggle in Figure 7 this step is where the line is almost perfectly straight but for someone with ADHD, it may still need some un-knotting.

3.6 Integration of ADHD Checkpoints

“People with ADHD tend to have a shorter *time horizon* and ‘Future time Blindness,’ meaning that deadlines often enter their mental radar when it [is] too late,” (ADDA Editorial Team, 2024). Now, when working on one’s project, one can instead work with their ADHD to trick their brain into checking into a ‘Flow State’ (Palmer, 2023) to get a project done in time instead of “too Late” (ADDA Editorial Team, 2024). The Synthesis of the Design Methods previously covered in the literature review allows a Student with ADHD to begin to form not only a better understanding of the steps necessary to perform the Design Process but also to create their own process by creating a time management plan at the beginning and stave off Analysis Paralysis. This creates the opportunity for one to Self-Reflect –what worked and what did not– at the end of their project. The SPR.S.A combined with the three ADHD guides should potentially prepare the Design Student with ADHD for success as they practice with opportunities and design projects within the college classroom before entering the workplace.

3.6.1 ADHD Checkpoint 1: Time Management

The first checkpoint catered for the SDAD is found at the front of the SPR.S.A. in reference Figure 13 for visual. This ADHD checkpoint serves to encourage the SDAD to pause and re-evaluate their projects timeline in relevance to all existing and relevant work and social obligations. The SDAD Time Management Worksheets in Appendix A provides a vital framework to a student given that real-world time constraints can be less forgiving. If a student with ADHD can learn how to home in their personal time constraints, they can begin to be more equipped to enter the workplace.

What might make sense to someone with ADHD may not make sense to someone without ADHD. Therefore, how the SDAD approaches the process will not be as important as the final deliverable as long as time constraints are followed. Because SDADs often struggle with time management, the self-guided worksheets in the Appendix are intended to help.

When the student creates their timeline would be to set the dates one day ahead from the actual deadline from the person they report to. One area someone with ADHD will face adversity would be time management. A large portion of that struggle could be caused by a symptom of ADHD referred to as, ‘ADHD Paralysis or “Time Blindness,” (Team, 2024). An individual with ADHD ‘Time Blindness,’ will need a method to conquer deadlines and strict time budgets that are often if not always required in university semester teachers or in the quote-on-quote ‘Real world’ bosses. Thankfully there are already many time management strategies a designer can easily transfer from the business world into their own self-sufficient timeline as we discussed in depth in the literature review.

Creating a project timeline through a semester time block, the Pomodoro method, creating a brain dump list, learning the student’s peak productivity hours, reframing, and task

switching, etc. are all strategies that will be helpful to keep in mind while exploring these worksheets and when creating a semester project time block.

3.6.2 ADHD Checkpoint 2: Analysis Paralysis

It can be assumed that in between stage 2 and stage 3 is where a student with ADHD will most likely experience Analysis Paralysis, a significant challenge to many of those with ADHD (see Section 2.3.2.1). Within the Design Process, there is a gap in research as to where this may occur for a Designer.

If one references Appendix B, they will find the second SDAD self-guided worksheet to combat Analysis Paralysis. The worksheet contains an overview of three main types of ADHD paralysis adapted from (Team, A. E., 2024). This presents as a reminder to the SDAD and can prove useful to initiate a breakthrough of the pending analysis paralysis. If the SDAD can accurately identify which ADHD paralysis they are experiencing, they can more quickly re-embark into their SPR.S.A Design Process 12 Steps.

This second Worksheet then continues by referencing compiled adaptations of questions from the literature review about the three types of ADHD Paralysis on page 31. These questions facilitate personalization and identification for the student. It intertwines tactics and tips throughout to motivate the SDAD and re-engage their mind to the project at hand.

Included on the worksheet is a blank space to give homage to the brain dump tactic first seen by the student in the Time Management Worksheet in Appendix A. The SDAD is encouraged to complete Appendix A's Time Management Worksheet first but can use this given space as a temporary brain dump replacement. A second option is to use this space as a place to

sketch and relax first, a space intended to help the SDAD navigate mental paralysis (see Section 2.3.2.1.1).

3.6.3 ADHD Checkpoint 3: Self-Reflection

The SDAD Self-Reflection Worksheets in Appendix C can be implemented as a reflection period after the student completes the project and use of the Spiral Staircase Approach. When presenting the Design Process, it is to be used to help the student gather valuable information on what worked best for them individually. As the literature review affirms from the case study in *Strategies for Coping with Time-Related and Productivity Challenges of Young People with Learning Disabilities and Attention Deficit/Hyperactivity Disorder* (Kreider et al., 2019). Where they found self-evaluation and reflection critical to students in their study efforts.

With the Spiral Staircase Approach, a student is allowed fluency in between the steps of the process. If they find they are stuck and the best thing to do would be to first identify they are stuck in ADHD paralysis. Then identify which paralysis they are experiencing. They can then choose what they need to do next to be able to continue in their Design Project within their built time frame. This approach's analogy creates a goal for the student to get down the stairs and out the door in a timely manner.

The Self-Reflection guide presents opportunity for the SDAD improve with each project by tallying up their score from the Time Management Sheet Rewarding Point System and by also answering questions on how they used the SPR.S.A to their advantage and where they could maybe streamline it in the future. Because even though it is okay to repeat steps, as it is revealed in the literature review, outside of the education design environment the time constraints will be less independent and more dependent on the Designers ability to complete projects with time

efficiency due to the constraints of the company or teams time constraint. Therefore, is crucial to encourage improvement in properly managing and enhancing a person's personal design process.

3.7 Spiral Staircase Approach Conclusion

The prior chapter identifies not only the strengths, but also the struggles for the SDAD. In examining common design methodologies, self-regulation techniques, and corporate management strategies, an opportunity emerges to create a process that will help those with diagnosed ADHD stay, not only, on top of their work but thrive in the workplace after leaving the college environment. This chapter will serve to show the development of a design process approach to support Industrial Design Students with ADHD. Specifically addressing: (1) time management, (2) decision fatigue, and (3) analysis paralysis. This synthesized strategy will be utilized in a new tool, The Spiral Staircase Approach. Synthesizing proof of concepts and strategies that work for self-regulation, it allows for a field such as Industrial Design to become more inclusive to different design processes for individual thinking patterns. In creating the Spiral Staircase Approach, it becomes evident that the design process can be broken down into a non-linear strategic tool that allows the gamification of time management through high-risk and low-risk decision-making skills. This chapter covers the advantages and the disadvantages that come with ADHD and how this newly developed strategy will give the SDAD an individual project plan by breaking down the steps for easier mental consumption. Through the incorporation of three self-guided check-in points catered to the SDAD, this approach will allow the SDAD to not only create a product from start to finish but also begin to build their own individual skillset towards better self-management and increased knowledge on techniques that can help them succeed in ensuing project endeavors.

CHAPTER 4: PRACTICAL DESIGN APPLICATION

4.1 Introduction

This chapter serves as the application of the theoretical approach through hypothetical models and personas. Since this is a highly individualistic approach, it is essential to show two SDAD personas to compare and contrast the different possibilities of navigating the SPR.S.A. Combining the use of the SPR.S.A and SDAD checkpoints throughout give ample opportunity for the student's unique workflow to change and adapt to what works best for them. These two hypothetical case studies are examples of practical implications when the SDAD performs the Industrial Design creative process. Each hypothetical case has its own set of unique challenges and preferences. By taking the personas through each step of the SPR.S.A, the challenges and strengths of a SDAD become more evident. This chapter will explore those workable differences and similarities seen between two different types of SDAD.

At the end of this chapter, a comparative analysis will be conducted to give insight as to why one SDAD may choose different avenues and paths than the other while also showing how the differences and similarities between the SDAD lend their hand to insight for further research in this area of Industrial Design Students who have ADHD.

4.1.1 Validation of the Hypothetical Applications

The validation of this chapter comes from the combination of literature review findings, observational and personal experience, and adjusted persona prompts through ChatGPT. This practice of creating hypothetical practical applications of the SPR.S.A gives a realistic view of

how a SDAD may attempt the theoretical approach for the design process. This approach is not limited to these two types of archetypes, instead, this chapter is an avenue to begin tackling the overarching gap and theme identified for the SDAD, providing a possibility for educational discussions and potential impact on those who identify with the same challenges as the personas in this hypothetical application study.

4.2 Overview of the Personas

The two hypothetical cases discussed in this section are inspired by a ChatGPT prompt.

When asking ChatGPT:

Chat, can you give me two personas for my thesis. the thesis is about a new design process approach built to help Industrial Design College-aged students who have ADHD. There are specific stopping points throughout the approach that guide the student with ADHD to break through analysis paralysis and time management. The approach also allows students to go up and down the "stairs" or "steps" to create their own personalized workflow. I need to write about two different possibilities on how two different students or personas would go about using the approach in Chapter 4. Will you help me come up with the personas and maybe some of the differences?

Chat GPT responded with two personas with unique challenges and strengths that come with having ADHD in the design field. Refer to Appendix D for the full transcript of the Chat GPT's response as this section will pull from the advisory of the large language model. This chapter will not be following it exactly but adapting the created personas to make sure the literature review, the tool, and the hypothetical models align correctly, making sure this is the best use of if-then scenarios to communicate the usefulness of the Chapter 3 tools.

4.3 Project Brief

This chapter compares two students' project journeys and how they would go about pursuing the use of the SPR.S.A by incorporating the same project brief for both parties. This project brief was formed from personal experience working with sponsored studios and professors over the years at Auburn University as an Industrial Design Student. This will give better insight into the differences between the individual SDADs and their similarities. Such as, if they get stuck at the same points and how they go about their projects.

Figure 19

Hypothetical Logo for Pivot & Pickle Sports Inc.



Note. Example of the Project Brief Client’s logo Pivot & Pickle Sports Inc.

The project brief entails a hypothetical company: Pivot & Pickle Sports Inc. The company’s lead product manager has charged the two Industrial Design students to create the next innovative hybrid sports racket for the market. The key elements they are looking for in the final deliverable would be: (1) Well-crafted ergonomics and comfortability, (2) Material Innovation (3) Packaging and branding to complement Pivot&Pickle Sports Inc.’s brand, and (4) Gameplay innovation.

Both students have 15 weeks to complete this project with the final presentation scheduled for the end of the term. Hard deadlines for this project include 3 weeks of market

research and initial concepts, 4 weeks of concept refinement and initial designs, 6 weeks of developing prototypes and 3D sketches, and 1 week for final presentation preparation.

The target market the company representatives want to have the final deliverable to aim for are performance-driven individuals who are always looking for the next all-in-one solution to better their gameplay and endurance. Versatility is vital for both recreational racket players and professionals. The new innovative hybrid racket should reach and represent both groups. One can read the full project brief in Appendix E.

4.4 Persona Case 1: Ava

The first persona is Ava, a 20-year-old female Industrial Design student in her second year of undergraduate study. Ava was diagnosed with ADHD late in life, in her freshman year of college. Her diagnosis is inattentive ADHD, one of the three subtypes of ADHD discussed in Section 2.3.1. As referenced in Section 2.3.1, this type goes undetected because the symptoms are more subtle than those associated with stereotypical individuals with ADHD.

Figure 20

Picture of Ava



Note. Stock image of Ava to give a more realistic visual. *From* Adobe Stock, [Rido]. (2024). Smiling college girl studying in classroom [Stock image]. Adobe Stock. https://stock.adobe.com/images/smiling-college-girl-studying-in-classroom/397755531?prev_url=detail

Ava's strengths include being creative and a big-picture thinker. She also has the ability to hyperfocus and loves the ideation phase of the design process. However, her ability to hyperfocus can be a challenge as she will sometimes neglect other ideas to start a new one. Other challenges for Ava include: (1) becoming overwhelmed with too many details, (2) time management, (3) organization, (4) prioritization of tasks, and (5) focus.

4.4.1 Initial Challenges

Ava has always struggled with organization and focus and can get quickly overwhelmed by too many details. This can stump her at the beginning of the design process because she tends to slip into a thought spiral that leads to her dwelling on how overwhelming all the details seem, meaning she has a hard time focusing on one task at a time on the steps to get to the big-picture finish.

Because of her inattentive ADHD, estimating the time a task will take becomes a factor in her inability to manage her time well, as referenced in Section 2.3.1. Ava may be in the middle of a project or task and lose track of time, resulting in the incompleteness of the task at hand. This has always frustrated Ava as she is a good student who tries her hardest to get her projects finished on time and wants to do her best. She may think to herself, “What if this new idea is better than the one, I am currently working on?” and “Should I just start over? Surely, I have enough time if I hyperfocus and get it done.”

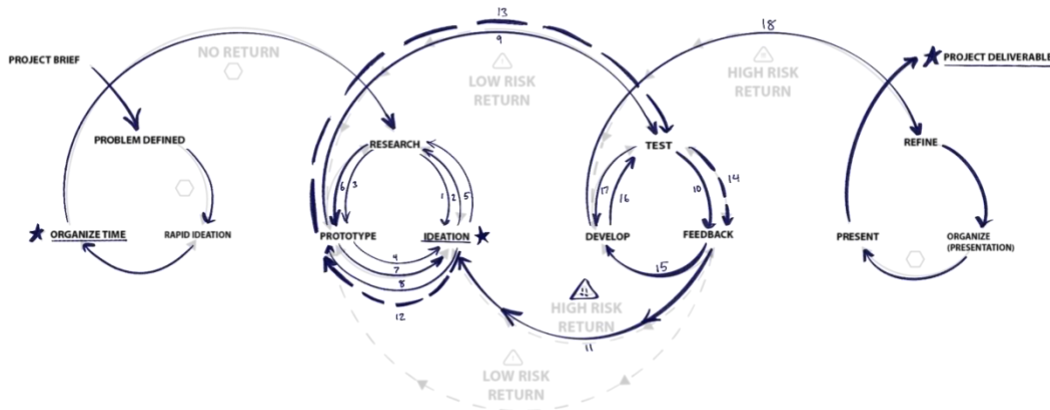
Ava’s hyperfocus ability can be used as a strength but can cause her to become deleterious to her project’s timeline and overall outcome if she spends too much time on one step alone. Ava adores the ideation phase of the common practice design process and could spend forever brainstorming and coming up with new ideas, each better and different than the last. This can get her in trouble later in her design process as she will want to return and start over if she feels it is worth the effort or becomes more passionate about the new idea. If she becomes passionate about the new idea, she may lose interest in her current task built off the old idea. This can result in boredom and strain the mind of someone with ADHD, as referenced in Section 2.3.2.1.1, making it harder to continue and finish the project overall.

4.4.2 Application of the SPR.S.A

How Ava goes about completing the SPR.S.A will differ from other students because of the three main initial challenges that Ava faces being a SDAD. Ava gravitates toward the SPR.S.A because she does not like the feeling of being overwhelmed by the entire project. She appreciates the structured [risks] at each step because it allows her to reflect on whether she's [still] moving toward the right direction," (ChatGPT, 2024, see Appendix E for full transcript) for her project.

Figure 21

Ava's Personal Design Process through the Use of the SPR.S.A.



Note. A visual of Ava's process through her most plausible use of the template is provided in Appendix C.

