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Paula Andrea Avila Jimenez

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CRITICAL AND CREATIVE THINKING PRACTICES AND PRINCIPLES
TO IMPROVE AUDIOVISUAL PRODUCTION

by

PAULA ANDREA AVILA JIMENEZ

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SYNTHESIS*

MASTER OF ARTS

CRITICAL AND CREATIVE THINKING

UNIVERSITY OF MASSACHUSETTS BOSTON

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Advisor: Jeremy Szteiter

* The Synthesis can take a variety of forms, from a position paper to curriculum or professional development workshop to an original contribution in the creative arts or writing. The expectation is that students use their Synthesis to show how they have integrated knowledge, tools, experience, and support gained in the program so as to prepare themselves to be constructive, reflective agents of change in work, education, social movements, science, creative arts, or other endeavors.

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Abstract

The purpose of capstone is to address the application of Critical and Creative Thinking practices and principles to improve audiovisual production that intends to communicate complicated health information. This paper synthesized the application of the principles of the Habits of Mind (HOM) as Critical and Creative Thinking tool to improve audio-visual (AV) production. The project that spurred this specific question was my experience working as a Research Assistant (RA) at the Dana Farber Cancer Institute (DF) where I developed videos and booklets to help Latino patients to understand the purposes of chemotherapy in advanced cancer. Five principles of Habits of Mind (HOM) were identified and how their application might improve video production process and prompts AV creator's creativity: 1. Persisting, 2. Listening to others with understanding and empathy, 3. Thinking about our thinking or Metacognition, 4. Striving for accuracy and precision, 5. Finding humor. In this synthesis, I explain why critical and creative thinking practices and principles are need in audio-visual production, the application of HOM in English-Language Learners (ELLs), and the application of HOM in EL CENTRO. Finally, I make/give recommendation for AV producers, reflect on how the Critical and Creative Thinking program helped me to become a better filmmaker, and my synthesis conclusion.

Keywords: audiovisual production, creative and critical thinking, Habits of Mind, advanced cancer

**Critical and Creative Thinking Practices and Principles to improve Audiovisual
Production**

The Critical and Creative Thinking (CCT) MA program at the University of Massachusetts, Boston provides students with approaches and tools in critical and creative thinking to become agents of social change. After sixteen years of working as a TV producer in commercial television in Colombia, South America, I wondered about the need for developing good thinking skills to manage the enormous amount of information that we are exposed to as well as the power of mass media and the ethics of AV creators and producers to create useful and meaningful content for audiences. This capstone addresses the application of Critical and Creative Thinking practices and principles to improve audiovisual production that intended to communicate complicated health information.

The project that spurred this specific question was my experience working as a Research Assistant (RA) at the Dana Farber Cancer Institute (DF) where I developed videos and booklets to help Latino patients to understand the purposes of chemotherapy in advanced cancer. The project focused on educating and engaging Latinos cancer patients in the U.S. By producing a suite of 10 videos and booklets for a Randomized Control Trial – RTC conducted by Dana Farber Cancer Institute and Harvard Cancer Center. To develop the RTC interventional instrument, I interviewed patients, doctors, social workers, and a nurse at the Dana Farber Cancer Institute Boston (DFCI), DFCI Lawrence, Boston Medical Center, and Moffitt Cancer Center.

I In order to successfully complete the project, and to reflect and share what I have learned in the CCT program, I used the Habits of Mind (HOM) as developed by Professor. Arthur Costa, and Dr. Bena Kallick, PhD. This capstone aims to reach out to AV producers who are focusing

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on creating, developing, and producing health videos. Also, it might reach the interest of health providers and institutions who intent to use videos as a tool to explain complex and complicated medical language for effective health communication with public.

This capstone discusses the EL Centro videos, a case study applying five of the Habits of Mind. I suggest applying the Habits as critical and creative thinking principles to enhance videos production focused on communicating complex health information. My capstone contains two parts: this paper and a video. The video was presented in my public presentation summarizing the DF video production process. Finally, the synthesis is structured in six main sections: 1) critical and creative practices and principles, 2) a case study, 3) HOM and critical thinking practices as they apply to the case study 4) recommendations for AV Producers 5) reflective practice – how the CCT program helped me to be a better filmmaker, and 6) conclusions.

Critical and Creative Practices and Principles

Introduction to Critical and Creative Thinking and Why It Is Essential

In recent decades, areas such as technology and communications have changed in terms of development and how people get information. Those changes are challenging people to update knowledge as quickly as possible to compete with others all over the world (Lau, 2011).

Additionally, new mediums like the Internet, social media, and video-sharing websites have increased the amount of information consumed by people. Therefore, people must decide quickly what Information is useful and which information is not. It is possible that whatever is available online may not be truthful or may need to be updated tomorrow. Thus, it is relevant that people develop good thinking skills to define which information might be useful to make better decisions in their lifetimes.

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Essentially, good thinking skills are related to Critical and Creative Thinking (CCT), having said that both complement each other. Although there are many definitions for CCT in literature, the most straightforward description suggests that it is the capacity to think clearly and rationally using logic to process any information. In contrast, creative thinking is the capacity to come up with useful new and novel ideas to solve any problem or challenge (Lau, 2011).

CCT is indispensable in people's lives not only to address relevant issues in all sorts of professions but also in our daily lives to analyze, evaluate, apply and/or communicate with accuracy to others. Consequently, a critical thinker is a person who understands concepts using logic to identify, construct, and investigate arguments. So, they formulate ideas with accuracy evaluating the pros and cons to make the best decisions or solve any challenge.

However, anyone who wants to be a critical thinker needs awareness and organization to train their mind and brain. To support critical thinkers, Professor. Arthur Costa, and Dr. Bena Kallick, PhD developed a set of dispositions that describe an effective and efficient thinker, called the Habits of Mind (Costa et al., 2001; Habits of Mind, 2012).

The Habits of Mind

The Habits of Mind (HOM) are attitudes, dispositions, and inclinations that empower CCT skills in problem solvers, thoughtful decision-makers, and creative thinkers. Costa et al. (2001) defined the HOM as "a disposition toward behaving intelligently when confronted with problems." Thus, the HOM are more than a method for self-development, mind training, or cultivate reasoning, accuracy, and creativity. Costa et al. (2001) explain that applying the principles of the HOM requires people to make use of patterns of intelligent behavior to produce powerful results. To start, Costa and Kallick (2018) describe five general characteristics of a person who exhibits the HOM:

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1. **Value:** voluntarily making a choice to follow intellectual behavioral patterns rather than other less productive patterns.
2. **Inclination:** the constant feeling to use intellectual behavioral patterns.
3. **Sensitivity:** an awareness of the opportunities, and appropriate occasions of using intellectual behavioral patterns.
4. **Capability:** own the skills and capacity to stand and to act under intellectual behavioral patterns.
5. **Commitment:** regular effort to think about patterns of intellectual behavior and enhance its execution

Beyond identifying characteristics of a good thinker, Costa and Kallick (2009) developed a set of sixteen habits that are useful in problem-solving, decision-making, and CCT. The sixteen habits or attributes are an identified set of life related skills for solving that are necessary to be operated effectively as individuals in daily bases and rarely apply in isolation. Instead, they should be used and overlap as many times as needed to behave intelligently. The principles of HOM are:

1. Persisting
2. Managing impulsivity
3. Listening to others with understanding and empathy
4. Thinking flexibility or lateral thinking
5. Thinking about our thinking or Metacognition
6. Striving for accuracy and precision
7. Questioning and posing problems
8. Applying past knowledge to new situations

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9. Thinking and communicating with clarity and precision
10. Gathering data through all sense
11. Creating, imagining, and innovating
12. Responding with wonderment and awe
13. Taking responsible risks
14. Finding humor
15. Thinking interdependently
16. Learning continuously

The HOM are the foundation of my CCT journey, and over time, I have been using the sixteen HOM as a guide to define my personal and professional CCT practices and principles. My capstone focuses on five of the 16 CCT practices and principles for audiovisual (AV) producers. I use the HOM to embrace new habits for AV careers in production and producing. I classified the sixteen habits in two different categories: the first category uses eight of the HOM to guide my critical thinking and the second to guide my creative thinking in AV production.

CRITICAL THINKING	CREATIVE THINKING
<ol style="list-style-type: none"> 1. Managing impulsivity 2. Listening to others with understanding 3. Metacognition 4. Questioning and posing problems 5. Apply past knowledge to new situations 6. Think and communicate with clarity and precision. 	<ol style="list-style-type: none"> 1. Persistent 2. Thinking flexible or lateral thinking 3. Striving for accuracy and precision 4. Creating, imagining, and innovating. 5. Responding with wonderment and awe 6. Taking responsible risks 7. Finding humor 8. Thinking independently

7. Gather information with all senses	
8. Learning continuously	

A Definition of Habits of Mind, Practices and Principles

It is important to define the meaning of the key terms of “habit, practice and principle” which are often used in this synthesis. First, a habit is a routine or behavior that has been implemented by repetition and has become automatic over time (Clear, 2018). Often, habits are actions or responses that people make every day. Habits are choices that we make consciously, but after a while, we stop thinking about them because they have become automatic. When we stop to think about how to make a choice, and the behavior becomes automatic, a new habit is added to our minds (Duhigg, 2012).

Almost every routine added as a habit allows people to stop thinking about what to do in a specific situation (Duhigg, 2012). Thus, the brain can use its energy and focus on learning or doing other things. AV producers could use the mindset of HOM to train their brain to automate such behaviors needed in video production so that they can devote their minds to the details and minutiae of their art and creativity.

Next, practices are the actual application of an idea, belief, or method (Merriam-Webster Dictionary, 2016). Practices are activities or exercises that help to improve or maintain one's proficiency through repetition. In other words, practices are actions used to change behaviors or modify values for self-development, effectiveness, and productivity. Effective practices could be used for people to ensure that they are efficiently moving towards their aims. Practices force people to set goals to work and actively track their actions to see progress and improvement over time.

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In AV production settings or environments, critical thinking practices are tools, strategies, and methods that AV creators use to execute their projects. The practices are based on the creators' knowledge, experiences, and self-assessment. Critical thinking practices should be used to evaluate, update, and modify project workflow, whereas creative practices are routines and tools that AV producers should use to build up or to spur their creativity. Creative thinking practices are exercises that challenge AV producer's imagination and creativity every day.

Finally, principles are propositions or values that guide behaviors or evaluations to assess what is most efficient. Principles are the center structure of peoples' underlying beliefs and self-progress. Also, principles are the foundation of our core beliefs, values, and experiences that motivate our actions. Indeed, it is vital to create a set of principles or rules as a guide or manual to behave coherently between what one believes, thinks, says, and does.