Here in Figure 21 is a full example of how Ava would most likely go through the design process through the lens of the SPR.S.A. Notice the repetition in the Ideation Step. As it stated in Section 4.3.1, Ava finds herself often stuck on the Ideation Step as she gets more and more

excited for each idea that comes leaving initial ideas abandoned and her unable to move her project past ideation.

Ava used dashed lines to show she was repeating a whole stage and made a mark to indicate that she recognized it was a high-risk move. This prompted Ava to check out the Analysis Paralysis guide. Note the star in Figure 21 beside the Ideation Step. This would be Ava recognizing she was stuck in a loop and where she needed to refer to the Analysis Paralysis Worksheet in Appendix B to help her overcome this specific challenge and get her excited to continue the project—discussed further in Section 4.3.2.2.

4.4.2.1 Scenario 1: Ava’s Time Management Application

As referenced in Section 2.3.2.2, a SDAD might experience a potential challenge when it comes to organizing their time. Now, here is an example of Ava’s experience with organizing her project brief. In Section 4.3.1 Ava’s initial challenges include that she often struggles with small details and can get overwhelmed quickly since she is better at seeing the big picture rather than breaking down the details into steps that keep her moving through the project design process. This relates to time management because this challenge could stop a student from beginning a project and could slow them down later if they had not taken the time to make a plan as discussed in Section 3.4.2.1.

Figure 22

Ava's Time Management Worksheet 1

1A SDAD Time Management Worksheet

Use this guide to break down your projects timeline, this guide is built to work with the Spiral Staircase Approach.

Name: Ava Date: January 6th, 2025
Project Name: Pivot & Pickle Sponsored Studio Project Duration: 15 Weeks

Re-write your Project Brief Here:

To design an innovative new racket that combines sports for common gameplay + professional gameplay.

FINAL DELIVERABLE	TARGET MARKET
-ergonomic -comfortable -innovative materials -complimentary branding -Gameplay innovation	-recreational + professional players - performance-driven individuals

Due Date Dumplist:

Mind dump the biggest deliverables from the Brief: Now write them in order of their due date:

Research presentation	1. Research Presentation - Jan 27 th
Initial concepts	2. Initial Concepts Presentation - Feb 10 th
Refined concepts	3. Final Concepts Presentation - Feb 27 th
Final 2D sketch concepts	4. Soft Prototypes Due - March 10 th
Final Presentation	5. Initial CAD Models Due - March 17 th
	6. Final CAD renders - March 28 th
	7. Final Prototypes - April 7 th
	8. Presentation Slides Due - April 14 th
	9. Presentation Final - April 15 th
	10. ☺

** Go to Time Block Template to begin plugging in these main dates and organize your semester**

Note. A scan of how Ava would most likely fill out the first page of the SDAD Time Management Worksheet in Appendix A.

Using the first worksheet in Appendix A, Ava is able to mind dump all her important due dates and then prioritize them in order of when they are due or the most prevalent. A student may use this differently by choosing to include only the main due dates given by a teacher in a syllabus or the due dates of smaller steps taken from the SPR.S.A steps. Here, in Figure 22 one can see how Ava has chosen to use the main due dates given to her via the project brief in Appendix E.

At the top of the worksheet, a place to re-write the project brief helps Ava put into her own words what the client is asking. This will help students jump-start where they need to begin on the SPR.S.A. Creating a space for a student, such as Ava, to record what the final goal is of the project. The student can then refer back to this worksheet when stuck. Another time to refer back to this worksheet would be when the student is organizing the final presentation on Step 11 of the SPR.S.A. Ava's use of the due date dump list will be continued over into the time block worksheet in Figure 23.

Figure 23

Ava's Time Management Worksheet 2 – Time Block

Date:	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
01/06	Kickoff!						
01/13						Friends Wedding!	
01/20							
01/27	Research Presentation						
02/03							
02/10	Initial Sketches Due!						
02/17			Sister's Birthday!				
02/24	Final Concepts!						
03/03							
03/10	Final Prototypes Due!						
03/17	First/working CAD models						
03/24					Final CAD models Due!		
03/31							
04/07	Final Prototypes Due!						
04/14	Presentation Slides!	Final Presentation					
04/21					Summer!		

10

Note. A scan of how Ava would most likely fill out the Time Block Page of the SDAD Time Management Worksheet in Appendix A.

Ava's use of the Time Block sheet in Appendix A is interesting as she chooses to highlight the biggest due dates written out on the first Time Management Worksheet in Figure 22. Ava then includes her personal calendar dates. This is significant for Ava to include as these personal dates could prevent her from finishing a step or getting a syllabus due date finished on time. This is good practice in general as it would be easy for not only Ava but anyone to push their projects to the very last second and possibly neglect work-life balance. For example, Ava decided to block off her Sundays, planning to give herself a break from school and work to prepare for the next week.

Neglecting to form a good work-life balance could increase stress that could lead to triggering analysis paralysis for a person with ADHD. As we read in Section 2.3.2.1.1, mental paralysis comes about when a person is overwhelmed with thoughts, emotions, and stress. Too much information can also induce mental paralysis. Placing the most important information on the time management worksheet is an excellent visual for Ava before she continues the SPR.S.A. Since she is used to visualizing the big picture, this worksheet gives her the chance to plan and visualize the small details in between in an organized way, overall reducing stress, preventing Mental Paralysis, and personalizing her steps to succeed in her project. This will help to prevent feeling overwhelmed later in her semester.

4.4.2.2 Scenario 2: Analysis Paralysis in Ideation

After completing the Time Management Worksheets and continuing in the SPR.S.A steps, Ava has come to a stop. She becomes stuck and notices a pattern of repeating the Design Phase, specifically, Step 5: Ideation. Once she goes past Ideation, she continually finds herself unmotivated and mentally exhausted. She makes a mental note that this could be her ADHD symptoms but is not sure if that is what is happening— she feels burnt out and does not love where her project is headed. When she makes the high-risk return to the ideation phase for the final time in Figure 21, Ava decides to visit the Analysis Paralysis Worksheets in Appendix B. It is important to note this choice made by Ava as it shows self-management skills and identification that it could prove helpful for her to break an inefficient loop.

Beginning with the first Analysis Paralysis Worksheet in Appendix B, Ava is prompted to take a break in Figure 24. This sketch break is to allow Ava to rest her mind, since she is an Industrial Design student she finds this a nice chance to just doodle. The hypothetical student does not have to create an official sketch in this space but takes a relaxed chance to reduce her stress. This stress could be the culprit to her feeling overwhelmed. Therefore, a good place to start to attempt breaking down her ADHD Paralysis.

At the bottom of the worksheet is an opportunity for Ava to recall how the three subtypes of ADHD Paralysis can present themselves. After reading the different types of ADHD paralysis Ava understands she is experiencing both mental and task paralysis which was discussed in Section 2.3.2.1.1. Ava here represents a person who may experience more than one type of ADHD paralysis at a time.

Figure 25

Ava's Analysis Paralysis Worksheet - 2

2B SDAD Analysis Paralysis Worksheet

Use this guide to break through your ADHD Paralysis, Answer these questions to begin figuring out what to do next.

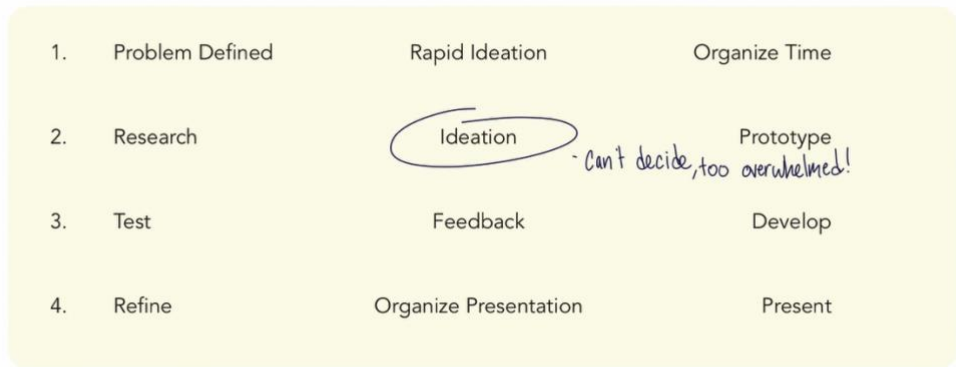
Name: Ava

Date: February 3, 2025

Project Name: Pivot & Pickie Sponsored Studio

Project Duration: 15 Weeks

Which step are you stuck on that's preventing you from moving forward?



1. Have you completed the Time Management Worksheet's Brain Dump/Reprioritize Section? Y / N

If yes, try to focus on the easiest/quickest task as hand first to break the task initiation freeze.

If no, use this space below to brain dump the tasks you're overwhelmed with, then reprioritize from easiest to most daunting.

Task Dump - Prioritize & Organize

- write down all ideas
- Sketch out favorite or all
- talk to friends/brainstorm together
(see which ones they like)
- quick research to see if any have already been made
- Start prototyping to see if it's possible?
- need new markers
-
-
-
-

1. Quick research
2. Buy new markers or borrow
3. Write down all ideas (immediate)
4. Talk to friends / begin sketches
5. Brainstorm + envision how I would pitch this at Presentation
6. Make Powerpoint
- 7.
- 8.
- 9.
- 10.

Note. A scan of how Ava would most likely fill out the second page of the SDAD Analysis Paralysis Worksheet in Appendix B.

Ava completes the second page of the Analysis Paralysis guide. After relaxing her mind and identifying which type of ADHD Paralysis she is experiencing, the sheet prompts Ava to record what step of the SPR.S.A she was on when she began experiencing her paralysis. This ties Ava back in with the SPR.S.A and gives her a chance to remember where she struggled the most in her individual process. This will be used later in the self-reflection worksheet in Section 4.3.2.2 and Appendix C.

Figure 26

Ava's Analysis Paralysis Worksheet 3

2C SDAD Analysis Paralysis Worksheet

Use this guide to break through your ADHD Paralysis, Answer these questions to begin figuring out what to do next.

Name: Ava Date: February 3, 2025
Project Name: Pivot & Pickle Sponsored Studio Project Duration: 15 Weeks

Questions to help get your mind moving and make a plan to break through this step:

1. Movement

2. When was the last time you got up and moved around? circle which form(s) of movements helps you relax & go do it!

Walking around	Tennis	Football	
Stretching	Running	Basketball	Yoga/Pilates
Dancing	Pickleball	Weight Lifting	

Other: _____

2. Simplify

1. What one thing can you accomplish right now? quick sketches to get the ideas out of my head!

2. Choose a Pomodoro Method time split to try out: circle one

25/5 mins	50/10mins	75/15 mins	90/30 mins
-----------	-----------	------------	------------

3. How many rounds would you like to get out of your Pomodoro Session to give yourself a reward? 4-5

4. How many did you get? 6!

5. Are you on a Team or is it an Individual Project? circle: Team or Individual Project

6. If team, is it appropriate to delegate any of the tasks from your brain dump? Y / N

If yes to both questions above, don't be afraid to ask for help to reduce the number of tasks you have.

Note. A scan of how Ava would most likely fill out the third page of the SDAD Analysis Paralysis Worksheet in Appendix B.

Ava uses the third worksheet of the Analysis Paralysis worksheet in Appendix B. Here a student can record their interests in exercise. This is to encourage movement. As seen in Section 2.3.2.1.2, movement is good for students with ADHD. Small breaks of movement can improve a student's focus and help overcome mental paralysis. Since Ava circled, she was experiencing mental and task paralysis taking a break for movement and exercise could prove helpful for her. This page is meant to serve only as a reminder of options she already knows she enjoys to help her break her paralysis. There is also the reminder of simplifying tasks through the Pomodoro Method. In this example in Figure 26, Ava finishes more Pomodoro rounds than she originally planned to.

Figure 27

Ava's Analysis Paralysis Worksheet 4

2D SDAD Analysis Paralysis Worksheet

Use this guide to break through your ADHD Paralysis, Answer these questions to begin figuring out what to do next.

Name: Ava Date: February 3, 2025
Project Name: Pivot & Pickie Sponsored Studio Project Duration: 15 Weeks

3. Interests/Rewards

1. Do you just feel unmotivated because you're not invested in your project? Y N

2. What is something you are interested in that will make you more excited to work? Circle something you're interested in!

exercise	guitar	<u>music</u>	
drawing	technology	sports	movies
media	cooking	photography	

Other: Ux/UI

2. Can this interest be incorporated into your Design Project to keep you engaged in your tasks? If so, how:
Wait! Maybe! I could create an app to go with the new racket that tracks your hits and wrist movement!

3. Can this interest be a reward for completing a task or finishing your Pomodoro rounds? Y/ N ch...

4. If no, Pick a reward to give yourself that will motivate you to complete the tasks ahead of you:
(i.e. a sweet treat, a walk, a new item, new packet of stickers, etc.) A Nutrition Tea!

4. General

Circle the tactics you are going to give a try to break through your ADHD paralysis:

	Re-Prioritizing Tasks	Simplifying Tasks	
<u>Pomodoro Method</u>	<u>Rewards/Incentives</u>	<u>Adding in Interests</u>	Mind Dump
Delegating Tasks		<u>Moving Around/Movement Breaks</u>	

Note. A scan of how Ava would most likely fill out the fourth page of the SDAD Analysis Paralysis Worksheet in Appendix B.

Ava fills out the final sheet of the Analysis Paralysis Worksheet in Appendix B. A breakthrough is made. Since Ava discovered her mental paralysis may be due to boredom in her original concept, through filling out the interests and rewards section of the worksheet she was reminded of some interests that sparked an, “Aha!” moment.

Remembering she enjoys UX/UI and is in pursuit of that career field she has an idea on how to incorporate UX/UI into her hybrid racket with an app that could tell the player how their swing is looking and coach them through their game.

Ava also decides this interest is not a great way to reward herself. She did not choose to participate in the points system rewards; she has chosen a sweet treat for her reward. This is an example of how each individual SDAD may have different motivations. This worksheet gives the student an opportunity to explore that and see what works each time.

The final part of the worksheet has a section for Ava to mark which general tactics she could try to motivate her to work and break-through ADHD paralysis. She chooses: (1) Pomodoro Method, (2) Rewards/Incentives, (3) Adding in interests, and (4) Movement breaks. These are important to record as they will show up later when Ava reflects on the project and what helped her the most in the SPR.S.A in Section 4.3.2.2.

4.4.2.3 Scenario 3: Ava’s Self-Reflection

Once Ava completes her project and has presented her final deliverable to the Pivot & Pickle Sports Inc. Product Manager and Designer, she is ecstatic and proud of her accomplishment. She enjoyed the SPR.S.A and is planning on using the steps approach and worksheets again. In Figure 28, one can see how Ava’s process looked for her as an example for how one student may personalize their experience.

Figure 29

Ava's Self-Reflection Worksheet 2

3B SDAD Self-Reflection Worksheet

Use this guide to keep track of how this project went for you, this guide is built to work with the SP.SR.Approach.

Name: Ava Date: April 16, 2025
 Project Name: Pivot & Pickle Sponsored Studio Project Duration: 15 Weeks

Congratulations on Completing your Project!