Critical thinking principles are propositions that guide how an AV producer or creator behaves intelligently to make the best judgment while working on a video project. On the other hand, creative thinking principles are the values that guide the AV producer's careers. The creative principles are the foundation for AV producers' creativity to know what to do and how to behave to enhance and spur their creative processes every day.

Critical and Creative Thinking in Audio-visual Production

In practice, it is true that by using creative thinking, people can come up with new and novel ideas to solve any problem or challenge. However, critical thinking is needed and crucial to assess and enhance the creative process itself (Lau, 2011). Also, it is useful to build up habits and strategies to yield those ideas. With critical thinking, AV creators develop video project's content using reasoning and an open mind to come up with the best possible video shots, sounds,

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or scripts to tell their stories. Thus, AV producers will deliver truthful information to viewers that they could use to make conclusions or judgments or find solutions to address any challenge.

At the same time, creative thinking is the ability to use AV creators' imagination to design new and unique ideas, solutions, or conclusions. In colloquial terms, it is to "think outside of the box." The Greek philosopher, Socrates said: "the unexamined life is not worth living." Hence, when someone works to improve CCT skills, they enable new chances to find meaningful goals to pursue and plan. Besides, they contribute to the process of self-evaluation to transform their lives or enhance any other obstacle or challenge.

The AV production process involves many steps or stages. Those stages guide AV producers from the spark of an idea to the final video or movie. Thus, a process that has large numbers of steps needs to be continuously revised, looking for more efficient and productive processes. As an AV producer, I see the need for CCT practices and principles in my daily routine, but more importantly, in my career. CCT practices and principles helped me to have a better understanding of my audience, as well as my creative process as an audiovisual artist.

Although my experience at Dana Farber Cancer (DFCI) is focusing on health communication – videos for effective communication between patients and providers, the CCT practices and principles suggested in this synthesis could be used any time and on any current or new video project. Indeed, the goal is to make these practices and principles, automatic responses – habits – when an AV producer no longer knows what to do or where to go.

Applications of the Habits of Mind

In the '80s, Costa was invited to edit the book *Developing Minds. A Resource Book for Teaching Thinking*. While Costa edited the chapters, he found that experts described similar patterns and features of what good thinkers do when they encounter challenges (Costa et al.,

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2001). The HOM are a synthesis of what effective thinkers do in many walks of life. After Costa put similarities together, linked them, and classified them, he compounded sixteen principles to be a good decision-maker and problem-solver.

Over the years, researchers have inquired and assessed the effectiveness of the HOM, mainly in schools. However, the HOM have several applications not only in education but in business, science, and any other disciplines. Over time, the Institute of Habits of Mind has received informal and academic reports showing the impact of the uses and applications of the HOM by students in classrooms and schools.

The first most common data received at the institute are anecdotal stories and informal reports. Costa and Kallick (2009) state that anecdotes are the most substantial evidence of the power of the HOM because they collect experiences over the years and around the world. Costa also suggests the relevance to emphasize that informal reports and stories show consistent patterns among students, classrooms, and educational institutes after applying the HOM.

The data collected from such informal sources is based on the observations among the HOM users (Habits of Mind, 2012). Stories told by educators show that when a student learns, engages, and becomes aware of uses of the HOM, benefits can be seen over time. For instance, evidence shows that students use and apply the terminology to their understanding even if they are in first or more advanced grade (Costa & Kallick, 2009). Besides, students are aware of the uses of the HOM in their own lives. Also, students recognize when someone applies the HOM inside and outside the classroom. Students use the Habits of Mind as a basis for work at school, as well as in daily lives without teacher supervision.

In 2015, authors Gooden and Chase from Boston University and the Malden, MA school district conducted a research-based report using control groups to test the effectiveness of the

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using of the HOM in the classroom. They worked in a partnership to develop a curriculum around five of the sixteen HOM to support English learners in their community

Gooden and Chase developed a curriculum that connected English-Language Learners (ELLs) students with their living experiences inspiring higher critical thinking skills, dispositions towards academic learning, and the uses of the HOM. The program focused on the following HOM: perseverance, empathy, and listening to others, imagination, precision, and learning continuously. During this five-week program, students engaged each week with one of five HOM selected as a core of the program.

At the end of the program, Gooden and Chase collected data to assess the impact of the program among students, teachers, and parents. Using surveys as a tool, the authors found that 99 percent of students reported that the program was "very important" to improve speaking, reading, and listening language skills. In addition, 97 percent of students said that the program was "very effective" as a motivator to attend college. Finally, 89 percent of students said that after the program, their confidence in their academic success increased considerably. The results of the study show that implementing a program focusing on teaching students and integrating adults in their children education using the HOM might provide a better learning experience for learners and improve curriculum development.

The teachers' data was collected using interviews, focus groups, and observations. The results showed that 90 percent of teachers said that their knowledge about curriculum development increased. Also, 95 percent reported that their teaching experience at the ELLs program helped them to develop their pedagogical knowledge. Finally, 95 percent said that their intercultural awareness and competence increased after participating in this program.

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Furthermore, the program worked to include parents in the learning process. The ELL's program created a parents' breakfast program "to help caretakers identify ways to become partners with the school" (Gooden & Chase, 2015). From the parent focus groups, the feedback collected suggests that 93 percent of parents "revealed that they learned more ideas about supporting their child's language development." Besides, 89 percent also reported substantial improvement in their confidence and ability to guide their children to navigate the education system in the US. Finally, 95 percent of parents said that they learned how to help their children to prepare for college and their career readiness.

The evidence suggests that as the school team begins to utilize the HOM across all grades and classes, the school culture changes in a positive way (Costa & Kallick, 2009). Teachers and administration begin to work together by sharing their collective vision. Indeed, the school environment and the teachers who embrace the HOM start to use them as a norm to guide their work and life.

In summary, people need CCT practices and principles to guide their thinking process while dealing with the large amount of information available nowadays. A good critical thinker assesses and analyzes data to provide creative and effective solutions while facing any problem or challenge. The Habits of Mind (HOM) provide a set of dispositions and attitudes that empower the development of CCT practices and principles. In AV production, the HOM are applicable to revise the AV production process, better understand audiences, increase AV producer's creativity, as well as create better outcomes based on audiences' needs.

My Case Study at El Centro

My bachelor's degree is in Social Communication and Journalism: From the social communication component, I learned about anthropology, sociology, and communication theory,

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and from the journalism component, I learned about writing, investigative journalism, and media production. Certainly, I was inclined put emphasis on media production to direct my professional pathway towards television. However, I had not learned about Critical Thinking until many years later. Indeed, I would say that investigative journalism is the only class that is close to teaching some sort of Critical Thinking practices and principles.

After working as a television producer for many years practicing the standard process of television production as a habit, my concern about how aware TV producers and directors were about the impacts of TV content on audiences increased. Every time that I produced a new prime time soap opera release, I questioned how much that content would influence Colombian society and Colombian's behavior. Looking to find answers regarding my concerns, I decided to pursue graduate school.

In the CCT program, I learned about strategies and tools to assess what I had learned in my career as a TV producer and my performance as an RA (what does RA mean?). During my degree, I took twelve classes that offered new knowledge and perspective that might be applicable in both depending on what I wanted to improve. I looked within my classes for approaches to help me to enhance audiovisual (AV) production as well as explore my creativity. Later in section five, I reflect on the CCT courses that most impact my career and life.

I learned about the Habits of Mind during the Critical Thinking course – CRCRTH 611. Because of its breadth and multidisciplinary application, I thought on the Habits of Mind (HOM) were an essential foundation to practice Critical and Creative Thinking in AV production. Hence, I suggest the use of HOM as a scaffold to enhance CCT skills in AV production and follow up on its progress. Fortunately, I had the opportunity to apply and practice the use of the HOM

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while working as a Research Assistant (RA) for two years at the University of Massachusetts Boston (UMass Boston).

My work as a Research Assistant (RA) in the US

The National Institutes of Health (NIH) (2019) "is the largest public funder on biomedical research in the world." The NIH invests more than 32 billion dollars every year to improve people's lives, reducing diseases and social disparities. One of the grant programs supported by NIH is the U54 grant that supports a full range of multidisciplinary health care research. This research could be focusing on biomedical problems as well as patients' health care. In a partnership between UMass Boston and Dana-Farber Cancer Institute/Harvard Cancer Center (DF/HCC), the U54 funds national research on cancer.

The EL Centro —Engaging Latinos in the CENter of cancer TRreatment Options— research is focused on improving “the quality of advanced cancer care and treatment decision-making for Latinos” (Grantome, 2017, add page number). By developing tailored educational material to inform patients about their illness, prognosis, and chemotherapy risks/benefits, my role in EL Centro research was to develop and produce a suite of videos and booklets. The educational material is been use as an interventional instrument in a Randomized Control Trial (RTC) run by DFCI.

The videos and booklets created were used to access to the effectiveness of communication between patients and providers in the control trial. While developing the videos and booklets, I recognized that by applying the Habits of Mind (HOM) I could support the appraisal of my creative process as well as in the video production process.

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The educational material used in the RTC consists of ten videos and complementary booklets. I made five videos and booklets in Spanish and five of both in English for a total of ten videos and booklets. Thus, the videos and booklets include Latino patients regardless of their language preference. Finally, the videos length is between twenty-five to thirty minutes.

The Objective of El Centro

Previous research in health communication shows that Latinos in the US have a misunderstanding about the purpose of chemotherapy and options for advanced stages of cancer (Culver et al., 2004). Accordingly, Latinos with incurable cancer who have an overly optimistic hope of prognosis, often receive palliative care in the End-of-Life (EOL) without understanding that chemotherapy is not a cure. Instead, chemotherapy is a form of palliative care that might improve life expectancy and relief pain in cancer patients. Such misconceptions generate high expectations in Latinos about their prognosis after using chemotherapy as well as contributing to Latinos/non-Latinos disparities in the EOL health care services.

Interventional research studies such as the EL Centro are relevant for a better understanding of what factors are involved in doctor-patient communication. Thus, communicators focusing on health may use this data to create and develop effective educational materials for patients, caregivers, and the general public. As a result, health care providers could help patients to clarify and assimilate complex and complicated medical Information using colloquial language.

One of the aims of the EL Centro is to test the effectiveness of videos and booklets created by DF/HCC in an RTC's. To do so, the DF/HCC has been running a control trial that involves 116 Latinos with stage four GI (Gastro-Intestinal) cancer. The expectation is to prove that DF/HCC interventional materials help Latino patients and caregivers in decision-making

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about cancer treatments, EOL as well as improve their satisfaction with doctor-patient communication.

Latino cancer patients who understand chemotherapy purposes, benefits, and risk before signing any written informed consent (IC) to health providers are more likely to make mindful decisions to control symptoms, chemo side effects, and communication with their families, caregivers, and providers. Besides, providers and the health care team can guide patients and caregivers through the health services system and financial support based on patients' needs. To sum up, DF/HCC and UMass Boston videos and booklets may contribute to improving communication disparities between minority patients and health providers (Appendix A).

Analysis and Suggestions Prior DF/HCC Videos

The EL Centro research is an effort to improve the prior work of co-authors Dr. Schrag and Dr. Enzinger (DF/HCC). A similar research study produced five videos and booklets or educational material to "balance attention to risks and benefits, offer context about the underlying cancer, and include patient voices" (Grantome, 2017). The old educational material aimed to help Latinos to clarify misconceptions about the purpose of chemotherapy. As a result, disparities within Latino patients with stage four GI cancer could decrease. The five prior videos and booklets interviewed doctors, nurses, and patients in English.

Prior DF/HCC educational materials explained chemotherapy's potential benefits, risks and side effects using providers' and patients' voices. However, feedback received from the focus groups as well as interviews of patients, caregivers, and providers suggested vital points to consider in developing and producing the new Spanish videos and booklets, including how to effectively communicate complex and complicated medical terminology.

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The chemotherapy treatments explained in the EL Centro videos and booklets treats two types of GI cancer: pancreatic and colorectal. Although pancreatic and colorectal cancers are both gastrointestinal, there are slightly different chemical components used in each treatment. To treat pancreatic cancer, DF/HCC researchers used three types of medication, while for colorectal cancer, the study used two kinds of chemo. Each of the five videos explained one specific medication regimen, and it was complemented with a booklet that had more detailed information. See the chart below:

Chemotherapy Treatment – Pancreatic Cancer	Chemotherapy Treatment – Colorectal Cancer
<ul style="list-style-type: none">● Folfirinox	<ul style="list-style-type: none">● Folfiri
<ul style="list-style-type: none">● Gemcitabine	<ul style="list-style-type: none">● Folfox
<ul style="list-style-type: none">● Gemcitabine + Nab	

Prior English Video Analysis

Video structure is a term used in film and video production that includes two concepts. The first concept is how directors and editors use the footage to tell the story. It refers to the main structural elements that layout the content and audiovisual rhythm. The second are hooks that scriptwriters, directors, and editors use to keep the audience's attention. Mainly, it is the use of structural elements as opportunities to engage and commit the audience with a film or video until the end.

The prior DF/HCC educational material content had valuable information about chemotherapy options treatment. In the videos, doctors, nurses, and patients explain what the potential benefits and risks were and what side effects patients may experience. After the introduction, the videos started with doctors and nurses telling what chemotherapy is, some pharmacological information, what side effects patients may encounter, and how to deal with

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them, among other valuable information. After provider explanations, the video structure follows with patient interviews about their experiences with chemotherapy. In this section, patients share what it means to have stage four GI cancer. Patients shared some of the challenges they faced after diagnosis and the overall impact in their lives.

Although the first English videos gather the information needed for viewers to clarify any misconceptions about the purpose of chemotherapy in advanced cancer, there were crucial points that the EL Centro team considered in producing the new videos and booklets and to re-edit the prior videos. After analyzing the video structure described above, it was realized that the videos focusing on providers rather than patients and that the videos were not culturally geared towards Latinos. Based on the feedback mentioned above, meetings with Dr. Enzinger and the research team from DF/HCC, four major issues were focused on to produce the new educational material:

- Many doctors were presenting medical information with clinical language
- Medical information was too complicated or technical and hard to engage with
- Videos were produced from a doctor's perspective
- Culturally neutral

Finding Solutions to Crucial Issues in Original Videos

To find solutions for the issues described above, I started inquiring about what health science communicators have produced about advanced cancer and palliative care in the US, What I found was a considerable amount of video series, documentaries, and written material that address EOL and chemotherapy. These resources are available online for anyone who may need such information.

In the stage of pre-production, there were two sources that played a crucial role in my creative process to produce the new Spanish videos and re-edit the previous ones. The first

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source was *Being Mortal*, a FRONTLINE documentary episode inspired by the book of the same name written by Atul Gawande (FRONTLINE, 2015b). Likewise, the documentary inspired a short video-series named *Being Mortal* | #WhatMattersMost which posted on the Frontline PBS | Official YouTube channel (FRONTLINE, 2015a).

The "*Being Mortal*" documentary episode addresses Gawande's experience and reflections as a physician facing End of Life (EOL) decisions every day. In addition, the short videos on the Frontline PBS | Official YouTube channel narrates touching stories of patients, family members, caregivers, and physicians who deal with EOL. Both the documentary and short stories have valuable insights to better understand the decision-making by patients and family members as well as how they cope with EOL. Furthermore, the visual proposal and staging provided ideas on how to tailor the new videos as well as how to approach patients during video-interviews sections.

The second reference is the 2014 book *When the Breath Becomes Air* by Paul Kalanithi. In the book, the author tells his journey facing his cancer diagnosis. Interestingly, his dual position— cancer patient and physician —gave Kalanithi writing powerful tools to philosophize about what is meaningful when life is short. Moreover, the story is a reflection about what people value in life and could achieve through serving (what) and being grateful when facing EOL.

Frontline and Kalanithi's book were important in understanding the subject matter. However, most importantly, they facilitated my connection as an AV producer with doctors, nurses, and patients participating in the Spanish video production. Through my pre-production investigation, I was able to design a new video structure that not only balanced provider and

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patient interviews but also engaged viewers using patients' experiences. As a result, I better planned my Spanish shooting sections to guide the outcome of the video-interviews session.

Solutions to Produce New Interventional Instruments

The EL Centro team agreed that while having doctors and nurses in the video was relevant, the use of many providers presenting medical information might decrease viewers' engagement and attention as well as confuse them. Indeed, a dissertation focusing on science communication shows that audience misconceptions increase if the information is not told and transmitted accurately (Muller, 2008).

In the same way, although patients could ask questions at any time, complex and complicated medical information should be communicated creatively. As Jarvis and Parker (2006), experts in human learning, suggest the viewers might learn better if the new educational material uses secondary experiences from other cancer patients. Besides, the rate of engagement and assimilation of medical terminology may improve, too. Most importantly, new patients who access the latest educational material will receive the information needed, regardless of their educational background.

Although patients' voices were included, the prior videos prioritized doctors and nurses, not patients. Considering that the videos' viewers were patients and caregivers who were facing advanced cancer and chemotherapy, the videos should start with patients rather than with providers. The prior video structure prioritizes the interviews of doctors and nurses by giving them 25 minutes of talk time, in comparison with patient interviews which received 10 minutes of talk time. Besides, the video structure put patient interviews at the end of the video, which missed the opportunity to use patient testimonies to captivate viewers' attention and build up cultural engagement from the beginning.

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Finally, even though the aim of the videos was to test communication effectiveness within Latinos living in the US, the videos were only in English. Therefore, the videos did not break any linguistic barrier or decrease health disparities among Latinos. Because of the obvious hardship of the topic, the videos needed to include Latinos who prefer their mother tongue to talk about EOL, or who are not fluent English speakers. A 2014 study shows that linguistic barriers increase disparities among minorities in health care services in the US (Lee et al., 2014). Thus, patients who are immigrants and/or who belong to a minority group are unlikely to receive medical attention with a full understanding of prognosis, treatment options, and financial support. Eventually, the potential solutions suggested to produce the new Spanish videos and re-edit the prior English version were:

- Getting patients to tell their stories with emotion
- Having patients explained technical details to make the concept easier to grasp
- Producing videos from the patient's perspective
- Culturally targeted using Spanish speakers – patients and doctors

The Habits of Mind used with DF/HCC videos and booklets

Previously in section two, I defined the Habits of Mind (HOM) as a set of dispositions or attitudes that an individual must engage when facing a problem or challenge (Costa et al., 2001). When I first accepted the research assistant position at UMass Boston, I encountered a problem: I did not know what to do to make the prior English videos work or how to behave as an AV producer in a new country and work environment.

In my first year as a graduate student, I took a Critical and Thinking course (CRCRTH 601) and became interested in how to develop good thinking skills as AV creator and as a viewer. Based on my experience as an AV producer and with the clarity that creativity is more than

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artistic talent, I use my time at EL Centro to explore the uses of different critical thinking tools and theories. To create the DF/HCC educational material, I examined various kinds of critical thinking theories to assess my creative process while I was working on DF /HCC videos. During my two years in the, I used the EL Centro videos and what I learned in my graduate studies with the CCT program to synthesize my own professional set of practices and principles for AV production.

Although I explore different critical thinking approaches, I decided to use the sixteen principles of HOM to explore my journey as a critical thinker and creative AV producer. In like manner, the HOM provided a guideline and basis to reflect deeply about what possible CCT principles might be applicable in AV production. As a result, AV producers might use such principles to design innovative video structures and to develop content focusing on the audiences' learning needs; besides, to assess their creative process every time as needed.

With regards the DF/HCC videos, this synthesis reflects the uses of five of the sixteen HOM. I focused and assessed my critical thinking skills and my creative process as an example of this synthesis. As mentioned before, the HOM could be used in any order and may overlap repeatedly. The HOM used in this synthesis to unfold the EL Centro video production process and my creative process as AV creator were:

- Persisting
- Listening to others with understanding and empathy
- Thinking about our thinking or Metacognition
- Striving for accuracy and precision
- Finding humor

Applying the Principals of CCT and the Habits of Mind to the Case Study

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Five HOM principles

Primarily, from the sixteen principles of the Habits of Mind there were two, five are explored in conjunction with my video project. The principles chosen were narrowed down using two criteria. The first was to use the most general habits developed by Costa (why). The second is that the five habits that were chosen to follow a logical sequence for my needs towards the process of creating the DF/HCC videos as well as future projects.

HOM 1 – Persisting

In Costa's book *Developing Minds: A Resource Book for Teaching Thinking*, Costa claims that "*Persisting*" is a disposition that critical thinkers embrace in order to not give up easily. A good critical thinker uses different approaches as needed to analyze an issue, and develop a system, structure, or strategy to find the best possible solution when facing challenges. Thus, a critical thinker who exhibits persisting sticks with a project or task until it is finished regarding difficulties.