Answer the questions below to begin recording your progress on the design process with each project you accomplish!

1. Was this project a team or individual project? circle: Team Individual
2. Did you finish on time? (Y) N ; if no, how long did it take you past due date: _____
3. At any point did you experience ADHD Paralysis? (Y) N ; if yes, at which step? Ideation
4. Which type of A.D.H.D. Paralysis did you experience? circle which one(s): Mental Task Choice
5. Which tactic(s) of the Analysis Paralysis guide were most helpful to you? Sketching + Interests/Rewards!
6. Which Stage are you most proud of / felt you exceeded in the most? Develop + Test (Stage 3)
7. Which Stage took you the longest, that you should account for more time in the next project? Ideation
+ organizing Time / Presentation!
8. Did you use the Time Management Work Sheet? (Y) N ; if yes, was it helpful? (fill out chart on the next page to get your final score!)
But not the points, had my own reward system!
9. Did you repeat any steps? mark which ones and the amount of times you repeated them. (use the template to count your steps)

<u>Ø</u> 1. Problem Defined <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Rapid Ideation <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Organize Time <input checked="" type="checkbox"/>
<u>1</u> 2. Research <u>2</u>	<u>3</u> Ideation <u>3</u>	<u>3</u> Prototype <u>3</u>
<u>Ø</u> 3. Test <u>1</u>	<u>1</u> Feedback <u>1</u>	<u>1</u> Develop <u>1</u>
<u>Ø</u> 4. Refine <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Organize Presentation <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Present <input checked="" type="checkbox"/>

Note. A scan of how Ava would most likely fill out the second page of the SDAD Self-Reflection Worksheet in Appendix C.

In Figure 29, Ava identifies the stages and steps that she experiences: (1) Analysis Paralysis, (2) Repetition, (3) High achievement. Ava experienced Mental and Task Paralysis during Step 5: Ideation of the Spiral Staircase Approach. She also chose multiple tactics to help overcome her mental and task paralysis during Step 5: Ideation in Figure 16. Out of those tactics she recorded in Figure 27, the sketching and using interests and rewards helped her the most. As one can recall, Ava's breakthrough was through writing down her interests and how she could incorporate them into her project.

While Ava records which step she exceeded in, development and testing, she also records in Figure 29, the steps that took her the longest. Those steps would be ideation and organizing her time and her presentation. These are important to record in her use of the SPR.S.A for her next project. She will already have a better idea of which steps she should accommodate more time for in her personal and school time management plans.

This worksheet in Figure 29 is also where Ava records she had chosen to opt out of the built-in optional points reward system. This is important to note as it will come into reason when observing the comparative analysis in Section 4.5 between two personas. Below in Figure 30, is an example of what Ava's points would have accumulated to if she had chosen to opt into using the points as a way of rewarding herself and as a form of self-reflection on her progress as a student designer. This example helps show the diversity in the point system. The baseline of the points includes 10 points for each step completed and not repeated. Ava completed each step of the Spiral Staircase Approach and was awarded 120 points. She was deducted 10 points for the ideation phase as she had previously recorded in Figure 29 that she repeated this stage.

Figure 31

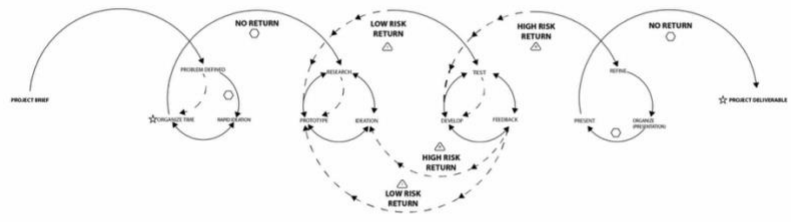
Ava's Self-Reflection Worksheet 4

3D SDAD Self-Reflection Worksheet

Use this guide to keep track of how this project went for you, this guide is built to work with the SP.SR.Approach.

Name: *Ava* Date: *April 16, 2025*
Project Name: *Pivot & Pexie Sponsored Studio* Project Duration: *15 Weeks*

Mark your favorite steps and the ones you became stuck/struggled with the most:



Notes for your next project: (Include what you would do different and keep the same)

- Such a fun Project! Realized I got excited about it once I incorporated UX/UI into my final deliverable. Was able to turn on my hyperfocus!
- Didn't realize how much time I was wasting by scrapping original ideas so often.
 - ↳ Maybe need to organize my time first then rapid ideation to get all my ideas out ASAP!
- I really excel once I get past ideation & can hyperfocus during the develop & prototype phase!
- The Dancing break/Pomodoro Method/ & Rewards tactics worked best for me when I felt stuck.

Note. A scan of how Ava would most likely fill out the fourth page of the SDAD Self-Reflection Worksheet in Appendix C.

In Ava's final Self-Reflection worksheet in Figure 31, she records her final thoughts on how the project went, what she liked and disliked about the SPR.S.A., and what she may do differently next project.

This is where Ava acknowledges her mental paralysis breakthrough from Figure 27. She realized she was able to hyperfocus and get excited about the project once she was reminded how much she enjoyed UX/UI design. Implementing something she was interested in as suggested in Figure 27, helped Ava overcome her analysis paralysis.

Having a place to write these traits and habits down at the end of the project is helpful for the student as seen in Section 2.3.4.3.

4.5 Persona Case 2: Ethan

Enter the second persona case, Ethan. Ethan is a 21-year-old male Industrial Design student in his third year of undergraduate study. Ethan has some studio experience under his belt, so he has started to notice a pattern of things he struggles with that the other students in his studios don't struggle with when working on the same project. Ethan shows common ADHD traits and symptoms and suspects he may have ADHD but has not gotten an official diagnosis.

Using Ethan as a persona case is great to strengthen the use of the SPR.S.A. as it shows the tool is meant to be used universally. Ethan is self-diagnosed with ADHD traits; therefore, the tactics from the Worksheets in Appendix A, B, and C should be helpful for Ethan as well as they were for Ava.

Figure 30

Picture of Ethan



Note. Stock image of Ethan to give a more realistic visual. *From* Adobe Stock, [Natalia]. (2024). Portrait of a smiling young man wearing headphones. [Stock image]. Adobe Stock. <https://tinyurl.com/4zhrdfjf>

4.5.1 Initial Challenges

Some of the challenges Ethan has noticed he struggles with over the course of his lifetime include the following: (1) staying on task (2) estimation of time/time management (3) focus (4) small details (5) decision fatigue, and (6) overall organization. These challenges that Ethan faces constantly in his academic career have proved frustrating to Ethan as is always striving to be better and self-improve. He knows his ideas are great and that he has true potential as an industrial designer if he could learn to streamline his process. His decision fatigue is the main

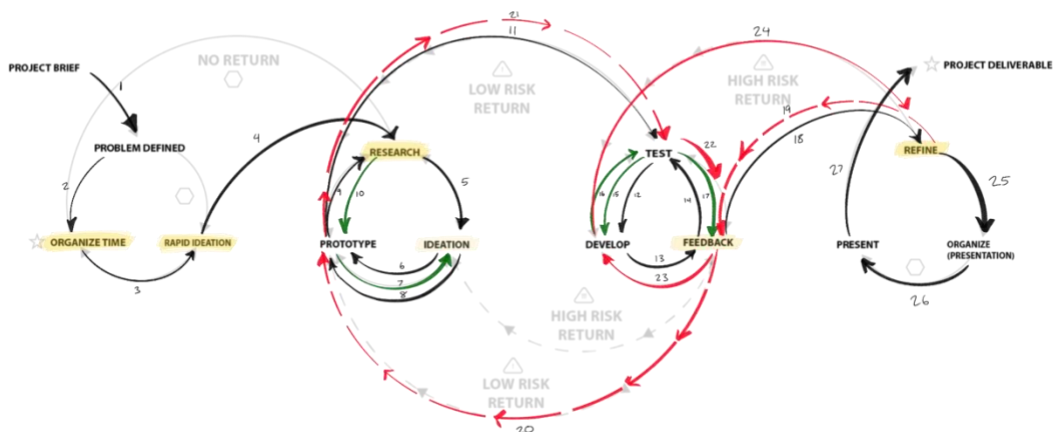
problem to tackle, Ethan is hopeful the SPR.S.A structured nature will help him not get as bogged down with small details as in the past. Ethan’s methodical personality as an SDAD, even self-diagnosed, fits well for the SPR.S.A.

4.5.2 Application of the SPR.S.A

Ethan likes and appreciates the step-by-step nature of the SPR.S.A since he often struggles with decision fatigue. This approach gives Ethan a direct decision approach, reducing the number of decisions he must make in his design process. The structure of the approach also allows Ethan to, “find comfort in having clearly defined phases to work through,” (ChatGPT, 2024)

Figure 32

Ethan’s Personal Design Process through the use of the SPR.S.A.



Note. A visual of Ethan’s process through his most plausible use of the template is provided in Appendix C.

Figure 32 shows how Ethan would most likely go through the design process with the given project brief and timeline. This information is gathered from what is known about Ethan and his strengths and challenges. Immediate notice is the difference between Ava's personal design process model and Ethan's. Though they both used the same project brief and the same SPR.S.A, they both repeated and struggled at different steps while also excelling at different steps due to personal preferences and traits. Yet they both found success in breaking through their ADHD paralysis, which will be discussed in further detail in Section 4.6.

By using this SPR.S.A visual for Ethan one can begin to understand how Ethan may go about working with the SDAD Worksheets provided for individual scenario use.

4.5.2.1 Scenario 1: Ethan's Time Management Application

The first scenario for Ethan appears right at the beginning. Ethan decides to go straight into organizing his time rather than rapid ideation as the SPR.S.A suggests. This is an example of how a student can personalize the SPR.S.A tool as they are only suggestions for when a student does not know what to do next. In this scenario, Ethan knew exactly what he wanted to do.

By repeating the project brief in his own words, Ethan is able to quickly take in his final goal for this project. He lists out the goals of the client, the target market, and the constraints. This is a common practice starting point for most projects and will be a good place for Ethan to revisit when he gets to Step 11 of the SPR.S.A: Organizing the Presentation.

The due date dump list is used differently than Ava in Section 4.3.2.1. Ethan normally gets bogged down with small details so only separating the important dates through four sections is a good way for him to self-regulate and not overwhelm himself too quickly or too early.

Here Ethan takes those same four sections of important dates and applies them to the time block sheet shown in Appendix A. In comparison to Ava's in Section 4.3.2.1. Ethan leaves out personal dates and includes the full week. Ethan's internal dialogue for this example would most likely be, "I might as well use every bit of time I have." since he knows in the past it has taken him every bit of time available. Ethan hopes to gain better time management skills with this approach and is willing to try anything to improve. But he knows seeing the whole semester in blocks like this helps him picture the goal much better and is less stress-inducing for him to start with.

Figure 33

Ethan's Time Management Worksheet – 1.1

1A SDAD Time Management Worksheet

Use this guide to break down your projects timeline, this guide is built to work with the Spiral Staircase Approach.

Name: **ETHAN** Date: **01-06-25**
Project Name: **PIVOT + PICKLE STUDIO** Project Duration: **15-weeks**

Re-write your Project Brief Here:

PIVOT + PICKLE SPORTS INC.

<u>GOALS</u>	<u>TARGET MARKET</u>	<u>CONSTRAINTS</u>
<ul style="list-style-type: none">· ERGONOMICS· COMFORTABILITY· MATERIAL INNOVATION· VERSATILITY	<ul style="list-style-type: none">· PROFESSIONALS· REGULAR JOES· LARGE AGE-RANGE ↳ MULTI-GENERATIONAL	<ul style="list-style-type: none">· MUST BE A HYBRID RACKET· PACKAGING + COLORS MUST MATCH THEIR BRAND.

Due Date Dumplist:

Mind dump the biggest deliverables from the Brief:	Now write them in order of their due date:																				
<ul style="list-style-type: none">· 3 WEEKS OF MKRT RESEARCH· 4 WEEKS OF DESIGN· 6 WEEKS OF PROTOTYPING /BUILDING· 1 WEEK B4 PRESENTING	<table style="width: 100%; border-collapse: collapse;"><tbody><tr><td style="width: 50%;">1. RESEARCH</td><td style="width: 50%;">- JAN</td></tr><tr><td>2. DESIGN</td><td>- FEB</td></tr><tr><td>3. BUILD</td><td>- MARCH</td></tr><tr><td>4. PRESENT</td><td>- APRIL</td></tr><tr><td>5.</td><td></td></tr><tr><td>6.</td><td></td></tr><tr><td>7.</td><td></td></tr><tr><td>8.</td><td></td></tr><tr><td>9.</td><td></td></tr><tr><td>10.</td><td></td></tr></tbody></table>	1. RESEARCH	- JAN	2. DESIGN	- FEB	3. BUILD	- MARCH	4. PRESENT	- APRIL	5.		6.		7.		8.		9.		10.	
1. RESEARCH	- JAN																				
2. DESIGN	- FEB																				
3. BUILD	- MARCH																				
4. PRESENT	- APRIL																				
5.																					
6.																					
7.																					
8.																					
9.																					
10.																					

**** Go to Time Block Template to begin plugging in these main dates and organize your semester****

Note. A scan of how Ethan would most likely fill out the first page of the SDAD Time Management Worksheet in Appendix B.

Figure 34

Ethan's Time Management Worksheet – 1.2

Date:	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
WEEK 1							
WEEK 2	RESEARCH						
WEEK 3							
WEEK 4							
WEEK 5	DESIGN						
WEEK 6							
WEEK 7							
WEEK 8							
WEEK 9							
WEEK 10	BUILD						
WEEK 11							
WEEK 12							
WEEK 13							
WEEK 14							
WEEK 15		PRESENT					

10

Note. A scan of how Ethan would most likely fill out the first page of the SDAD Time Management Worksheet in Appendix B.

4.5.2.1.1 Worksheet application: Rapid Ideation

Ethan has hit his first snag in the project. Ethan has just entered the rapid ideation phase and immediately is stumped. He finds the time management page in Appendix A helpful as it allows him to mind dump all the tasks and re-organize them from easiest to hardest.

One can see in Figure 32, and above (see Section 4.5.2.1) how Ethan skipped the Rapid Ideation step of the SPR.S.A. and chose to organize his time first. This is allowed within the SPR.S.A and even encouraged if it helps the student's process. But this has left Ethan stuck and feeling like he does not know where to start for rapid ideation. Before filling out the Analysis Paralysis Guides, Ethan decides to use the rest of Time Management Sheets to dump list his tasks and re-prioritize them to get him started. This is helpful to Ethan because as the kickoff of the project begins his minds races with all there is to do. See Figure 35 for how Ethan works out his internal thoughts to overcome his first ADHD paralysis scenario.

Figure 35

Ethan's Time Management Worksheet – 1.3

1B SDAD Time Management Worksheet

Use this sheet to break down tasks when feeling overwhelmed. Print as many as needed for each step.

Name: ETHAN Project Name: PIVOT + PICKLE
Stage: 1 Step: RAPID IDEATION

What do I need to do to finish this step?