Based on Costa's explanation, I identified the use of the habit of "*Persisting*" across the EL Centro project regarding the development of my AV production skills. As a reminder to my readers, although I have seventeen years of experience as an AV producer, overall, my job was focusing on logistics and budget execution/financial administration. With the DF/HCC video production, I was in a different setting because I had the opportunity to use my artistic skills as a videographer. Thus, I had to check skills, which I had not did not applied in two decades. Persisting was relevant in sticking with practices to improve my visual composition, audio recording, photography, and scriptwriting, among others.

For instance, as an the EL Centro videographer, I was responsible for deciding the video equipment needed to produce the videos. Because I had not worked in video production for the

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last three years and technology changes faster every year, I looked for advice and recommendations from a former co-worker. After the DFCI bought a camera, sound recording system, and lights, I had several video conferences with my former cameraman and soundman to learn how to operate and use the equipment. Persisting was crucial to not give up sticking in my daily practice and routines, also to believe in myself as an artist and creator.

HOM 2 - Listening to Others with Understanding and Empathy:

The second HOM recognized in DF/HCC video production was "*listening to others with understanding and empathy.*" By Costa's definition, this attribute or disposition is the ability to listen, empathize, and understand other's ideas, behavior, and point of view (Costa et al., 2001). This habit is one of the highest forms of intelligent behavior, but it needs continuous self-follow-up on the critical thinker thoughts. In the case of AV production, creators should be good listeners to hear and understand what interlocutors say as well as understand the audience.

Mainly, I used the habit of listening to go through the feedback of the English. Using what viewers said, we (who is we? Be specific here) broke down the data to find strengths and flaws in the prior videos. The results were used as a guideline to make modifications in the EL Centro videos and booklets. At the top of that, we collected data from patients, caregivers, and family members who participated in the new Spanish videos.

During informal interviews, I asked patients, caregivers, and family members about how useful the information was. I also asked them about how much the content helped them in their decision-making in regards to treatment options, how much they engaged with the English videos patients, and what they would change for future videos if it were possible.

As a result of practicing the habit of listening, we conclude that the prior videos had the following strengths, which should remain in the new educational material.

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- The video contains the same information that patients receive during doctors' appointments. Viewers said that having the repetition of such information is useful because whoever needs can watch the video or read the booklet after doctors' appointments. Also, the videos and booklets might be shared with anyone interested, regardless of time or place.
- The visual aid that showed the treatment cycle was useful to the viewer because they had better understand about timing of the treatment. Hence, patients and caregivers could make their schedules for chemotherapy treatment days and follow-up appointments based on personal needs.
- The patients sharing real stories about their personal experiences were compelling and essential. Viewers suggested that having patients telling their experiences helped them to engage with the material. Also, patients' voices helped to soften the conversation about End of Life
- Although the access to the videos and booklets was limited to the control trial participants, the idea of having the videos and booklets online is crucial. Indeed, the feature allows anyone who wants or needs the Information to access easier regardless of time or location.

Finally, the most common recommendations to improve future videos and booklets were:

- The prior English videos begin with providers rather than patients. Thus, the viewers only saw the patient testimonies at the end of each video. Such narrative structure wasted the opportunity to engage viewers from the beginning.

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- The videos used many doctors and nurses explaining complex and complicated medical concepts and terminology. Viewers recommended potentially using patient footage to explain these ideas instead.
- Third lower credits were only seen at the beginning of the videos. As a result, viewers were confused about having many providers. Moreover, they tended to forget who was on the screen throughout the video.
- The videos are in English, and some Latino cancer patients, as well as family members, did not speak English or felt more comfortable listening to such valuable information in their native language.
- The videos and booklets are meant to be for Latinos; however, the viewers claimed non-cultural identification. The reason suggested is that the video and booklet subjects - patients and providers - were black or white Americans.

Practicing listening and empathy help me to be more mindful of the information that viewers need to hear again. Besides, the practice of listening was the first approach with patients who want to be part of the educational material giving relevant information about them. So that, I prepared my video interviews to take the best of them in front of a video camera. Being aware of listening and empathy is an essential skill that an AV creator needs to develop to create more mindful video products.

HOM 3 - Thinking about thinking or Metacognition:

The third HOM acknowledged in DF/HCC educational material was "*Thinking about Thinking or Metacognition.*" Costa (fix the citation) defined Metacognition as the ability to understand our thinking process to devise a strategy or a plan to produce any outcome. It is the mental processes involved in knowing what one knows or what one does not know. In critical

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thinking, *Metacognition* is fundamental to plan for, reflect on, and evaluate the quality of outcomes, as well as the process. Mainly, critical thinkers practice *Metacognition* to revise knowledge and the effectiveness of its application. For the DF/HCC videos, I applied *Metacognition* to evaluate my AV production knowledge and creativity. With this habit, I was able to assess my expertise in AV production and reflect on how to update the skills needed to produce the videos. As a result, *Metacognition* was a significant factor in developing my subject-skilled performance.

To assess my skills as a videographer such as camera and sound operation, scriptwriting, conceptual editing, among others, I reflected on the following elements based on my previous experience in the TV industry to:

- Understand what I already knew about video equipment to update knowledge.
- Figure out what I wanted to know about video production in the pharmaceutical industry with educational nuances.
- Realize what I must learn about chemotherapy to make the videos and booklets precise and based on accurate information.
- Monitor my understanding of the scriptwriting and conceptual editing process.
- Choose strategies to self-learning the videography skills needed.
- Evaluate whether a self-learning strategy was successful or not.

Practicing *Metacognition* was essential for my creative process exploration. It gave me the ability to question my actions, track my learning process, and systematically assess outcomes. While making the EL Centro videos and booklets, I learned that *metacognition* brings awareness of my actions during both my learning and production processes. *Metacognition* is not only useful to assess, also it is a source of motivation and encouragement for constant learning.

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HOM 4 - Striving for Accuracy and Precision:

The fourth HOM identified in the EL Centro was *"Striving for accuracy and precision."* Costa (add correct citation) defines this habit as "the desire for craftsmanship, mastery, flawlessness, and economy of energy to produce exceptional results." People who practice this habit are proud of their work and take the time needed to check over it. It is a constant desire for truthfulness to avoid miscommunications and imperfection.

To produce the educational videos and booklets that clarified the purposes of chemotherapy in EOL, I had to encounter proper footage to tailor the ten videos. To re-edit the prior five English videos, the footage was shot a couple of years ago, so that I could not record new interviews. Sadly, all patients who participated in prior videos already passed away. Therefore, I carefully and precisely had to use the footage archived by DF to clarify the misconception that chemotherapy cures advanced cancer.

Likewise, every time I shot a patient or provider, I had to be precise and accurate with the camera and sound recording. I used my video craft-skills to avoid mistakes while I was shooting. For instance, if I made any video or sound recording mistake, I missed that opportunity to have that specific moment or emotion. Even if you ask the same question in an interview, the interviewer will not repeat the same words or emotions. As Heraclitus, the Greek philosopher, said: "No man ever steps in the same river twice, for it is not the same river and he is not the same man." Thus, if I missed a shot, it is a waste of a second that will never return. Accuracy and precision are a matter of planning and organization to get better outcomes and optimize resources.

HOM 5 - Finding Humor.

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The last HOM principle used and identified in the EL Centro videos and booklets was "*Finding Humor.*" As Costa et al. (2001) states, humor is one more of the unique dispositions that human beings have. Humor has positive effects on the human body and psychology. Laughter increases the dose of dopamine, a hormone, and neurotransmitter that regulates motivation, arousal, and cognitive processes (Baixauli, 2017). When dopamine levels increase in the brain and body, individuals experience pleasant sensations such as relaxation or happiness. Besides, people who use humor develop a capacity to recognize a situation in a much creative manner engaging and empathizing with others' points of view.

Because of the difficulty of the topic in the EL Centro videos, I wanted to display the best attitude while interviewing patients. One of my professional responsibilities and challenges directing the EL Centro videos was to create a kind and compassionate environment during interviews. As one can imagine, it is not easy for people to talk about their EO, especially when the time is short. Therefore, I wanted patients to enjoy the interview experience by creating a comfortable environment so that patients on the videos might transmit feelings such as kindness and compassion. Humor has the magic to connect cultures and soften hard topics.

To create a friendly and relaxing environment for patients, the EL Centro social worker and I met with the patient before the interview day. During the pre-video interviews, we followed Dr. Hunter Doherty "Patch" Adams strategy of practicing compassion, love, and humor break the ice between patients and us. (Adams, 2002) Additionally, we took advantage of our cultural similarities and differences to joke about them. For example, we talked several times about how the meanings of words change from one Latino country to another. Therefore, patients were more likely to feel relaxing and engaged with the social worker and myself during the interview.

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I knew from my prior experience as a TV producer that humor was prominent on the set to keep a pleasant work environment between the crew, actors, and participants, but finding humor as a habit during interviews was crucial for softening and smoothing the dialogue. Finally, we highlighted the importance of helping other patients' lives by sharing and teaching with the interviewees' experiences through the EL Centro videos.

CCT Principles After Working at the EL Centro

Finally, I developed a set of CCT principles to apply in health science video production. The following principles came about after using the HOM, which guided my work at the EL Centro. These principles helped me to make right decisions to precisely edit the footage from prior English and the new Spanish videos. The three principles for the EL Centro project are:

- Help audiences to understand complex and technical information is crucial to reduce disparities in health care.
- Audience misconceptions are key points to state at the beginning in any educational material.
- Do not expect to answer every patients' questions with one media format, use as many as you can.
- Reflect on the audience's learning needs to provide the right information for their decision-making.

Working as RA for UMass Boston and the DF/HCC was a great opportunity in my career as a TV producer, and more importantly while I was taking CCT courses. The parallel experience helped me to redirect my interests as an audiovisual producer and rediscover my talents as audiovisual artist. Also, it allowed me to apply the different CCT approaches in

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professional setting. As a result, I applied the Habits of Mind to analyze the prior English videos and develop the Spanish videos. and audiovisual creation and production.

Recommendations for AV Producers

The unique opportunity to work making videos in the EL Centro allowed me to explore self-direction and self-learning by practicing activities to raise productivity and self-awareness. As an EL Centro RA, I explored my critical thinking and my creativity using the following practices to improve focusing, planning, and organization, and look for an unusual connection.

This section suggests practices and principles to guide AV producers to engage in good thinking skills and to assess their creative process. Using the Habits of Mind (HOM) will help AV producers to enhance the quality of their thinking as well as their creative productivity. Finally, based on AV creators' needs, I want to discuss the general principles of HOM to be used in video production.