Dumplist the Tasks:	Circle the Difficulty Level: 1-5
• FIND MARKERS	• ———●———
• START SKETCHING	• ———●———
• WRITE DOWN IMMEDIATE IDEAS	• ———●———
• TALK TO CLASS	• ———●———
• BRAINSTORM	• ———●———
• FIGURE OUT GOAL	• ———●———
• QUICK GOOGLE SEARCH	• ———●———
•	• ———●———
•	• ———●———
•	• ———●———

Order the Tasks Above From Easiest to Hardest:	How will I accomplish these?
<input checked="" type="checkbox"/> 1. QUICK GOOGLE SEARCH	•
<input checked="" type="checkbox"/> 2. BRAINSTORM	•
<input checked="" type="checkbox"/> 3. WRITE DOWN IMMEDIATE IDEAS	•
<input checked="" type="checkbox"/> 4. FIGURE OUT GOAL	•
<input checked="" type="checkbox"/> 5. TALK TO CLASS	•
<input checked="" type="checkbox"/> 6. START SKETCHING	•
<input type="checkbox"/> 7. FIND MARKERS	•
<input type="checkbox"/> 8.	•
<input type="checkbox"/> 9.	•
<input type="checkbox"/> 10.	•

LOOK UNDER DESK AT HOME
↳ GO BUY NEW IF CAN'T FIND

Note. A scan of how Ethan would most likely fill out the first page of the SDAD Time Management Worksheet in Appendix B.

By re-organizing his thoughts in this way, it becomes evident to Ethan which steps are easiest for him to complete. This makes the phase less daunting, allowing him to finish the phases with ease, perhaps leaving Ethan with an internal dialogue of, “Huh, this might not take long at all!”

Figure 36

Ethan's Time Management Worksheet – 1.4

1C SDAD Time Management Worksheet

Use this sheet to keep a time record of how long you thought a task would take versus how long it actually took.

Name: ETHAN
 Stage: 1

Project Name: PIVOT + PICKLE
 Step: RAPID IDEATION

Assumed time the tasks will take:	How long the tasks actually took:
1. <u>30</u> <u>min</u> hr / day / week / month	1. <u>5</u> <u>min</u> hr / day / week / month
2. <u>1</u> HR	2. <u>20</u> MIN
3. <u>5</u> MIN	3. <u>10</u> MIN
4. <u>30</u> MIN	4. <u>10</u> MIN
5. <u>1</u> HR	5. <u>1.5</u> HR
6. <u>20</u> MIN	6. <u>20</u> MIN
7. <u>2</u> HRS	7. <u>1</u> HR
8. _____	8. _____
9. _____	9. _____
10. _____	10. _____
11. _____	11. _____
12. _____	12. _____
13. _____	13. _____
Total Time: <u>5 hrs + 25 mins</u> >	Total Time: <u>3 hrs + 35 mins</u>

Did the above tasks take longer or less time than you originally planned for? circle below:

More Time
What I expected
Less Time

Key:

What you Expected = + 10 points

Less Time = + 20 points

More Time = - 10 points

Total T.M. Points for Step ___ :

+20

Use these points to calculate your final score at the end of your project!

Note. A scan of how Ethan would most likely fill out the first page of the SDAD Time Management Worksheet in Appendix B.

Ethan finds relief that his suspicions are correct, and it did not take him as long as he originally had thought to complete this step of the process, setting him for a smooth implementation of the SPR.S.A.

He also finds use of the time management reward system. Since he is highly motivated by incentives and rewards, he thinks the point system is fun, and the math is a nice break from the normal creative thinking he does that comes with being an industrial designer.

4.5.2.2 Scenario 2: Analysis Paralysis in Stage 2

It does not take long before Ethan finds himself stuck once more. In this scenario, one can follow Ethan's thought processes as he is stuck and frustrated at himself that it is happening again. This time, Ethan decides to start with the SDAD Analysis Paralysis found in Appendix B rather than only the Time Management task list strategy.

4.5.2.2.1 Worksheet Application: Research

Starting with relaxing his mind, Ethan takes the opportunity to reduce his stress by practicing his cubes. This is a technique commonly taught in industrial design and is the building block of 3D sketching. Using this space to practice and relax makes sense for Ethan and his persona.

Ethan also identifies, after reading through the reminders, that he is experiencing Choice Paralysis, one of the three subtypes of ADHD Paralysis as explained in Section 2.3.2.1.1 This is due to the fact that Ethan is feeling overwhelmed by both the big and little decisions he must make to continue. He is looking ahead at the project and worried there is too much to do and not enough time. This results in Ethan feeling an overwhelming fear of failure, a feeling keeping him from continuing with his project. He also feels there are just too many choices, so he can tell he is shutting down. He really enjoys designing, so he does not know why he feels this way. Identifying what this stumbling block is can be the first step in him overcoming being “stuck.”

Figure 38

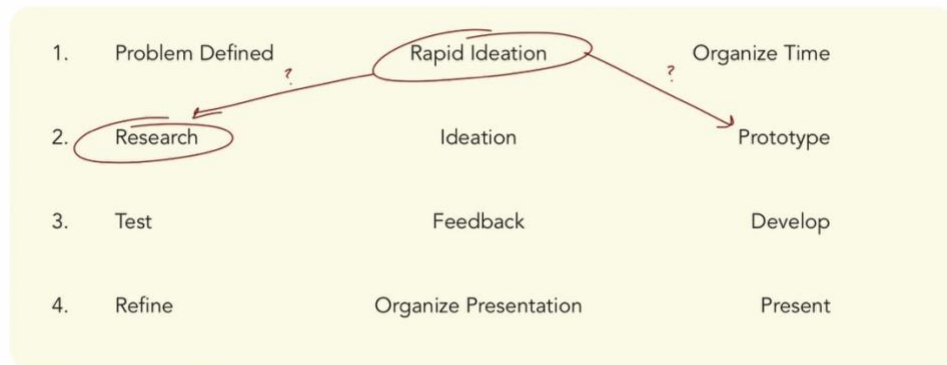
Ethan's Analysis Paralysis Worksheet 1.2

2B SDAD Analysis Paralysis Worksheet

Use this guide to break through your ADHD Paralysis, Answer these questions to begin figuring out what to do next.

Name: **ETHAN** Date: **01-09-25**
 Project Name: **PIVOT + PICKLE STUDIO** Project Duration: **15-weeks**

Which step are you stuck on that's preventing you from moving forward?



1. Have you completed the Time Management Worksheet's Brain Dump/Reprioritize Section? Y / N

If yes, try to focus on the easiest/quickest task as hand first to break the task initiation freeze.
 If no, use this space below to brain dump the tasks you're overwhelmed with, then reprioritize from easiest to most daunting.

Task Dump - Prioritize & Organize

- RESEARCH IS DUE FIRST
 - ↳ GOOGLE
 - ↳ YOUTUBE
 - ↳ SEE WHATS OUT THERE.
 - ↳ GO OUT + PLAY
 - ↳ TALK TO ATHLETE?
- PROTOTYPE
 - ↳ GET MATERIALS
 - ↳ JUMP ON CAD
 - ↳ CUT UP FOAMCORE
 - ↳ [FIGURE OUT MEASUREMENTS OF REGULAR RACKETS]
 - ↳ [CUT UP/DISEMBLE RACKETS THROU TOGETHER]
 - ↳ IDEATION + RESEARCH

1. GOOGLE WHATS OUT THERE
2. YOUTUBE TO LEARN
3. GO OUT + PLAY
4. TALK TO FRIENDS
5. TALK TO ATHLETES
6. WHAT ARE THE MEASUREMENTS OF REGULAR RACKETS?
7. ↳ PICKLE BALL
8. ↳ TENNIS
9. ↳ BADMINTON
10. ↳ ETC.

Note. A scan of how Ethan would most likely fill out the first page of the SDAD Time Management Worksheet in Appendix B.

One of the big choices Ethan faced was the choice of whether to go straight into prototyping or continue into research. In the moment, Ethan was feeling overwhelmed by the thought of doing research and the step sounded more daunting than usual. He is better at prototyping and knows his best ideas come from that step. Therefore, he is eager to get to the steps of developing and testing. But Ethan respects and likes that the SPR.S.A. and he understands the benefits of breaking down the steps into tasks.

From here, Ethan can see that research is due first in his class project brief in Appendix E and realizes maybe it should be a priority. The research should take precedence to the prototyping for this specific project. His internal dialogue here would likely be, “I should probably do a little research first anyways; this step doesn’t look that bad now that I have a plan.”

Figure 39

Ethan's Time Management Worksheet 2.1

1B SDAD Time Management Worksheet

Use this sheet to break down tasks when feeling overwhelmed. Print as many as needed for each step.

Name: ETHAN

Stage: 1

Project Name: PIVOT + PICKLE

Step: RESEARCH

What do I need to do to finish this step?

Dumplist the Tasks:	Circle the Difficulty Level: 1-5
• GOOGLE	●●●●●
• GO OUT + PLAY	●●●●●
• WATCH YOUTUBE	●●●●●
• MAKE QUESTIONNAIRE	●●●●●
• SEE WHATS OUT THERE	●●●●●
• LEARN TARGET MARKET	●●●●●
• LEARN RACKET MEASUREMENTS FOR REGULATION	●●●●●
• DISSEMBLE A RACKET	●●●●●
• GET OLD RACKET FROM THRIFT STORE /OR PADDLE	●●●●●
• TALK TO FRIENDS + ATHLETES	●●●●●

Order the Tasks Above From Easiest to Hardest:	How will I accomplish these?
<input type="checkbox"/> 1. SEE WHATS OUT THERE	• GO TO A SPORTING GOODS
<input type="checkbox"/> 2. GOOGLE / WATCH YOUTUBE	• -
<input type="checkbox"/> 3. TALK TO FRIENDS	• -
<input type="checkbox"/> 4. TALK TO ATHLETES	• GO TO COURTS ON CAMPUS
<input type="checkbox"/> 5. LEARN TARGET MARKET	• THROUGH TASKS 14
<input type="checkbox"/> 6. GET OLD RACKET FROM THRIFT STORE /OR PADDLE	• GO TO THRIFT STORES
<input type="checkbox"/> 7. GO OUT + PLAY	• FIND FRIENDS /GO TO COURTS
<input type="checkbox"/> 8. MAKE QUESTIONNAIRE	• SURVEY MONKEY
<input type="checkbox"/> 9. LEARN RACKET MEASUREMENTS FOR REGULATION	• MEASURE /GOOGLE / PUT IN ILLUSTRATOR
<input type="checkbox"/> 10. DISSEMBLE A RACKET	• -

Note. A scan of how Ethan would most likely fill out the first page of the SDAD Time Management Worksheet in Appendix B.

Now that Ethan has chosen to continue in the research stage as shown in Figure 38, he writes out a plan using the Time Management Sheet in Appendix A.

Breaking down the tasks into even smaller tasks allows Ethan to better grasp what needs to be done to complete this phase. Breaking the tasks down simplifies the tasks and begins to minimize the feeling of being overwhelmed, as mentioned in Section 2.3.2.3.

The last part of the Time Management Worksheets has an optional point system to reward the student (see Section 3.5.3). Here one can see Ethan's example of how the point system works—it is designed to encourage finishing tasks in a shorter time frame without punishing the student if not completed as fast as they originally may have assumed.

Figure 40

Ethan's Time Management Worksheet 2.2

1C SDAD Time Management Worksheet

Use this sheet to keep a time record of how long you thought a task would take versus how long it actually took.

Name: ETHAN
 Stage: 1

Project Name: PIVOT + PICKLE
 Step: RESEARCH - 4

Assumed time the tasks will take:	How long the tasks actually took:
1. <u>2</u> min <u>hr</u> / day / week / month	1. <u>1</u> min / hr / day / week / month
2. <u>2</u> HRS	2. <u>2</u> HRS
3. <u>2</u> HRS	3. <u>1</u> HR
4. <u>1</u> HR	4. <u>1.5</u> HRS
5. <u>2</u> DAYS	5. <u>5</u> HRS
6. <u>1</u> DAY	6. <u>1</u> HR
7. <u>3</u> HRS	7. <u>2</u> HRS
8. <u>1</u> WEEK	8. <u>1</u> DAY
9. <u>1</u> DAY	9. <u>2</u> HRS
10. <u>1</u> DAY	10. <u>3</u> HRS
11.	11.
12.	12.
13.	13.
Total Time: <u>1 WEEK 5 DAYS 10 HRS</u> >	Total Time: <u>1 DAY 18.5 HRS</u>

Did the above tasks take longer or less time than you originally planned for? circle below:

More Time
What I expected
Less Time

Key:

What you Expected = + 10 points

Less Time = + 20 points

More Time = - 10 points

Total T.M. Points for Step 4 :

+20

Use these points to calculate your final score at the end of your project!

Note. A scan of how Ethan would most likely fill out the first page of the SDAD Time Management Worksheet in Appendix B.

The top portion has a list for the student to connect with the ordered tasks from the Project Brief in Appendix E. This example follows Ethan's tasks in Figure 39. On the left appears, a list of how long they believe these tasks will take them. This can offer the perspective of how much time they need to accommodate for in their immediate project within the existing project timeline. On the right a list of how long the process and tasks ended up taking the student. This side by side analog visual provides a new perspective for the student for their next project. This way they can begin forming a new strategy that eventually becomes more habitual through logic and recorded time blocks.

For example, Ethan originally thought all his tasks would add up to taking a whole week, which is less time already than when it is due. But Ethan finds out later on, once he finally completes all the tasks for Step 4: Research in the SPR.S.A, that this phase only took him a day. Ethan finds this helpful and encouraging. He decides to continue with the point system since he strives to always improve as learned in Section 4.4.1. This allows him to see the next time he records this step, if he has improved on time management, or if tasks got easier or more difficult than he had originally planned.

4.5.2.3 Scenario 3: Analysis Paralysis in Stage 4

Ethan just finished giving his prototype Presentation to his studio classroom and Professor. He received great feedback. Ethan knows exactly what he needs to do to finish this project in his head. He also knows he needs to go back to the refining stage for the final time as he has already come back from that step once (see Section 4.4.2).

This was a low-risk move for Ethan earlier in the project because he knew he had enough time when deciding this low-risk return. But now he does not have enough time to return if he would like, as the deadline is approaching.

He hits a wall when he realizes he must continue to the refine stage. He recognizes his pattern of being in a develop, test, and feedback loop from Stage 3 of the SPR.S.A. He needs to move on but just cannot. Ethan cannot explain what is happening and is growing frustrated with himself. Becoming overwhelmed with all the tasks he must finish before presenting his final deliverable, he turns to the Analysis Paralysis Guide in Appendix B, which helped him at the beginning of his project in Section 4.3.2.2.

4.5.2.3.1 Worksheet Application: Refine

Thankfully, the SPR.S.A reminds Ethan that right now, all he needs to focus on is the refining step. At this moment, his mind is immediately jumping to the end and adding all the extra steps in between; the approach allows Ethan to rely on the guide to help him reach his end goal. Ethan is relieved knowing he has a new plan. Below, Figure 41 shows how Ethan decides to use this guide to figure out what to do next and reduce his overall frustration and task paralysis.