Critical Thinking Practices for AV Producers

Adding a new habit is not as simple as people think. It requires hard work, commitment, and a positive disposition. I used mapping, Pomodoro technique, and daily writing or journaling during my work as an RA in the EL Centro project to build new habits. Indeed, I still use all of them in my daily routine to address my personal and professional development. The following practices should be added in an AV producer's routines, so that it will be likely to make them habits.

Mapping

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Mapping helps to visualize the possible direction and narrow the scope of an idea or project (Taylor et al., 2012). After defining the issue related to the research or project and learning about what others had said or done, mapping allows the breaking down of the parts of a project, and thus, making it easier to see the overall project. An AV producer should use mind mapping to visualize ideas and visually connect their thoughts using a wide-angle lens. Mapping could be used as a visual diagram to organize and arrange the information. While drawing the map, the creator can quickly identify unusual connections, understand the topic structure, and its original pieces and components. It can be used for creative problem-solving, decision-making, project planning, brainstorming, and taking notes.

Mapping an idea or project involves three steps. First, define the general topic. Second, find out related issues that connect with the general topic and get feedback from peers. Third, narrow the subject until one is sure about the direction of the project. For instance, I used mapping in my project at Dana Farber Cancer Institute (DF) and my master's degree synthesis. First, I wrote down my primary concern as a CCT student and as AV producer (See Appendix B). Second, I wrote ideas and notes about my work as an RA and the EL Centro project. Also, I added topics related to filmmaking, science communications, and personal development. Finally, I shared my ideas extracted from the map with colleagues at DF, school, and former co-workers and asked for feedback.

Through this process, I was able to develop not only my videos and booklets for cancer patients but also the direction to focus my synthesis. Ultimately, mapping helped me to visualize what broad my concerns were and choose what direction I wanted my synthesis to take. As appendix B, C, D, and E shows, I mapped ideas, issues, questions, and projects around my major

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professional concerns. Therefore, it was easier to narrow both projects and define tasks and deadlines. See Appendix B, C, D, and E.

The Pomodoro Technique

The Pomodoro technique is a time management method created by Francesco Cirillo (Cirillo, 2009). The Pomodoro technique is helpful in staying focused on a single task for a specific period allowing one to not get distracted or procrastinate. The Pomodoro technique uses a timer to break down the task in intervals, usually twenty-five minutes that is followed for a short break – five to ten minutes. The twenty-five minutes periods should only be used to do the task avoiding any distraction. The Pomodoro technique helps people practice focusing while they build up mental strength and improves self-control and self-discipline.

If an AV creator struggles to manage time or get tasks done, the Pomodoro technique empowers them to control time and increase the accountability of their productivity. It is a useful practice to find a balance between the quality and quantity of time expended in a specific task or along with the project. For instance, I used the Pomodoro technique for writing. One of the most common practices in AV production is to transcribe video interviews to be more precise in the interview video editing process. The task of transcribing can be tedious and exhaustive; thus, using intervals of twenty-five minutes to transcribe the video interviews helped me to improve my typing productivity and avoid procrastination.

Some Pomodoro apps are available to download on computers and mobile devices to block distracting websites and online notifications. The most popular among the users of this technique are Forest, Focus To-Do: Pomodoro Timer & To-Do List, and Pomodoro Timer Pro, among others.

Journaling or Daily Writing

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Journaling or daily writing fifteen to thirty minutes each day is a practice that AV creators must adopt as a daily habit to develop critical thinking (Taylor, Peter J and Szteiter, 2012). The purpose of daily writing is to help AV creators to notice their thoughts, ideas, or potential projects. It is a space where the AV creator has the freedom to record their deepest thoughts, stories, or inspirational notes. The habit of writing everyday forces the creator's mind to slow down, have better organization, and be mindful of their cognitive process and behaviors. Journaling helps to prioritize concerns, problems, and thoughts, using words as a real representation of them. Every time an idea is writing down, the AV creator is instantly engaging to make it a reality.

There are a number of different methods for journaling or daily writing that an AV producer might utilize. To start journaling, schedule a time every day to write and have a reason to start writing – if it is difficult to take fifteen to twenty minutes at the beginning, a writer could start with five minutes and increase the time after they have mastered it. Some reasons to write about might be to:

- make sense of things that happened
- state future actions to take
- get ideas and thoughts out of the AV producer's head
- organize ideas and thoughts to share with others

For example, for the EL Centro, I kept a notebook where I tracked my daily task at Dana Farber and a To-Do list. I also wrote at the end of every day a short paragraph describing my achievements and what new things I learned that day.

Critical and Creative Principles for AV producers

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After the use of the practices described above, I developed a set of principles to guide AV producers to create videos that intend to communicate useful information for lay people. By definition, a principle is a proposition or value that guides a behavior or an evaluation. Namely, critical and creative thinking principles are propositions to guide an AV producer or creator to behave intelligently and effectively. These principles guide the AV producer to make a better decision in the video production process, as well as to spur and boost up their creativity as needed. My five general principles to become a good thinker across disciplines and to use as a starting point to develop AV content and AV producers' creativity are to:

- Focus on one thing at the time.
- Maintain an open mind during the creative process to learn new information.
- Gather, understand, analyze, and apply information that is going to be communicated in your videos using logical reasoning based on facts and truthful sources.
- Look for unusual connections and use your imagination during the video creation process.
- There are no right or wrong ways to work with creative processes, production skills, and/or video projects. We all have different learning and thinking processes.

Furthermore, these CCT principles apply in AV production might help to make the best judgment, whether it is on any AV production stage or an AV creator mindset. Based on my five critical thinking principles suggested above, I adapted the following five principles for AV producers:

- An AV producer should focus on one thing at the time, whether it is an idea, a video production stage, or during their creative process.

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- An AV producer should keep an open mind to facilitate their creative process and get the best results in their video production project.
- An AV producer should be rigorous using logical reasoning to gather, understand, analyze, and apply the information used in their video project content.
- An AV producer should continuously look for unusual connections, so that imagination and creativity spur.
- An AV producer must understand that there is no right or wrong way to tell a story to their audiences.

These critical thinking principles guide my behavior as an AV artist and AV producer. I am working every day to craft my mindset with these principles. My commitment is to use these principles as a template every time I am facing a new challenge. Finally, to practice the Habits of Mind in AV production, I create a list of fifty suggestions, ten for each habit; to be use as a guide or check points while working in a video project. The list was made using my RA journal notes as a reflective practice and my experience interviewing cancer patients for the EL Centro project. See Appendix F

In summary, practices and principles suggested in this section are the compilation of actions I took to make educational videos at the EL Centro. Using the HOM as baseline principles, I engaged with practices such as mapping, Pomodoro technique, and journaling to a be a mindful AV creator and increase productivity. Finally, I stated general principles to behave intelligently and effectively as AV producer, as well as suggesting principles to practice the five HOM used in the EL Centro videos and booklets – *Persisting, Listening to others with understanding and empathy, Thinking about our thinking or Metacognition, Striving for accuracy and precision, and Finding humor.*

Reflective Practice – How CCT Helped Me to become a Better Filmmaker

In the Critical and Creative Thinking program, students have a variety of courses that engage them to think, recognize, research, and find solutions to professional or/and personal concerns. All classes during the program were relevant to assess my personal life and my career as a television producer. However, the courses that scaffolded my job and my synthesis are Critical Thinking (CRCRTH 601), Metacognition (CRCRTH 655), and Epidemiological Thinking, and Popular Health (CRCRTH 653L). In this chapter, I want to honor the memory of my Professor Peter J. Taylor, and in public, express how grateful I am for his support, kindness, and encouragement to pursue my dreams to become an agent of social change.

The first course, Critical Thinking (CRCRTH 601) allowed me to explore the meaning of critical thought and become more aware of my values, attitudes, and core beliefs. I reflected on the sense of observing, interpreting, and reasoning. Thus, I was able to assess my valuing and judging system to think about my career background, as well as my ethical responsibility with the public.

Above and beyond, I learned that critical thinking is a skill; therefore, it is possible to increase it by practicing with persistence. I learned about my thinking and learning process, understanding the power of being present and focused while working or studying. As a result, I learned to enjoy the process of doing and creating rather than overthinking, over planning, or worrying about future project outcomes.

Although I was fearful of sharing my journal with my professor, I learned the value of daily writing to follow up on my thinking and writing process during the semester. Since then on, journaling has become an essential instrument to sort my ideas, thoughts, and feelings. Finally,

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although I was not sure how to connect audiovisual production and the Habits of Mind, I intuitively used the Habits to make the EL Centro videos and booklets.

The second course, Metacognition (CRCRTH 655) provided knowledge and understanding of how thinking about thinking influences my behavior. I learned about my cognition process and how its monitoring improved my performance as a grad student and AV producer. Also, I recognized that metacognitive strategies are essential to review what I know about AV production to enhance my future AV projects systematically. Metacognition helped me think about what else do I need to know to move forward in my career.

Likewise, this course guided me to search for metacognitive strategies to assess, analyze, and produce solutions for the EL Centro videos' production. I learned how to make questions to recognize problems and provide solutions. Besides, I was more mindful of how to question patients during interviews so that their answers would help our audience to understand the purpose of chemotherapy. Finally, metacognition should be used by AV producers seeking workflow improvement.

The third course, Epidemiological Thinking and Popular Health (CRCRTH 653L) introduced me to epidemiologic concepts, methods, and problems. I learned about how biology and diseases influence life course and how epidemiology should take place in public health policy decision-making to improve social inequality. Using a course project about the correlation of high fructose syrup and diabetes, I learned about statistical thinking, how to read a research paper and the scientific method.

In principle, I took this class to have a better understanding of epidemiological thinking. I thought that taking this course would help me to perform better in my job as RA at Dana Farber

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Cancer Institute. Without a doubt, the CRCRTH 653L course was tremendously relevant to me to better understand what RTC's are and why they are essential for patients and providers.

Moving forward as AV Producer

The Critical and Creative Thinking program shifted my career and personal life. In the beginning, I wanted to learn how to be a good critical thinker and learn about creativity. Then, I tried to use the videos as an educational tool and look for approaches to enhance video production by applying the Habits of Mind to the EL Centro project. Finally, I wrote my synthesis using my experiences as RA making a case study with the application of five habits in the development of the EL Centro videos and booklets.

After writing my synthesis and finishing my degree, I am looking forward to applying the Habits of Mind in my career. I am already working on my next project, which is the creation of my brand as an AV creator using YouTube, Instagram, and Facebook. The aim is to follow up on my progress as an AV producer while applying the Habits by posting online regularly. My project is under development, so I am looking forward to investing more hours a week after finishing my degree.

Conclusion

This synthesis project addresses question **What Critical and Creative Thinking practices and principles apply to improve audiovisual productions that intended to communicate complicated health information?** As this paper suggest the Habits of Mind (HOM) is a Critical Thinking tool that AV creators and producers could use to improve AV production. Using my experience working as a RA at the University of Massachusetts Boston and Dana Farber Cancer Institute/Harvard Cancer Center as a case study, I identified and applied five of the sixteen Habits of Mind developed by Costa and Kallick. *Persisting, Listening to*

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others with understanding and empathy, Thinking about thinking or Metacognition, Striving for accuracy and precision, and Finding humor might help other AV producers and creators to be mindful of their creative process, AV content, and AV production.

Additionally, this paper suggests practices for AV creators to explore their creative process. Although the practices suggested in this paper are broad, the AV creators might judge their uses and applications depending on their professional needs. As a result, , AV creators would solidify their own critical and creative thinking principles to move their careers forward.

The Habits of Mind are a set of attitudes that I will carry in my profession. It is my interest to follow up my personal experience applying the sixteen habits. To do so, I am working on a new personal project to develop and create a YouTube channel in conjunction with social media. Online videos and photographs will tell my personal story and creative progresses and posted online regularly. Now, I am developing the story structure and creating a list of videos. Also, I am brainstorming videos script outline and its footage.

To apply the Habits of Mind to move forward in my career, I will *persist by* working on my YouTube channel everyday regardless of life's daily challenges. I will *Manage impulsivity* every time I want to give up while practicing a new skill or physical training. I will *Listen to others with understanding and empathy* to learn from every person and treat them with respect and honor. I will practice *Thinking flexibility or lateral thinking* to look for new perspectives anytime that I need to challenge myself. I will use *Metacognition* to assess my learning, production protocol, and creative practices. I will *Strive for accuracy and precision* to produce audiovisual content with ethics and purpose. I will use *Questioning and posing problems* to find audiovisual topics that are interesting and address some sort of social or environmental issue.

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Besides, I will *Apply past knowledge to new situations* to avoid repeating past mistakes. I will make educational videos delivering trustful information *Communicating with clarity and precision* to my future audience. I will *Gather data through all senses* by looking around me to create AV content based on my audience's interests and needs. I will use my creativity for *Creating, imagining, and innovating* every time I have the opportunity. I will *Respond with wonderment and awe* of new ideas and people's perspectives to enrich my open mind and creativity. I will *Take responsible for risks* when it looks like it is time to move on. I will be *Find Humor* to laugh about myself and my mistakes and learn from them. I will *Think interdependently* to find my voice and talents as an AV creator and producer. I will *Learn continuously* so that I can be the best version of myself as an artist and human being.

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University of Massachusetts Boston – Dana-Farber/Harvard Cancer Center
U54 Cancer Research Partnership

EL CENTRO: Engaging Latinos in the Center of Cancer Treatment Options

Paula Avila*, Dr. Ana Lindsay*, Athalia L. Lopez*, Keysha Miralida*, Dr. Deborah Schrag**, Dr. Andrea Enzinger**, Christine Cronin**
* University of Massachusetts Boston ** Dana-Farber Cancer Institute

Methods/Materials:

Systematic Lit Review and cognitive interviews

Develop suite of chemotherapy educational videos and booklets

Randomized Control Trial (RCT)

Background:

Patients with advance incurable cancer need effective communications means to help them in their understanding of prognosis and treatment options. Unfortunately, the quality of patient-provider communication is sub optimal for ethnic minorities with advance cancer (1), particularly Latinos. Latinos are the largest minority group in the US,; however, cultural and idiomatic barriers limit their communications with health providers. For instance, nearly 40 % of Latinos have limited English communications proficiency (2) and 60 % have low health-literacy (2). These barriers compromise Latino's ability to understand important information about cancer, providers-care services, and medical treatment options.

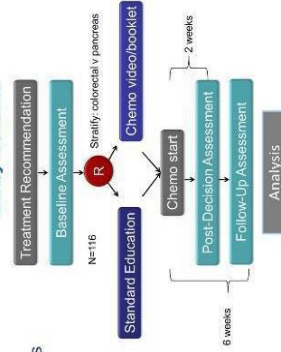
Hypothesis:

We anticipated that high-quality information with cultural nuances, such as language would improve communications outcomes like treatment understanding, communications satisfaction, and the patient-physician relationship. Our hypothesis is that developing communications means with cultural focus may translate into downstream improvements in health-care services for Latinos and other minorities in the future.



Qualitative research
Literature review: communication & information needs/preferences of Latinos regarding advanced cancer, chemotherapy, & prognosis
• Focus groups: Characterize communication experiences & needs of Latino adv cancer patients & CG's regarding diagnosis, chemotherapy, & prognosis
• Cognitive interviews: have target audience (Latino patients) review & critique existing intervention.

Study Scheme



Intervention Development



Sample Video: www.chemovideo.org

1. Revise English-language tools: booklets & videos
 2. Editing new interviews
 3. Develop Spanish-language tools: booklets & videos
- Translation of booklets & video scripts using cross-cultural adaptation (review by native Spanish speaker from Ecuador, Colombia, Honduras, República Dominicana y España.
 - Patients Scouting
 - Patient's filming: We filmed patients at DFCI, DFCI Lawrence, Moffitt Cancer Center and Boston Medical Center.
 - Medical team: 2 doctors,, 2 social workers, 1 nurse,
 - Editing script writing
 - Postproduction /First draft revision
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Intervention adaptation
• Key informant interviews (stakeholder engagement)
• Analyze/synthesize findings of focus groups, lit review, cognitive & key informant interviews to inform adaptation process
• Revise English-language tools: booklets & videos
• Develop Spanish-language tools: booklets & videos

Current Progress:

- Booklets in Spanish first draft for printing
- Filming done: Total: 11 patients, 2 doctors, 2 social workers, and one nurse.
- 10 videos in Spanish about the following treatment option: FOLFOX, FOLFIRI, FOLFIRINOX, GEMCITABINE, and GEMCITABINE + NAB-PACLITAXEL,

Results/Conclusions:

- This is an ongoing study.
All findings are preliminary:*
- Novel intervention targeted to needs of Latinos
 - Qualitative understanding of regarding Latino patient/caregiver communication needs
 - Publications and several manuscripts from RCT

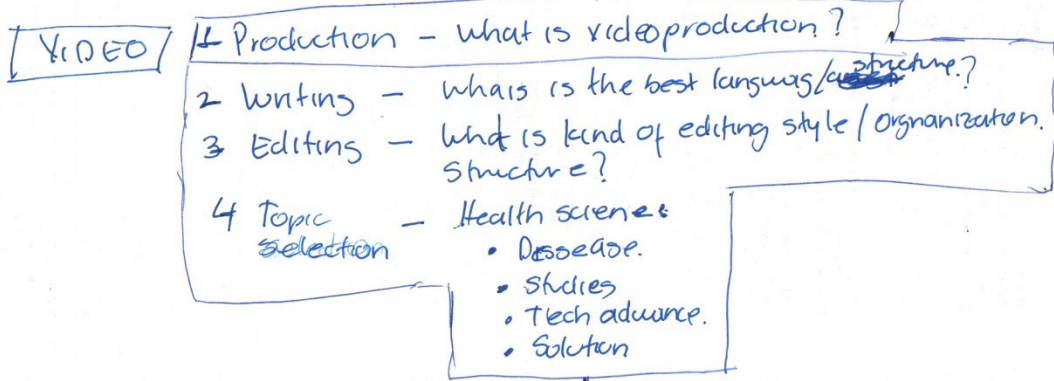
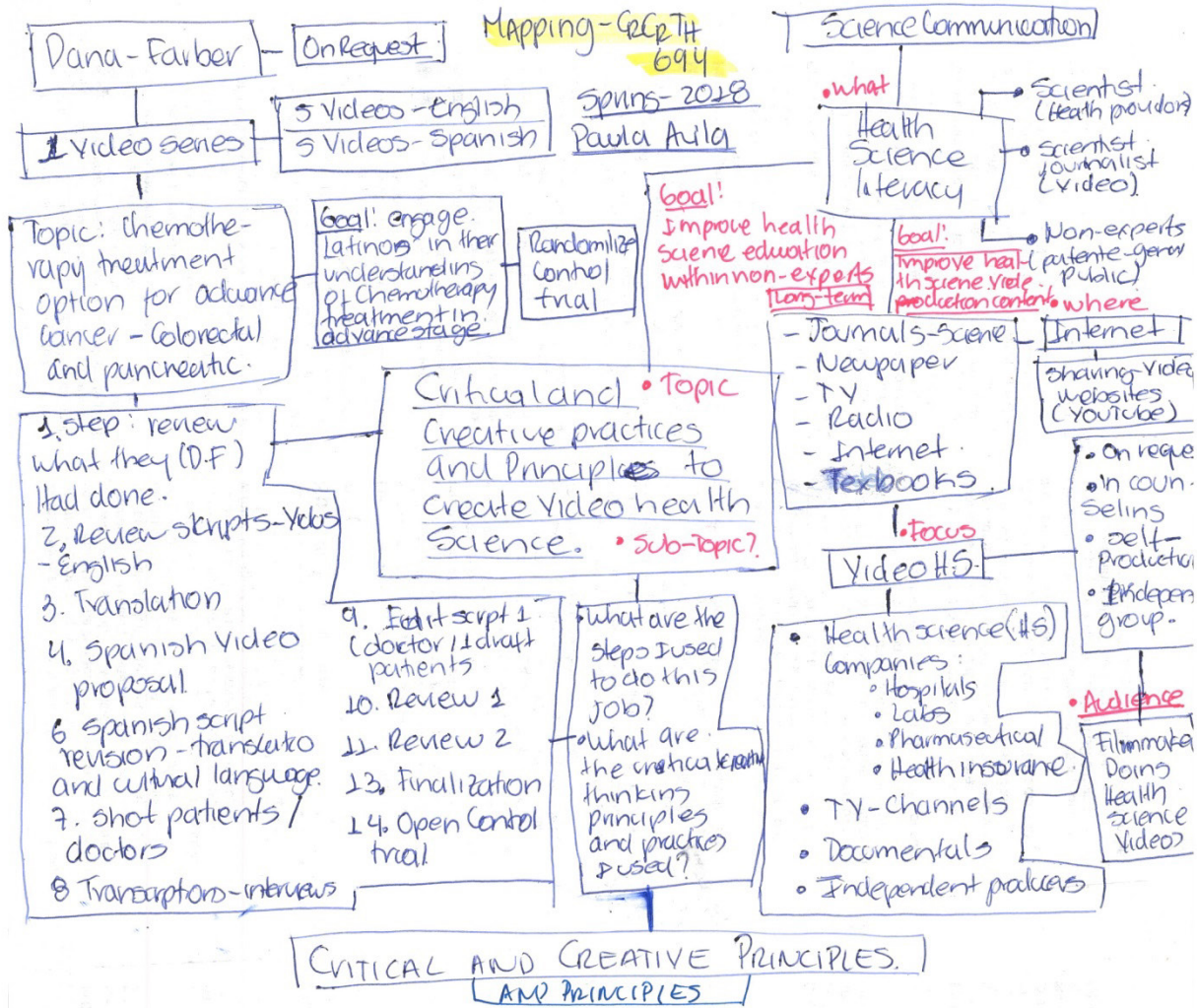
Future Work:

- Future funding: apply to NCI/AHRQ/PCOR or ACS to extend intervention to other cancers, or dissemination implementation research
- New avenues of investigation for UMB & DF/HCC researchers.