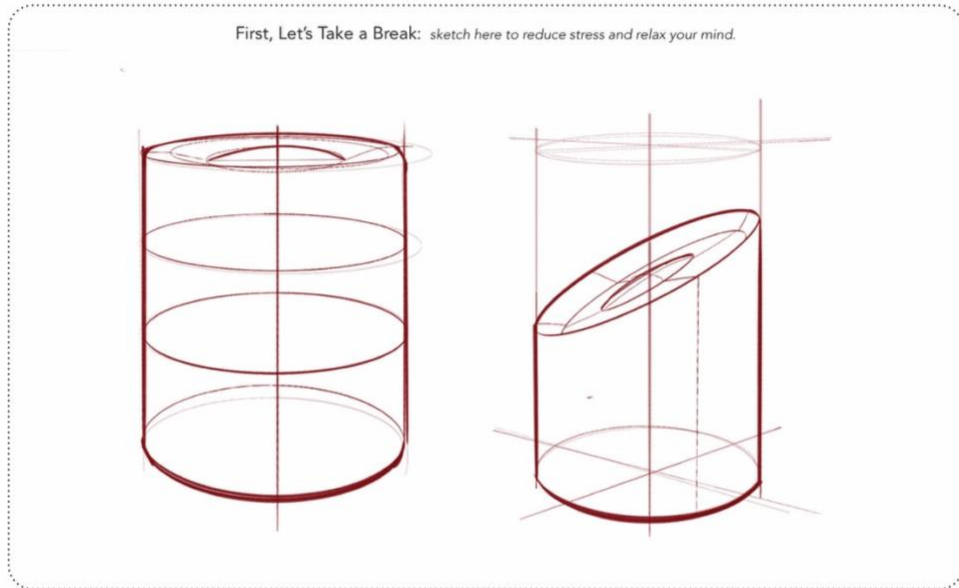
Figure 41

Ethan's Analysis Paralysis Worksheet 2.1

2A SDAD Analysis Paralysis Worksheet
 Use this guide to break through your ADHD Paralysis, this guide is built to work with the Spiral Staircase Approach.

Name: **ETHAN**
 Project Name: **P + P STUDIO**

Date: **03-18-25**
 Project Duration: **15 weeks**



Mental Paralysis	Choice Paralysis	Task Paralysis
<ul style="list-style-type: none"> • Overwhelmed with thoughts • Overwhelmed with emotions • Can't decide what to do next • Shows up in Brain Fog 	<ul style="list-style-type: none"> • Fearful of failure • Also known as Analysis Paralysis • Shutting down • Avoidance of big or small decision(s) • Overwhelmed by too many choices 	<ul style="list-style-type: none"> • Feeling unmotivated • Overwhelmed by amount of tasks • Could be due to understimulation or fear of failure • Struggle with Task Initiation

Use the chart above for a reminder of the three types of ADHD Paralysis then circle which one(s) you are experiencing:

Mental Paralysis

Choice/Analysis Paralysis

Task Paralysis

Note. A scan of how Ethan would most likely fill out the first page of the SDAD Time Management Worksheet in Appendix B.

Through the use of this first sheet, Ethan is able to identify he is experiencing Task paralysis due to the fact he is struggling with Task Initiation and was feeling overwhelmed by the volume of tasks and details going through his mind. Ethan finds relief once more knowing there is a name for what is causing this blockage for him.

Figure 42

Ethan's Analysis Paralysis Worksheet 2.2

2B SDAD Analysis Paralysis Worksheet

Use this guide to break through your ADHD Paralysis, Answer these questions to begin figuring out what to do next.

Name: **ETHAN** Date: **03-18-25**
 Project Name: **P + P STUDIO** Project Duration: **15 weeks**

Which step are you stuck on that's preventing you from moving forward?

1.	Problem Defined	Rapid Ideation	Organize Time
2.	Research	Ideation	Prototype
3.	Test	Feedback	Develop
4.	Refine	Organize Presentation	Present

1. Have you completed the Time Management Worksheet's Brain Dump/Reprioritize Section? **Y/N** **NOT YET**
If yes, try to focus on the easiest/quickest task as hand first to break the task initiation freeze.
 If no, use this space below to brain dump the tasks you're overwhelmed with, then reprioritize from easiest to most daunting.

Task Dump - Prioritize & Organize

<ul style="list-style-type: none"> • FIX CAD MODEL • GO INTO KEYSHOT • RENDER • FINISH PROTOTYPE <ul style="list-style-type: none"> ↳ FILL IN WOODGAPS ↳ SAND ↳ PRIME / PAINT ↳ STRING PADDLE ↳ FINISH MAKING HANDLE COVER • FINISH ILLUSTRATOR PACKAGING / BRAND (CLEAN UP) (EXPORT TO PHOTOSHOP) • ORGANIC HERO SHOTS IN FOLDERS! 	<ol style="list-style-type: none"> 1. FINISH PROTOTYPE 2. FIX CAD MODELS / RENDER 3. ILLUSTRATOR PACKAGING ↳ PRINT FOR FORMCORE MODEL 4. 5. 6. 7. 8. 9. 10.
---	---

Note. A scan of how Ethan would most likely fill out the first page of the SDAD Time Management Worksheet in Appendix B.

Continuing with the Analysis Paralysis sheet, this page is an opportunity for Ethan to record the stage he is struggling with. Since it has been identified, he can now begin to work through it and get a starting point to know what to do next.

Here in Figure 42 Ethan notes he is in the Feedback Stage but is deciding if the next step should be the Refine stage. Since Ethan is struggling with organizing all the tasks going through his mind, he chooses to fill out the task dump. After this quick task dump, Ethan fills out the Time Management sheet in Figure 45, as well, since he enjoyed using it to reward himself with bonus points when he was stuck on the research step of the SPR.S.A. He also did this to further organize his thoughts and his plan of action. This way he can use the points at the end of the self-reflection sheet in Figure 49. Instructions to fill out the final points system can be found in Appendix A.

Figure 43

Ethan's Analysis Paralysis Worksheet 2.3

2C SDAD Analysis Paralysis Worksheet

Use this guide to break through your ADHD Paralysis, Answer these questions to begin figuring out what to do next.

Name: ETHAN Date: 03-18-25
Project Name: PIVOT + PICKLE STUDIO Project Duration: 15-weeks

Questions to help get your mind moving and make a plan to break through this step:

1. Movement

2. When was the last time you got up and moved around? circle which form(s) of movements helps you relax & go do it!

<u>Walking around</u>	Tennis	<u>Football</u>
Stretching	<u>Running</u>	Basketball
Dancing	Pickleball	Yoga/Pilates
		Weight Lifting

Other: BOXING

2. Simplify

1. What one thing can you accomplish right now? FIXING THE PACKAGING ON ILLUSTRATOR

2. Choose a Pomodoro Method time split to try out: circle one

25/5 mins	<u>50/10mins</u>	75/15 mins	90/30 mins
-----------	------------------	------------	------------

3. How many rounds would you like to get out of your Pomodoro Session to give yourself a reward? 2

4. How many did you get? 3

5. Are you on a Team or is it an Individual Project? circle: Team or Individual Project

6. If team, is it appropriate to delegate any of the tasks from your brain dump? Y/N (N)

If yes to both questions above, don't be afraid to ask for help to reduce the number of tasks you have.

Note. A scan of how Ethan would most likely fill out the first page of the SDAD Time Management Worksheet in Appendix B.

Figure 44

Ethan's Analysis Paralysis Worksheet 2.4

2D SDAD Analysis Paralysis Worksheet

Use this guide to break through your ADHD Paralysis, Answer these questions to begin figuring out what to do next.

Name: _____ Date: _____
Project Name: _____ Project Duration: _____

3. Interests/Rewards

1. Do you just feel unmotivated because you're not invested in your project? Y / N

2. What is something you are interested in that will make you more excited to work? Circle something you're interested in!

exercise guitar music
drawing technology sports movies
media cooking photography

Other: _____

2. Can this interest be incorporated into your Design Project to keep you engaged in your tasks? If so, how:
Eh... too far into Project, I like what I have already.

3. Can this interest be a reward for completing a task or finishing your Pomodoro rounds? Y / **N**

4. If no, Pick a reward to give yourself that will motivate you to complete the tasks ahead of you: *THE PT SYSTEM IS FUN!*
(i.e. a sweet treat, a walk, a new item, new packet of stickers, etc.)

4. General

Circle the tactics you are going to give a try to break through your ADHD paralysis:

Re-Prioritizing Tasks Simplifying Tasks
Pomodoro Method Rewards/Incentives Adding in Interests Mind Dump
Delegating Tasks Moving Around/Movement Breaks

Note. A scan of how Ethan would most likely fill out the first page of the SDAD Time Management Worksheet in Appendix B.

The simplify section of Figure 43, is really where Ethan finds success in overcoming his task paralysis. He realizes at that moment something he could work on would be his task of fixing his illustrator file, most likely because his computer is always with him, whereas the other tasks involved going somewhere to work or finding others to talk to. He also chooses to try out the Pomodoro Method, as did Ava. The difference is Ethan attempts the 50-minute work and 10-minute rest period. He succeeds in three rounds and finishes his illustrator work.

Ethan's interests that he marks include exercise, music, technology, and media. Here we see how Ethan does not grasp the opportunity to use these interests in his project, whereas Ava had a breakthrough on this same page in Figure 27, using the same analysis paralysis worksheet. It could be due to Ethan filling this particular analysis paralysis sheet (Appendix B) further into the SPR.S.A than Ava did. He is committed to his project and is not struggling with feeling unmotivated. He is feeling fearful that he will not do it justice, therefore becomes stuck.

To become unstuck, Ethan circles four tactics he is going to try to use to overcome his task paralysis. Those tactics include: (1) Re-prioritizing Tasks, (2) Simplifying Tasks, (3) Rewards/Incentives, and (4) the Mind Dump. (Each of these tactics are pulled from Section 2.3.2 of the literature review), options known to help individuals with ADHD and to break through ADHD paralysis. This is important to record as Ethan will be able to return to this page to help fill out his Self-Reflection Worksheet in Figure 48. When he attempts his next project, he will already have these skills and tactics and may give them a try naturally. This is the goal of the worksheets to assist an SDAD in developing and using a smoother self-management experience while performing the Design Process through employing universal coping skills.

Ethan's interests include walking around, football, running, and boxing. Ethan appreciates the concept of moving around and will most likely try walking around for a small

break. But he worries he will break any focus he gets and is not as interested in walking around as boxing. He may choose to wait and do it after as a reward.

Figure 45

Ethan's Time Management Worksheet 3.1

1B SDAD Time Management Worksheet

Use this sheet to break down tasks when feeling overwhelmed. Print as many as needed for each step.

Name: **ETHAN**
 Stage: **4 - DELIVER**

Project Name: **P + P STUDIO**
 Step: **REFINE**

What do I need to do to finish this step?

Dumplist the Tasks:	Circle the Difficulty Level: 1-5
✍️ FIX CAD MODEL	●●●●● (2 circled)
✍️ RENDER OUT IN KEYSHOT	●●●●● (2 circled)
✍️ ILLUSTRATOR PACKAGING (FIX)	●●●●● (2 circled)
✍️ PRINT OUT FOR FOAMCORE MODEL	●●●●● (3 circled)
✍️ FINISH PROTOTYPE	●●●●● (2 circled)
✍️ FILL IN WOOD/SAND	●●●●● (1 circled)
✍️ PRIME / PAINT SEAL	●●●●● (1 circled)
✍️ STRING PADDLE	●●●●● (2 circled)
✍️ FINISH INTERCHANGABLE HANDLE CORNER	●●●●● (2 circled)
•	●●●●●

Order the Tasks Above From Easiest to Hardest:	How will I accomplish these?
<input type="checkbox"/> 1. FILL IN WOOD/SAND	•
<input type="checkbox"/> 2. FIX ILLUSTRATOR FILE	•
<input type="checkbox"/> 3. PRINT + MOUNT PACKAGING	•
<input type="checkbox"/> 4. PRIME / PAINT / SEAL	•
<input type="checkbox"/> 5. FIX CAD	• GO BACK INTO SOLIDWORKS, KEYSHOT
<input type="checkbox"/> 6. RENDER	• SAVE TO BOX IN NEW FINAL FOLDER
<input checked="" type="checkbox"/> 7. FINISH PROTOTYPE	•
<input type="checkbox"/> 8. ↓ STRING FINAL PADDLE	• WAIT UNTIL DRY
<input type="checkbox"/> 9. FINISH HANDLE RUBBER	•
<input type="checkbox"/> 10.	•

Note. A scan of how Ethan would most likely fill out the first page of the SDAD Time Management Worksheet in Appendix B.

The third Time Management Worksheet Ethan fills out is in Step 10: Refine. This is a continuation of his Analysis Paralysis worksheet in Figure 42. Since he is experiencing task paralysis Ethan found these worksheets best helped him organize his thoughts. He enjoys laying out his tasks in this way and seeing the level of difficulty beside the task was helpful in breaking down the overwhelming nature of the step and simplifying what needs to be done next. Overall, this choice encouraged him and knocked any smaller decisions out of the way, such as what to do first, helping him overcome decision fatigue to continue his project.

Figure 46

Ethan's Time Management Worksheet 3.2

1C SDAD Time Management Worksheet

Use this sheet to keep a time record of how long you thought a task would take versus how long it actually took.

Name: ETHAN
 Stage: 4 - DELIVER

Project Name: P + P STUDIO
 Step: REFINE

Assumed time the tasks will take:

1. 1 min hr / day / week / month
2. 6 HRS
3. 1 HRS
4. 3 DAYS
5. 1 HR
6. 3 HRS
7. 1 HR
8. 5 HRS
9. _____
10. _____
11. _____
12. _____
13. _____

Total Time: 3 DAYS 18 HRS

How long the tasks actually took:

1. 3 min hr / day / week / month
2. 8 HRS
3. 2 HRS
4. 5 DAYS
5. 5 HRS
6. 1 DAY
7. 4 HRS
8. 1 DAY
9. _____
10. _____
11. _____
12. _____
13. _____

Total Time: 7 DAYS 22 HRS

Did the above tasks take longer or less time than you originally planned for? circle below:

More Time

What I expected

Less Time

Key:

What you Expected = **+ 10 points**

Less Time = **+ 20 points**

More Time = **- 10 points**

Total T.M. Points for Step 10 :

-10

Use these points to calculate your final score at the end of your project!

Note. A scan of how Ethan would most likely fill out the first page of the SDAD Time Management Worksheet in Appendix B.

Another example of the point system is shown through Ethan's third time management worksheet in Figure 46, which shows the points Ethan accumulated from his ordered tasks in Figure 45. This worksheet is an example of how a student like Ethan thought a step might take a shorter time, but in this case took 8 days. This could be a very common occurrence for a SDAD. As learned in Section 2.3.2.2 on time blindness, if this is a habitual practice for the student, these worksheets could serve as a great point of self-reflection and improvement as it may call out any harmful habits. This should overall increase a student's awareness of time and begin building a better relationship with the tasks they perform with each project brief.

A disclaimer here is that not every project and task is the same. Therefore, each one must be met with an assumption of variety and reasonings for why something took longer than it should have, which is up to the student's personal discretion.

4.5.2.4 Scenario 4: Ethan's Self-Reflection

After the final project is delivered and the presentation has been given to Pivot & Pickle Sports Inc. Ethan is satisfied. He has finished his project in time. As an advocate for always getting better and improving his design management skills, he fills out the Self-Reflection Worksheets in Appendix C.

Figure 47

Ethan's Self-Reflection Worksheet 1

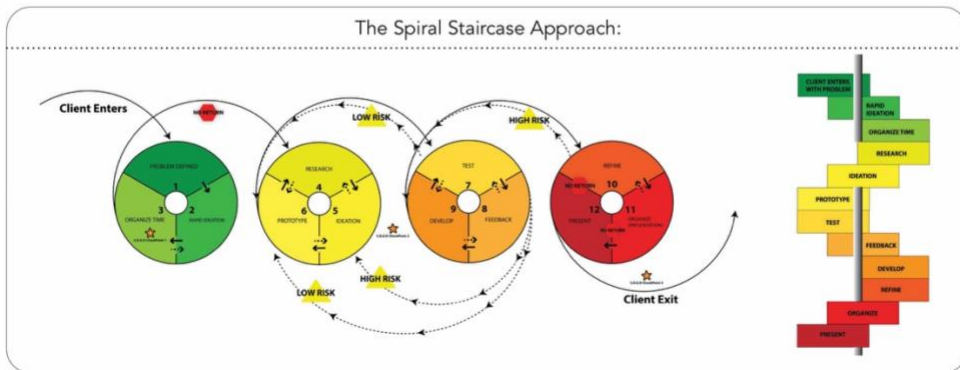
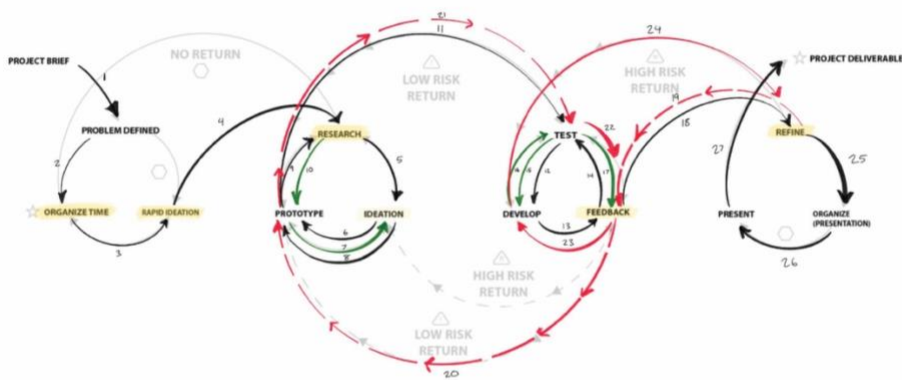
3A SDAD Self-Reflection Worksheet

Use this guide to keep track of how this project went for you, this guide is built to work with the SP.SR.Approach.

Name: **ETHAN**
Project Name: **PIVOT + PICKLE STUDIO**

Date: **04-15-25**
Project Duration: **15 WEEKS**

The Spiral Staircase Approach Tracker:
Use this Template to track how many times you repeated a step or stage of the Spiral Staircase Approach.
Make sure to mark where you got stuck or when you used the Analysis Paralysis Guided Worksheets.
This will serve as a record for you to compare progress for future projects.



Note. A scan of how Ethan would most likely fill out the first page of the SDAD Time Management Worksheet in Appendix B.

The first of the Self-Reflection Worksheets in Appendix C, simply showing Ethan's progression through the use of the SPR.S.A. This progression can be viewed closer in Figure 32. Ethan uses stars to mark where he filled out the Worksheets. He uses dashed lines to show where he returned to a previous stage. This worksheet is meant to serve for the personal records of the student in use of the SPR.S.A, allowing them to recognize patterns in their workflow with each project.

Figure 48

Ethan's Self-Reflection Worksheet 2

3B SDAD Self-Reflection Worksheet

Use this guide to keep track of how this project went for you, this guide is built to work with the SP.SR.Approach.

Name: ETHAN

Project Name: PNOT + PICKLE STUDIO

Date: 04-15-25

Project Duration: 15 WEEKS

Congratulations on Completing your Project!

Answer the questions below to begin recording your progress on the design process with each project you accomplish!

1. Was this project a team or individual project? circle: Team Individual

2. Did you finish on time? Y/N ; if no, how long did it take you past due date: JUST BARELY

3. At any point did you experience ADHD Paralysis? Y/N ; if yes, at which step? RESEARCH + REFINE

4. Which type of A.D.H.D. Paralysis did you experience? circle which one(s): Mental Task Choice

5. Which tactic(s) of the Analysis Paralysis guide were most helpful to you? REPRIORITIZING + SIMPLIFYING

6. Which Stage are you most proud of / felt you exceeded in the most? DEVELOP/TEST

7. Which Stage took you the longest, that you should account for more time in the next project? REFINE

8. Did you use the Time Management Work Sheet? Y/N ; if yes, was it helpful? (fill out chart on the next page to get your final score!)
YES!

9. Did you repeat any steps? mark which ones and the amount of times you repeated them. (use the template to count your steps)

<u>1</u> 1. Problem Defined <u>1</u>	Rapid Ideation <u>1</u>	Organize Time <u>1</u>
<u>2</u> 2. Research <u>2</u>	Ideation <u>2</u>	Prototype <u>4</u>
<u>3</u> 3. Test <u>4</u>	Feedback <u>5</u>	Develop <u>3</u>
<u>2</u> 4. Refine <u>2</u>	Organize Presentation <u>1</u>	Present <u>1</u>

Note. A scan of how Ethan would most likely fill out the first page of the SDAD Time Management Worksheet in Appendix B.

Through filling out this questionnaire, Ethan discovers which stage he repeated the most. He notices a pattern. He repeats stage 3 of the SPR.S.A. three times. His most repeated steps include Step 7: Test and Step 8: Feedback, the feedback step having the most repeats of 5.

It is important to note, that repeating a step is not bad, and even encouraged. However, repeating the same step too many times could result in a late grade and not completing a project in time. In other cases, too much repetition of steps could result in induced stress and feeling of being overwhelmed. This could ultimately lead to a student experiencing ADHD paralysis.

Through observation and self-reflection, a student can make more informed decisions in the future on which stages and steps need more time to accommodate. They may also adjust their perspective by visually seeing on paper the number of times it took for them to continue past a certain step. Did they excel in that step and therefore repeat it because they know they could, or did they feel less adequate in that step and have to repeat it multiple times?

Figure 49

Ethan's Self-Reflection Worksheet 3

3C SDAD Self-Reflection Worksheet

Use this guide to keep track of how this project went for you, this guide is built to work with the SP.SR.Approach.

Name: **ETHAN**

Project Name: **PNOT + PICKLE STUDIO**

Date: **04-15-25**

Project Duration: **15 WEEKS**

The Spiral Staircase Approach Points Tracker:

If you want to see your overall score for this project to track your progress, Use the Calculated Bonus Points from your time management sheets to count up your total score!

(optional)

If you repeated...

in general	+ 0 pts
a low risk step	- 5 pt
a high risk step	-10 pts
after a no-return	-20 pts

Workspace

Step	Completed +10	# of times Repeated	Took a low-risk to repeat? -5	Took a High-risk to repeat? -10	Repeated after a no-return? -20	T.M. Points	Total:
1. Problem Defined	+10	0					10
2. Rapid Ideation	+10	0				+20	30
3. Organize Time	+10	0					10
4. Research	+10	1				+20	30
5. Ideation	+10	1					10
6. Prototype	+10	3	1 (-5)				5
7. Test	+10	3					10
8. Feedback	+10	4		1 (-10)			0
9. Develop	+10	2					10
10. Refine	+10	1				-10	0
11. Organize Presentation	+10	0					10
12. Present	+10	0					10
Total							=135

Congratulations on Completing your Project!

Use this score as a baseline for your next project to see if your process has improved or changed since the last project!

Total Points Overall!

135 pts

Note. A scan of how Ethan would most likely fill out the first page of the SDAD Time Management Worksheet in Appendix B.

Ethan's use of the Time Management Sheets in Appendix A, rewarded Ethan with bonus points for finishing the step faster than originally planned. Countering that, Ethan also received negative points for taking more time than originally planned. In this case, the point system did what it was intended to do: encourage an acknowledgment of personal time constraints while also providing positive feedback and constructive criticism, allowing the SDAD to build building better habits over each project.

As mentioned in Section 3.5.3 the baseline points a student can get by completing the SPR.S.A. is 120 points if they choose to use the Points System as their recorded progress bar. In this example in Figure 49, Ethan has gained over 15 bonus points. Ethan could have gained 20 more points or even 10 more points if in Step 10: Refine, he had set to the correct amount of time to work on that step and his specific tasks. This would have resulted in Ethan getting 145 points. If Ethan corrects this in his next project or takes the time to break down tasks into other steps, he could gain more points, resulting in a progression in his design process system through the SPR.S.A.

The goal of this worksheet is for students to use discretion when making decisions throughout the SPR.S.A. By knowing what works, how long certain steps and tasks take, and which steps they repeat the most, students can begin to comprehend the areas within the design process they may need to spend more time preparing for before beginning a new project.

Eventually, the student should not need the worksheets and would be able to do it on their own. Ethan chooses to use the Point System because it reduces his overall decision fatigue when it comes to knowing how well he is performing in comparison to his past projects.

Figure 50

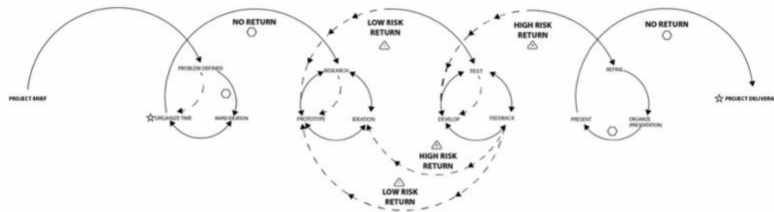
Ethan's Self-Reflection Worksheet 4

3D SDAD Self-Reflection Worksheet

Use this guide to keep track of how this project went for you, this guide is built to work with the SP.SR.Approach.

Name: **ETHAN** Date: **04-15-25**
Project Name: **PINOT + PICKLE STUDIO** Project Duration: **15 WEEKS**

Mark your favorite steps and the ones you became stuck/struggled with the most:



Notes for your next project: (Include what you would do different and keep the same)

- GREAT STRUCTURED PROCESS. WILL USE AGAIN.
- NEED TO PLAN FOR MORE TIME TO REFINE FINAL DELIVERABLE
- REALIZED I LOVE THE PROTOTYPE, TEST, DEVELOP STAGE
- ORGANIZING MY TASKS ON PAPER BEFORE STARTING HELPED SO MUCH WHEN I FELT STUCK.
- LOVED THE POINT SYSTEM, HATE THAT LOST POINTS I'LL HAVE TO DO BETTER NEXT TIME.
↳ DIDN'T REALIZE HOW RISKY GOING SO FAR BACK WAS. - BUT IT MADE ME REALLY HAVE TO CHOOSE & CONSIDER TIME.

Note. A scan of how Ethan would most likely fill out the first page of the SDAD Time Management Worksheet in Appendix B.

Finally, Ethan has completed the SPR.S.A. His reflection worksheets are finished as he writes his final notes on what he thought of the SPR.S.A. As well as his realizations of his own thought processes and what he may try to do differently in his next project.

Ethan has decided he will use the SPR.S.A again, to better understand his process and see if he has made any progress via the point system. He may end up organizing his tasks on his own or prior to starting rather than waiting until he is stuck to organize them. Ethan now knows the refine stage takes longer than he originally assumed and will plan for more time to properly prepare to complete this stage in a time efficient manner. But overall, Ethan enjoyed the structure and found it reduced his normal amount of decision fatigue through the provided staircase approach.

4.6 Comparative Analysis of Personae

Between the two hypothetical personae and their individual scenarios completing the SPR.S.A for the same project brief, a comparative analysis can be conducted. This comparison will show the similarities and differences between these two SDAD personas, including their strengths and challenges—one student diagnosed with inattentive ADHD and the other student self-diagnosed with ADHD traits.

Ava was the first person to work through the SDAD worksheets provided in Appendix A, B, and C. Ava used fewer sheets than Ethan as she experienced Analysis Paralysis only once throughout her project and found success in a breakthrough in Figure 2. Only need to work through the Analysis Paralysis Worksheets once using all four sheets.

Ava used fewer sheets as she decided to not participate in the points system for reward and used her own reward system for a treat. This motivated Ava the most, therefore showing the

point system is optional for students. In contrast, Ethan used more worksheets than Ava given that he experienced Analysis Paralysis twice throughout his project and participated in the reward point system. Ethan found the gamification of the point system rewarding. He likes having a scoring method and will most likely use it in the future.

Similarly, though the design process has the same set of steps and SDAD checkpoints, both students were able to complete their project with two unique deliverables for the Pickle & Pivot Client. Showing the reproduction abilities of the SPR.S.A.

4.7 Reflection on Effectiveness

Though the two SDAD personas experienced the SPR.S.A differently, the results of the studies showed the effective results of different real-life scenarios. Both Ethan and Ava in their scenarios finished their project deliverable and presentation in time. Shows how the different SDAD checkpoints are being integrated into the structure steps of the SPR.S.A lend its hand to assisting SDADs in navigating a broad project brief. Overall, intentionally building soft skills of self-management in the classroom. These habits and behavioral traits will carry Ethan and Ava into their next few years in the collegiate setting and into the workplace.

4.8 Conclusion of the Practical Applications

This chapter served as a representation and example of the SPR.S.A by using a hypothetical broad project brief that would require a student to complete a final deliverable. These case studies begin the academic conversation and show how two different Industrial Design students' traits– would most likely perform using the SPR.S.A. Each have their own outcomes, and self-reflection results they will be able to use for their next hypothetical project.

These examples included a walk-through of how each student overcame each of the three subtypes of ADHD paralysis. The conclusion on using the hypothetical personae as a guideline of the effectiveness is that a student can use the approach as a guideline to decision making and overcoming walls that may be preventing them from finishing projects and their associated tasks in time, overall serving the purpose of assisting the SDAD with Self-Management in their Design Process. Since these are hypothetical personas, the implications of the SPR.S.A can be strengthened through further research and human testing.

CHAPTER 5: CONCLUSION

5.1 Summary of the Spiral Staircase Approach

Research in Industrial Design methods and students with ADHD in the collegiate classroom shows there is a gap in the exploration of design process methods. Specifically, how to enhance the workflow of the industrial design student with ADHD that acknowledges their individual traits.

ADHD and Industrial Design are both topics that are ever-growing and developing as more research is conducted. ADHD as a diagnosis was not recognized until the 1980's, but well-known figures like Thomas Edison show that individuals have exhibited these traits for far longer. ADHD, as known today, has three subtypes: (1) Inattentive, (2) Hyperactive/Impulsive, and (3) Combined. Common challenges covered in Section 2.3.2 include (1) ADHD paralysis, (2) Time Management/Time Blindness, and (3) Decision Fatigue. ADHD Paralysis has three subtypes: (1) Mental Paralysis, (2) Task Paralysis, and (3) Choice Paralysis, as discussed in Section 2.3.2.1.1.