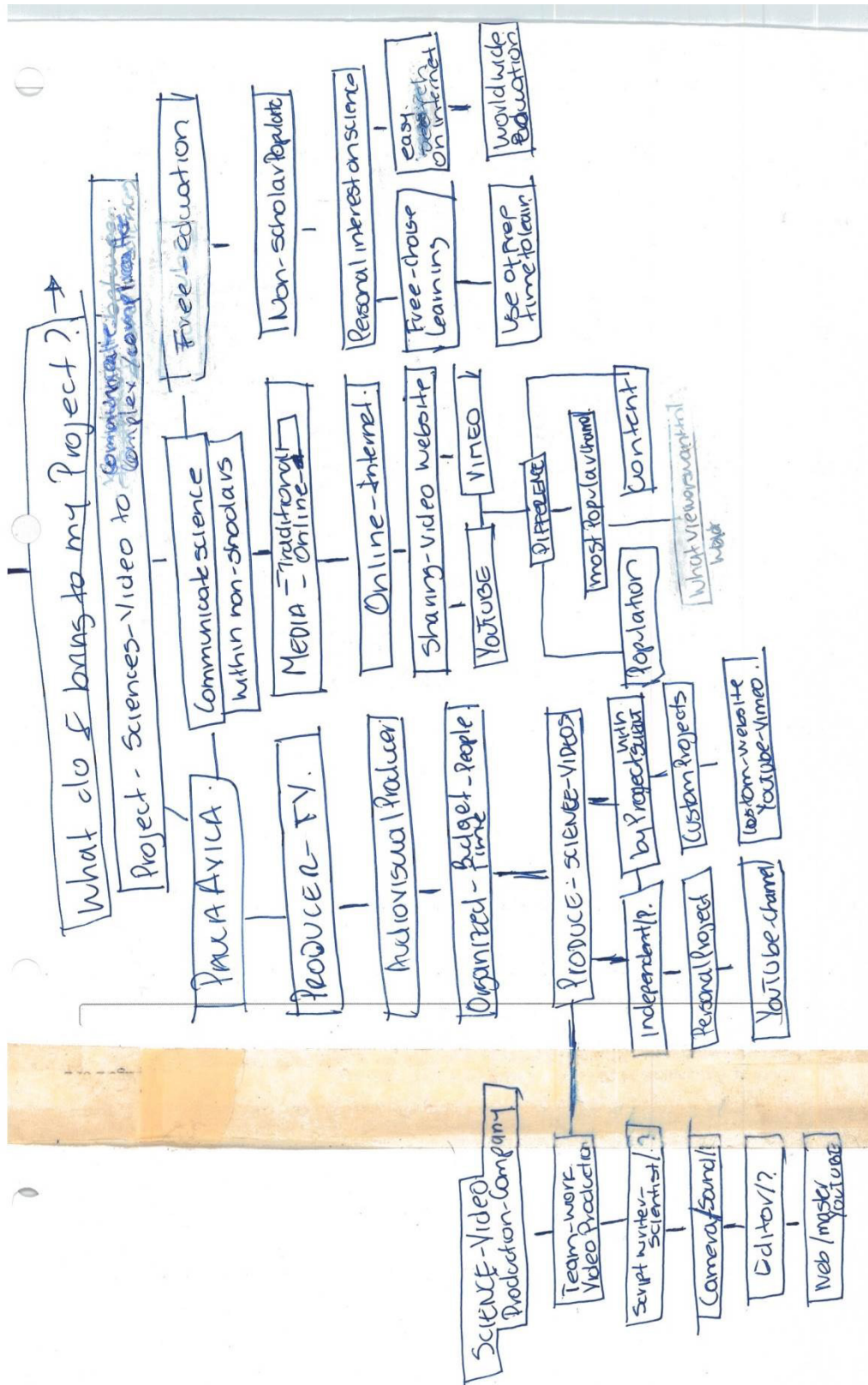
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APPENDIX B



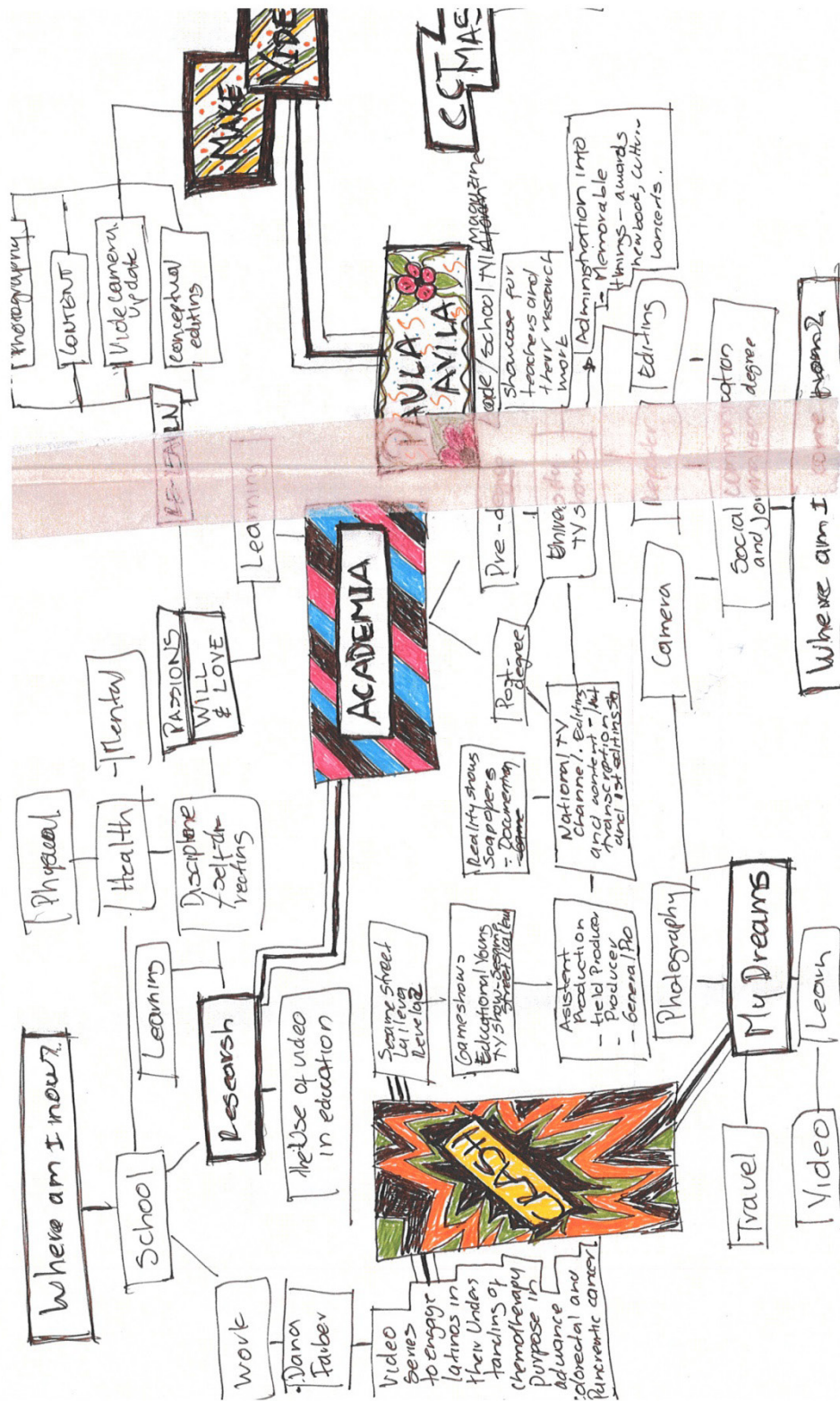
• Production - Principles - Critical thinking -



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APPENDIX D

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APPENDIX E



APPENDIX F

Guide to Practice the Habits of Mind within AV production

Persisting:

An AV creator who exhibits the habit of persisting sticks with a project or task until it is finished despite the difficulties.

1. Persistence is key to success. Learning and practicing a new skill, whether it is in AV production or your personal life requires persistence.
2. Inspiration does not always come as a muse. Yes, it is frustrating, but it is what it is. Stay persistent and hang in there. Think about the satisfaction you will have when you start to produce your project.
3. To stay focused and motivated, set yourself small, short-term goals. It will help you to the end of to a bigger project in a much more straightforward way.
4. Using a timer while practicing a new skill is necessary so that you don't lose the sense of time and forget your priorities.
5. Treat yourself every time you achieve a goal or finish a project. Celebrate your triumphs as you would celebrate other successes, even if they are small.
6. Choose one weakness you want to work on. Then find a strategy to overcome it and practice, practice, practice until it turns in a new strength.
7. The research of a new project can be slow, frustrating, and repetitive; just accept it and keep working on it.
8. Pitch your projects whenever you can, even to your family or closest friends. Although it might be terrifying and you might feel you are never ready to do it, practicing your pitch will build up confidence in you.

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9. Do not be afraid to fail. Every time you fail, it is an opportunity to learn.
10. Use video-sharing websites; they are the AV creators' friends. There are millions of online opportunities for AV creators to share their work and projects, and millions of people who are waiting for them.

Listening to others with Understanding and Empathy

To exhibit the habit of listening and empathy, an AV creator should carefully listen to and understand what others are saying. They should have a good understanding of their crew and audience. Hold thoughts at a distance to respect another person's point of view and feelings.