Behavioral strategies that can improve ADHD symptoms in ADHD Paralysis include (1) writing everything down, (2) structuring and planning for writing tasks, (3) scheduling time for decision-making, (4) Pomodoro methods, (5) Regular movement breaks, (6) brain dumps, and (7) keeping things interesting. Combined from Section 2.3.2.1.2, these tactics were implemented to create the SDAD Analysis Paralysis Worksheet in Appendix B for the SDAD checkpoint within the SPR.S.A.

In addressing the gap for the Industrial Design Student with ADHD, this project shows there are many opportunities and strengths that can come from having ADHD or design traits including enhanced creativity and the ability to hyperfocus. Some areas of research have explored specific strengths including the corporate workplace and areas of entrepreneurship, such as discussed in Section 2.4.1.1. John Torren's Ted Talk describes his ADHD as a superpower in the entrepreneurship setting- (TED, 2018). The corporate world acknowledges some skills that are considered challenging for most people with ADHD; can be strengthened and used as an enhancement in their success and not a perceived hindrance (Kelly, 2023), as discussed in Section 2.4.1.

The design methods combined to form the Spiral Staircase Approach include the Double Diamond Method's four phases of Discover, Define, Develop, and Deliver, the Design Squiggle's non-linear visual representation of unknotting a seemingly chaotic process, the linear Human Centered Design Process by IDEO and the six phases of the IDEO Design Process automated system for each client. The Pinball Machine Method's visual representation revealed the design process may not be linear but a randomized out-of-order process. Finally, the last combined method modeled, the Helix presents a spiral downward for a cycle of steps that progress through time. Alone, none of these methods are specified for the SDAD, but each hold features that can be adapted to help an SDAD improve their individual design methodology.

5.2 Rationale for the SPR.S.A

The current gap in the methods mentioned is the opportunity to create an organized visual breakdown of steps that are specifically catered to the Industrial Design student with ADHD, allowing an up-and-down, back-and-forth, non-linear organized process that can be personalized

to the individual's process. These are the methods that came together to form the Spiral Staircase Approach.

The Spiral Staircase Approach uses the four phases of the Double Diamond and breaks them down into 12 steps that progress a student down the 'stairs' to their final deliverable. Each phase holds three steps that can be repeated and interchanged how the student sees fit. High-risk and low-risk warnings are provided when a student may be contemplating repeating an entire phase or more than two steps back to encourage the continuation of their project and acknowledge their time constraint. Placed throughout the four phases are three SDAD checkpoints: (1) Time Management Worksheet, (2) Analysis Paralysis Worksheet, and (3) Self-Reflection Worksheet.

Breaking down the Spiral Staircase Approach allows student designers with ADHD (SDAD) to simplify the broadness of a design process overall, reducing decision fatigue. Given the structured nature and fluidity of the non-linear process, these steps are more easily digestible with the worksheets provided in Appendix A, B, and C. This project represents a customized solution through the synthesis of specific behavioral tactics to overcome analysis paralysis and time management challenges that come with having ADHD.

5.3 Implications of the Approach

This thesis is meant to introduce this tailored approach for SDAD into the design community while contributing to the academic conversation around design education and adult ADHD. Since the Spiral Staircase Approach was developed as a universal design process strategy, it can be used by anyone but is specific to students with ADHD in the design field. The students can hone in on their unique strengths and more effectively meet challenges they may

face in the collegiate design setting to prepare them for the corporate world after graduation. Overall, this design guideline is meant to empower their creativity by providing a constructed system that will increase their self-management habits when completing future projects.

5.4 Limitations of the Approach

The term ADHD is a broad diagnosis with many behavioral methods to combat specific challenges that cannot be synthesized into one thesis. This approach only covers and implements strategies to help break through a few of these challenges, but the challenges chosen are common among individuals with ADHD. Therefore, SDAD are likely to commonly encounter these challenges.

Though the approach is individualizable it may still be lacking in full personalization as students are encouraged to exercise self-discretion when completing the worksheets. Because this project is only a theory of an approach and while the research suggests the worksheets provided in Appendix A, B, and C could result in a 100% breakthrough rate, the SPR.S.A, should only be used as a guideline rather than a rigid process.

5.5 Suggestions for Future Research

Future research should include the opportunity to research the findings and provide evidence through the experimentation and testing of the Spiral Staircase Approach and Worksheets with college-aged individuals studying industrial design with ADHD. This is an opportunity for the field of industrial design to expand understanding of what may actually be helpful for students, rather than testing through personas.

There is also an opportunity of a possible bridge between using digital timers and apps to help self-management for the SDAD. Discovery and research into what is currently on the

market and what is still needed to combine the SPR.S.A and digital products for the SDAD is an untapped avenue worth discovery and further research. Following these two suggestions, a final suggestion made would be to encourage expansion of the SPR.S.A to address more challenges-to expand the reach of the approach for more individuals, allowing for greater inclusivity and further personalization. This is important because, as explained in Section 5.4, the SPR.S.A in its current form does not address how to overcome all symptoms and traits that may be experienced by the SDAD.

5.6 Final Conclusion

This thesis has communicated the gap between industrial design education and college students with ADHD by creating and developing an approach specifically designed to help students with ADHD gain a better understanding and grasp of specific ~~their~~ strengths and challenges and how to overcome those challenges when they inhibit completion of a design project. Through the use of the Spiral Staircase Approach students with ADHD are prompted to use the self-guided worksheets to break through common challenges of having ADHD such as analysis paralysis and time management.

The purpose of the Self-reflection worksheet is to help the SDAD gain control and record progress through a reward system, therefore allowing the student to gain practical skills that reinforce success. Developing these strategies will reinforce success after college when students enter the office space and corporate world.

This application of the approach in Chapter 4 shows hypothetically how the approach is adaptable and flexible for the individual student with unique experiences with their ADHD traits. While the SPR.S.A is meant to act as a universal structure approach with individual

specifications for the individual with ADHD, additional opportunities to provide further tools and strategies combined with more research into individual design strategies. This research will further the understanding the non-linearity of design processes, allowing the SPR.S.A to be more useful to more individuals with ADHD.

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Appendix A

SDAD Time Management Worksheets

1A SDAD Time Management Worksheet

Use this guide to break down your projects timeline, this guide is built to work with the Spiral Staircase Approach.

Name: _____ Date: _____

Project Name: _____ Project Duration: _____

Re-write your Project Brief Here:

Due Date Dumplist:

Mind dump the biggest deliverables from the Brief:

Now write them in order of their due date:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

**** Go to Time Block Template to begin plugging in these main dates and organize your semester****

Appendix A

Continued

1B SDAD Time Management Worksheet

Use this sheet to break down tasks when feeling overwhelmed. Print as many as needed for each step.

Name: _____
Stage: _____

Project Name: _____
Step: _____

What do I need to do to finish this step?

Dumplist the Tasks:

Circle the Difficulty Level: 1-5

-
-
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- — • — • — • — •
- — • — • — • — •
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- — • — • — • — •

Order the Tasks Above From Easiest to Hardest:

How will I accomplish these?

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

-
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Appendix A

Continued

1C SDAD Time Management Worksheet

Use this sheet to keep a time record of how long you thought a task would take versus how long it actually took.

Name: _____
Stage: _____

Project Name: _____
Step: _____

Assumed time the tasks will take:

How long the tasks actually took:

1. _____ min / hr / day / week / month
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____

1. _____ min / hr / day / week / month
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____

Total Time: _____

Total Time: _____

Did the above tasks take longer or less time than you originally planned for? circle below:

More Time

What I expected

Less Time

Key:

What you Expected = + 10 points

Less Time = + 20 points

More Time = - 10 points

Total T.M. Points for Step ____ :

Use these points to calculate your final score at the end of your project!

Appendix A

Continued

1D SDAD Time Management Worksheet

Use this sheet to keep a time record of how long you thought a task would take versus how long it actually took.

Point System Example:
 This page serves as an example of how to use your Time Management Points in your Self-Reflection Final Score!
 Each step that you fill out to break down tasks, will count towards your final project score!

Dumplist the Tasks: Circle the Difficulty Level: 1-5 List from easiest to hardest:

- deep dive into subject -----> ●●●●● -----> 1. sketch initial ideas
- sketch initial ideas -----> ●●●●● -----> 2. deep dive into subject
- buy materials for class -----> ●●●●● -----> 3. buy materials for class

Assumed time the tasks will take: How long they actually took:

1. 3 min / hr / day / week / month 1. 2 min / hr / day / week / month

2. 2 hours 2. 3 hours

3. 2 weeks 3. 1 week

Total Time: 2 weeks and 5 hours > 1 week and 5 hours

Did the above tasks take longer or less time than you originally planned for? circle below

More Time What I expected Less Time

- Key:**
- What you Expected = + 10 points
 - Less Time = + 20 points
 - More Time = - 10 points

Total T.M. Points for Step 2 :

+20 !!

SDAD Self-Reflection Worksheet:

Step	Completed +10	# of times Repeated	Took a low-risk to repeat? -5	Took a High-risk to repeat? -10	repeated after a no-return? -20	T.M. Points	Total:
1. Problem Defined	+10	0					+10
2. Rapid Ideation	+10	0				+20	+30
3. Organize Time	+10	0					+10
Total							+50 pts!

Appendix A

Continued

Date:	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday

Appendix B

SDAD Analysis Paralysis Worksheets

2A SDAD Analysis Paralysis Worksheet

Use this guide to break through your ADHD Paralysis, this guide is built to work with the Spiral Staircase Approach.

Name: _____ Date: _____

Project Name: _____ Project Duration: _____

First, Let's Take a Break: *sketch here to reduce stress and relax your mind.*

Mental Paralysis	Choice Paralysis	Task Paralysis
<ul style="list-style-type: none"> ● Overwhelmed with thoughts ● Overwhelmed with emotions ● Can't decide what to do next ● Shows up in Brain Fog 	<ul style="list-style-type: none"> ● Fearful of failure ● Also known as Analysis Paralysis ● Shutting down ● Avoidance of big or small decision(s) ● Overwhelmed by too many choices 	<ul style="list-style-type: none"> ● Feeling unmotivated ● Overwhelmed by amount of tasks ● Could be due to understimulation or fear of failure ● Struggle with Task Initiation

Use the chart above for a reminder of the three types of ADHD Paralysis then circle which one(s) you are experiencing:

Mental Paralysis

Choice/Analysis Paralysis

Task Paralysis

Appendix B

Continued

2B SDAD Analysis Paralysis Worksheet

Use this guide to break through your ADHD Paralysis, Answer these questions to begin figuring out what to do next.

Name: _____ Date: _____

Project Name: _____ Project Duration: _____

Which step are you stuck on that's preventing you from moving forward?

- | | | | |
|----|-----------------|-----------------------|---------------|
| 1. | Problem Defined | Rapid Ideation | Organize Time |
| 2. | Research | Ideation | Prototype |
| 3. | Test | Feedback | Develop |
| 4. | Refine | Organize Presentation | Present |

1. Have you completed the Time Management Worksheet's Brain Dump/Reprioritize Section? Y / N

If yes, try to focus on the easiest/quickest task as hand first to break the task initiation freeze.

If no, use this space below to brain dump the tasks you're overwhelmed with, then reprioritize from easiest to most daunting.

Task Dump - Prioritize & Organize

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

Appendix B

Continued

2C SDAD Analysis Paralysis Worksheet

Use this guide to break through your ADHD Paralysis, Answer these questions to begin figuring out what to do next.

Name: _____ Date: _____

Project Name: _____ Project Duration: _____

Questions to help get your mind moving and make a plan to break through this step:

1. Movement

2. When was the last time you got up and moved around? circle which form(s) of movements helps you relax & go do it!

Walking around Tennis Football
Stretching Running Basketball Yoga/Pilates
Dancing Pickleball Weight Lifting

Other: _____

2. Simplify

1. What one thing can you accomplish right now?

2. Choose a Pomodoro Method time split to try out: circle one

25/5 mins

50/10mins

75/15 mins

90/30 mins

3. How many rounds would you like to get out of your Pomodoro Session to give yourself a reward?

4. How many did you get?

5. Are you on a Team or is it an Individual Project? circle: Team or Individual Project

6. If team, is it appropriate to delegate any of the tasks from your brain dump? Y / N

If yes to both questions above, don't be afraid to ask for help to reduce the number of tasks you have.

Appendix B

Continued

2D SDAD Analysis Paralysis Worksheet

Use this guide to break through your ADHD Paralysis, Answer these questions to begin figuring out what to do next.

Name: _____ Date: _____

Project Name: _____ Project Duration: _____

3. Interests/Rewards

1. Do you just feel unmotivated because you're not invested in your project? Y / N

2. What is something you are interested in that will make you more excited to work? Circle something you're interested in!

exercise guitar music
drawing technology sports movies
media cooking photography

Other: _____

2. Can this interest be incorporated into your Design Project to keep you engaged in your tasks? If so, how:

3. Can this interest be a reward for completing a task or finishing your Pomodoro rounds? Y / N

4. If no, Pick a reward to give yourself that will motivate you to complete the tasks ahead of you:
(i.e. a sweet treat, a walk, a new item, new packet of stickers, etc.)

4. General

Circle the tactics you are going to give a try to break through your ADHD paralysis:

Re-Prioritizing Tasks Simplifying Tasks
Pomodoro Method Rewards/Incentives Adding in Interests Mind Dump
Delegating Tasks Moving Around/Movement Breaks

Appendix C

SDAD Self-Reflection Worksheets

3A SDAD Self-Reflection Worksheet

Use this guide to keep track of how this project went for you, this guide is built to work with the SP.SR.Approach.

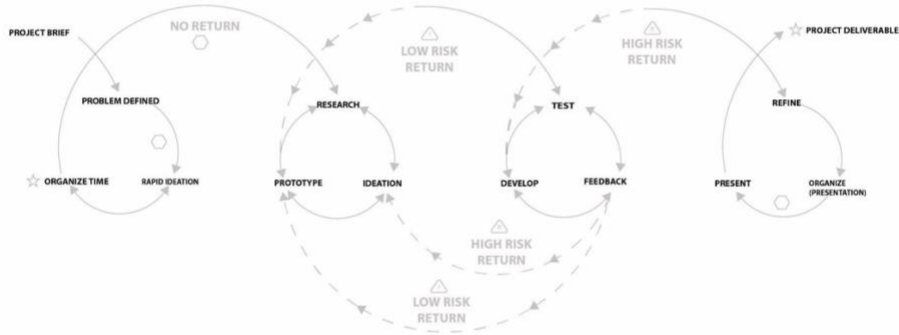
Name: _____ Date: _____
 Project Name: _____ Project Duration: _____

The Spiral Staircase Approach Tracker:

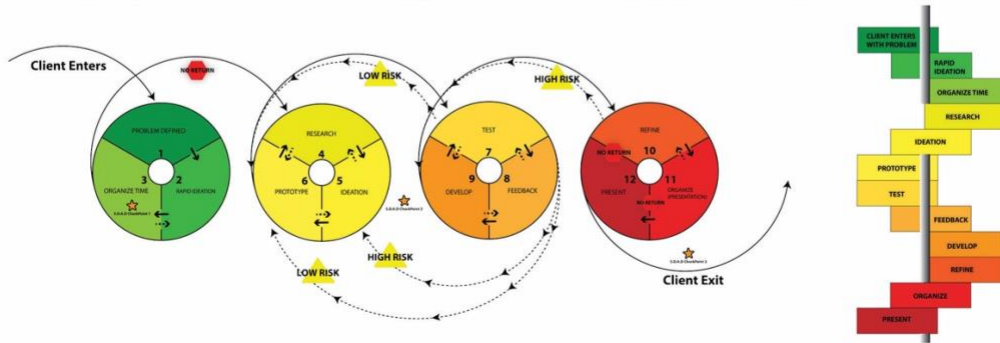
Use this Template to track how many times you repeated a step or stage of the Spiral Staircase Approach.

Make sure to mark where you got stuck or when you used the Analysis Paralysis Guided Worksheets.

This will serve as a record for you to compare progress for future projects.



The Spiral Staircase Approach:



Appendix C

Continued

3B SDAD Self-Reflection Worksheet

Use this guide to keep track of how this project went for you, this guide is built to work with the SP.SR.Approach.

Name: _____

Date: _____

Project Name: _____

Project Duration: _____

Congratulations on Completing your Project!

Answer the questions below to begin recording your progress on the design process with each project you accomplish!

1. Was this project a team or individual project? *circle:* Team Individual
2. Did you finish on time? Y / N ; if no, how long did it take you past due date: _____
3. At any point did you experience ADHD Paralysis? Y / N ; if yes, at which step? _____
4. Which type of A.D.H.D. Paralysis did you experience? *circle which one(s):* Mental Task Choice
5. Which tactic(s) of the Analysis Paralysis guide were most helpful to you? _____
6. Which Stage are you most proud of / felt you exceeded in the most? _____
7. Which Stage took you the longest, that you should account for more time in the next project? _____
8. Did you use the Time Management Work Sheet? Y / N ; if yes, was it helpful? *(fill out chart on the next page to get your final score!)*
9. Did you repeat any steps? mark which ones and the amount of times you repeated them. *(use the template to count your steps)*

_____ 1. Problem Defined _____	Rapid Ideation _____	Organize Time _____
_____ 2. Research _____	Ideation _____	Prototype _____
_____ 3. Test _____	Feedback _____	Develop _____
_____ 4. Refine _____	Organize Presentation _____	Present _____

Appendix C

Continued

3C SDAD Self-Reflection Worksheet

Use this guide to keep track of how this project went for you, this guide is built to work with the SP.SR.Approach.

Name: _____

Date: _____

Project Name: _____

Project Duration: _____

The Spiral Staircase Approach Points Tracker:

If you want to see your overall score for this project to track your progress,
Use the Calculated Bonus Points from your time management sheets to count up your total score!

(optional)

If you repeated...

in general	+ 0 pts
a low risk step	- 5 pt
a high risk step	-10 pts
after a no-return	-20 pts

Workspace

Step	Completed +10	# of times Repeated	Took a low-risk to repeat? -5	Took a High-risk to repeat? -10	Repeated after a no-return? -20	T.M. Points	Total:
1. Problem Defined							
2. Rapid Ideation							
3. Organize Time							
4. Research							
5. Ideation							
6. Prototype							
7. Test							
8. Feedback							
9. Develop							
10. Refine							
11. Organize Presentation							
12. Present							
Total							

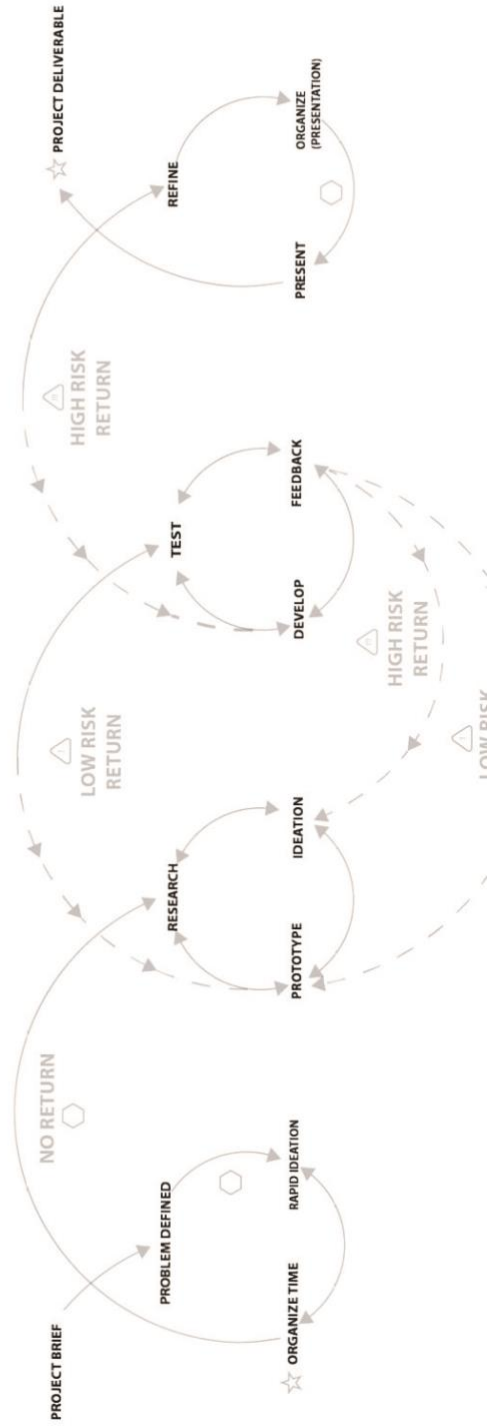
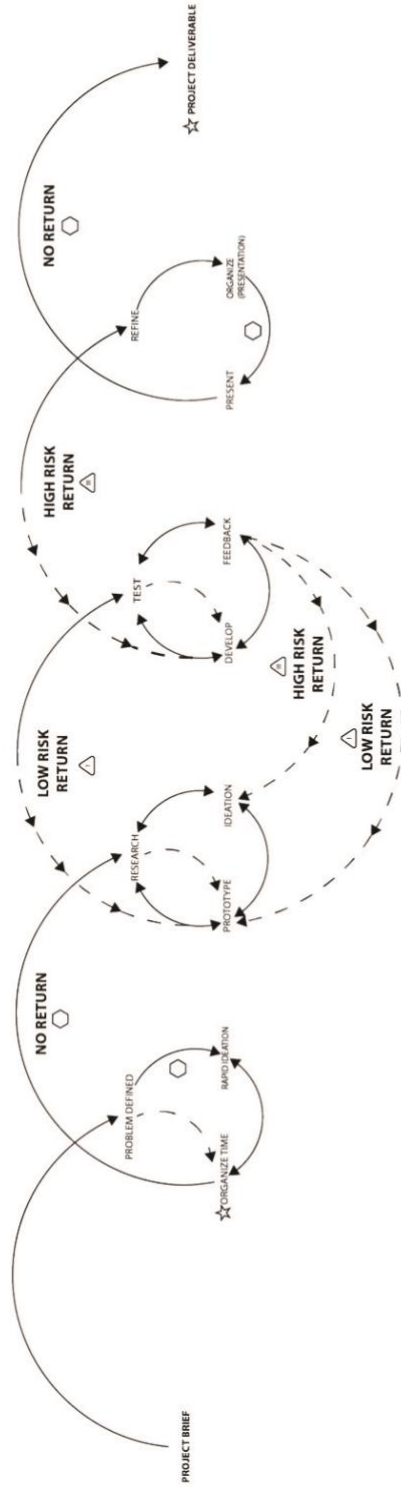
Congratulations on Completing your Project!

Use this score as a baseline for your next project to see if your
process has improved or changed since the last project!

Total Points Overall!

Appendix C

Continued



Appendix C

Continued

3D SDAD Self-Reflection Worksheet

Use this guide to keep track of how this project went for you, this guide is built to work with the SP.SR.Approach.

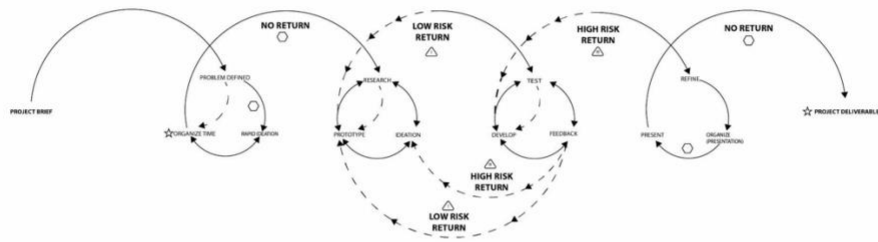
Name: _____

Date: _____

Project Name: _____

Project Duration: _____

Mark your favorite steps and the ones you became stuck/struggled with the most:



Notes for your next project: (Include what you would do different and keep the same)

Large empty rectangular area for writing notes.

Appendix D

Chat GPT Persona Description

“I see, that's an interesting and impactful thesis! Designing a process that specifically helps students with ADHD navigate the challenges of analysis paralysis and time management in an Industrial Design context is a great way to support their academic success and creative flow. I'll help you create two personas that demonstrate different ways of using your new approach, with distinct needs and habits that reflect the diversity within the ADHD community.

Here are two example personas, along with their possible differences in how they might engage with your approach.

Persona 1: **Ava** (The Visual Thinker)

- **Age**: 20

- **Year**: 2nd Year Industrial Design Student

- **Background**: Ava was diagnosed with ADHD when she was a child. She has struggled with focus and organization throughout her life. She's creative, intuitive, and a big picture thinker, but often overwhelmed by too many details. She tends to hyperfocus on one idea, to the point of neglecting other important aspects of the project. Ava also has issues with time management, often underestimating how long tasks will take and losing track of time in the middle of a project.

- **Strengths**: Highly creative, passionate about design, enjoys sketching and ideation phases.

- **Challenges**: Struggles with prioritizing tasks, staying organized, and balancing time between creative work and project deadlines.

Ava's Use of the Design Process Approach

- **First Impressions**: Ava gravitates toward the more visual aspects of the process. She likes the "stair-step" approach because it helps her take things one step at a time rather than feeling overwhelmed by the entire project. She appreciates the structured pauses at each step, which allow her to reflect on whether she's moving in the right direction.

- **Breaking through Analysis Paralysis**: Ava tends to get stuck in the "idea generation" phase, constantly iterating but not moving forward. The design process approach helps her by encouraging short, quick decision-making moments at each step, where she has to choose a direction without overthinking. She also uses the feedback moments in the process as a way to validate her choices before moving forward.

Appendix D

Continued

- **Time Management**: Ava struggles with time management, so the process's built-in "checkpoints" to assess progress (e.g., every time she reaches a new step) help her stay on track. The flexibility to "go up and down the stairs" also allows her to pause and review her work at any point, preventing her from falling too far behind or spiraling into perfectionism.

Key Differences:

- **Uses the process to combat hyperfocus** by setting checkpoints that remind her to step back and reflect.

- Prefers the visual, step-by-step nature of the approach that keeps her from feeling overwhelmed.

- Finds the flexibility of moving between steps to be very useful, as it lets her jump between different tasks without losing momentum.

Persona 2: **Ethan** (The Pragmatic Planner)

- **Age**: 21

- **Year**: 3rd Year Industrial Design Student

- **Background**: Ethan was diagnosed with ADHD later in life, around his junior year of high school. He's always struggled with staying on task, especially when it comes to longer-term projects. He's more detail-oriented than Ava but still finds it difficult to estimate time and focus on

specific subtasks. Ethan has a tendency to get bogged down by minor details and prefers to follow a structured process. He's naturally more cautious and methodical but often finds himself bogged down in decision-making.

- **Strengths**: Highly detail-oriented, enjoys problem-solving and analyzing data, likes to ensure things are done correctly.

Appendix D

Continued

- **Challenges**: Struggles with decision fatigue and tends to get stuck in the planning or “what if” phase. Time management is a challenge, especially when tasks pile up.

Ethan's Use of the Design Process Approach

- **First Impressions**: Ethan immediately appreciates the structured, step-by-step nature of the process. He likes the "stairs" as a metaphor for progress and finds comfort in having clearly defined phases to work through. He's less interested in the creative or fluid aspects of the process, but he understands the value of breaking down his work into manageable parts.

- **Breaking through Analysis Paralysis**: Ethan's major struggle is with making decisions. He'll often second-guess himself, which leads to delays. The design process's "check-in" steps give him the clarity he needs to make decisions more confidently. The process also provides a method for assessing his work at regular intervals, which prevents him from spiraling into excessive self-criticism.

- **Time Management**: The step-by-step structure is helpful for Ethan because it forces him to break tasks into smaller chunks. He uses the process's checkpoints to reevaluate his timeline and adjust as necessary. However, because Ethan has trouble estimating time, he sometimes gets too caught up in the "details" at each step, leading to longer-than-expected progress on some tasks. The process allows him to recognize this pattern and adapt, which helps him stay on track without getting overwhelmed.

Appendix D

Continued

****Key Differences**:**

- ****Uses the process to combat indecision**** by making choices at each step and checking in regularly.
- Prefers a more structured, predictable approach and can get bogged down in details unless reminded to move forward.
- The rigid "checkpoints" and clear boundaries between steps help him avoid paralysis by analysis but also risk getting stuck in perfectionism.

Summary of Differences:

- ****Approach to Process**:**

- Ava uses the process in a more flexible, visual way, benefiting from the creative freedom to move between steps as she gets inspired.
- Ethan values the structure and clear delineation between steps, using the process to stay grounded and make confident decisions, even if he struggles with perfectionism.

- ****Decision-Making**:**

- Ava's main challenge is avoiding getting stuck in an idea loop, so the process helps her move past indecision quickly.

Appendix D

Continued

- Ethan's challenge is decision fatigue, so he uses the checkpoints to make more confident decisions and reassess when necessary.

- ****Time Management****:

- Ava uses the process to break through her tendency to hyperfocus, with periodic check-ins helping her adjust as she goes.

- Ethan is more focused on managing time upfront, breaking tasks into smaller pieces, and adjusting deadlines based on checkpoints.

Both personas show how a flexible, step-by-step design process can be adapted to the different needs of students with ADHD. By providing structure but also allowing for individualized pathways, this approach can support students in overcoming common ADHD-related challenges like analysis paralysis, decision-making fatigue, and time mismanagement.”

Appendix E

Hypothetical Project Brief for the Persona's Worksheets.



Pivot & Pickle

SPORTS INC.

PROJECT BRIEF 2025

PROJECT DESCRIPTION

To create the next innovative hybrid sports racket to break the market.

PROJECT OBJECTIVES

- Well-crafted ergonomics
- Comfortable grip
- Use of innovative materials
- Packaging and branding to match Pivot & Pickles' brand.

TARGET MARKET

- Individuals who are looking for new gameplay and better their endurance
- 13-75 age range; multi-generational
- Recreational and Professional Players

TIMELINE OF THE PROJECT

- January 6th - Kickoff Project
- January 27th - Research Presentation
- February 24th - Concepts Presentation
- April 15th - Final Presentation