1. Talking with your interviewee while you are taking notes or making signs to your assistant is disrespectful. Make eye contact and face the speaker to give them the acknowledgement that they deserve.
2. Screen out mental and physical distractions. Practice being present while you have a dialogue that will honor your speaker.
3. Open your mind and avoid judging others to avoid personal or cultural bias from stopping you from experiencing the speaker's understanding.
4. Listen carefully to what the speaker is saying, and try to picture their world
5. Look and learn. Keep your eyes open to learning from others. You will never be wise, qualified, or too old for learning.
6. Do not interrupt when your speaker is talking. Wait for a pause if you want to say something.
7. If your speaker is talking about a problem, refrain yourself from giving and advice. If your speaker did not ask for an opinion, just keep quiet and listen.

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8. To experience empathy in dialogue, give proof that you understand where your speaker is coming from.
9. Find and get a mentor who you feel comfortable and trust to share your ideas or projects. A mentor has more experience than you and will help you in your creative journey.
10. Do not be scared of your pre-production and production meetings. It is an excellent opportunity to discuss, improve, and troubleshoot your projects. You will always learn something new from your team.

Thinking about our thinking or Metacognition

Know your knowledge. An AV producer must use Metacognition to plan for, reflect on, and evaluate the quality of outcomes, as well as their creative and production process.

1. Creating and producing audiovisual work is hard, so find a support system that will help you to overcome difficulties.
2. Embrace failure. You will experience it multiple times in your professional and personal journey.
3. Producing an AV project always will take longer than you expect. Much longer. So, plan accordingly
4. Play to your strengths. If you are good at writing, keep practicing. If you are good at operating a camera, keep practicing. If you are good at editing, keep practicing. If you do not know what you are good at, then start practicing something you may like or enjoy.
5. Use a notebook. Your memory is not as good as you think.
6. Do not compare yourself with other AV creators. Everyone's creative journey is different, so focus on yourself and your path. Too much comparison brings high expectations and unnecessary stress.

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7. Keep your footage neat and organized to keep you and your editor sane.
8. Plan your meetings with your AV production team with time. Have a list of points you want to discuss with each department/person so that you do not forget an idea as soon as you step into the meeting room.
9. Plan, plan, plan your interviews, your pre-production research, shooting day, script, etc. Having a clear plan will help you to work smoothly and solve any challenge or difficulty.
10. Share your AV project. It does not have to be a project proposal, go to colleagues, peers, or your creative team, and share your work. More people than you think are interested in your ideas and are willing to give you advice if you ask for it.

Striving for accuracy and precision

An AV producer who exhibits this habit should check for errors; measure at least twice; Nurture a desire for exactness, fidelity & craftsmanship.

1. Make the most of your interviewee's time. They may not always be around, so be sure you ask the questions and shoot the footage you need when you are with them. You will regret it while editing if you did not.
2. Always write down your production and directing ideas and details. It is a MUST as I promise you will forget most of the specifics and tasks to do.
3. Watch your raw material and transcribe your interviews. You cannot go to post-production without knowing your footage, and reading what your characters said on camera
4. Back up everything. I do not mean in a little flash drive or your computer. I mean, get a 1TB or 2TB drive to put everything on. Also, put everything that you can on the cloud. If

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the office or computer burns down, you will be thankful you saved your project elsewhere

5. Keep a field notebook and then transfer the information to your production notebook or journal immediately afterward. Quick notes or scribbles will not make sense a few hours, days, or weeks later.
6. Multitaskers do not focus on one thing at the time. It is better to get on thing done than never finish tons of them.
7. Make questions simple in an interview and let your interviewee clarify complex and complicated ideas. They will. I swear.
8. Keep stocked up your video equipment (SD cards, batteries, connectors, etc.) before you run out of your supplies in the middle of the desert, and you cannot shoot that beautiful landscape.
9. Write everything down, from what you need prior to the shoot and on shooting day. Plan for everything you feel that may go wrong and always have a backup plan in the mind.
10. Keep your workspace clean and organized. It will help you to keep focused and relaxed.

Finding Humor

An AV creator who uses this habit daily is willing to laugh appropriately, look for the whimsical, absurd, ironic, and unexpected in life.

1. Laughter is the best medicine for stress and increased creativity. Producing a project is exhausting and demands a lot of responsibility. So, finding ways to get some amusement is crucial for your mental health, creativity, and productivity.
2. Do not be hard on yourself. Learn to laugh at yourself. Even if you do not feel like a funny person, you can laugh about yourself.

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3. Lighten up and do not take yourself too seriously when things do not go in the direction you planned. Use those moments to laugh. You will find solutions quicker or at least release your stress hormone.
4. Take part in activities outside of your office and with different people than your creative team. Get your name out and look for people to share funny stories about your day.
5. Reward yourself with something that makes you happy. Knowing that you have a reward waiting for you will help to get projects and things done.
6. The wheel is already invented. You just need to paint it with creativity.
7. Empathizing with your characters is vital for a good interview. Try to share a funny real-life story related to the topic.
8. Be careful with jokes. If you are not close with your speaker, it may look awkward and unprofessional.
9. Use humor as a tool to create a picture of yourself, show an example, or make a point. All those ways are polite and respectful.
10. Please, if you are not a funny person, do not force it. The interviewee might feel awkward and it may interfere with the interview outcome.

XA:

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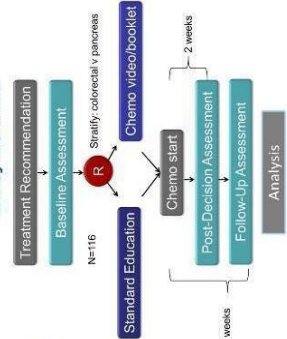
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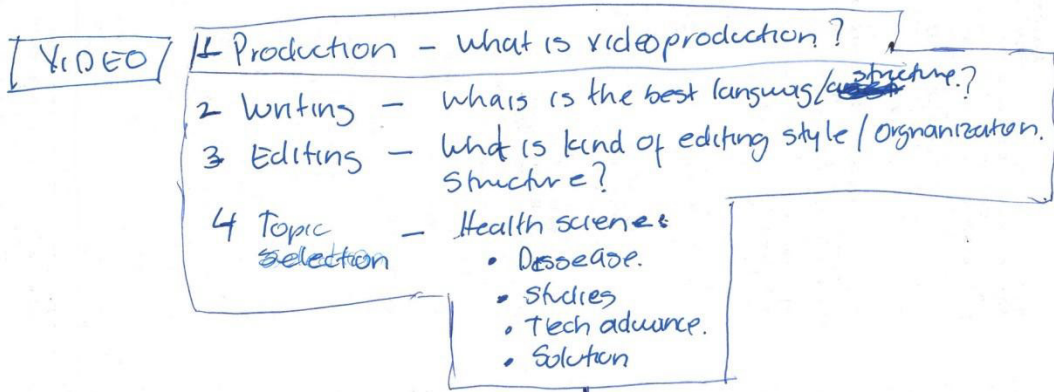
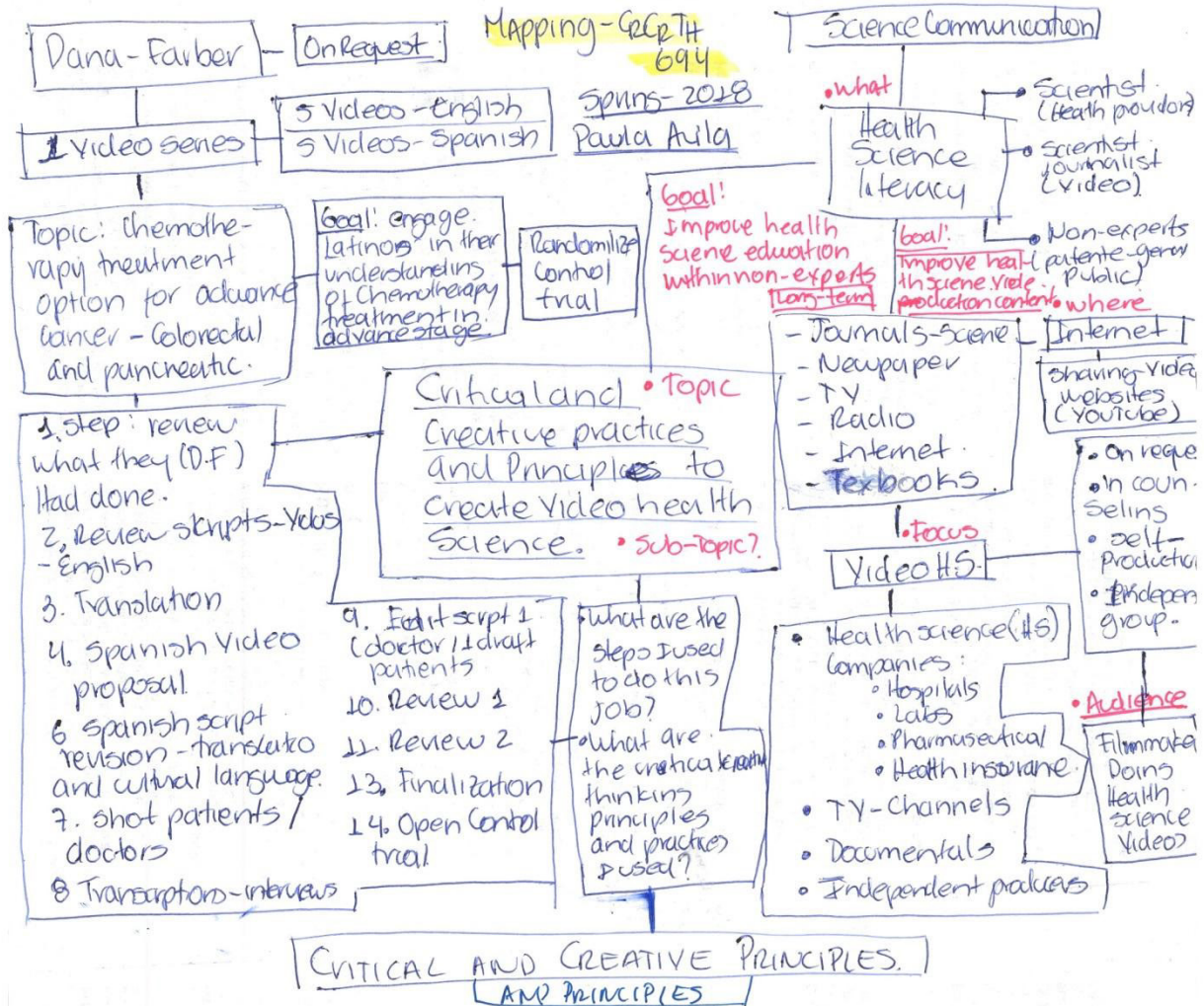
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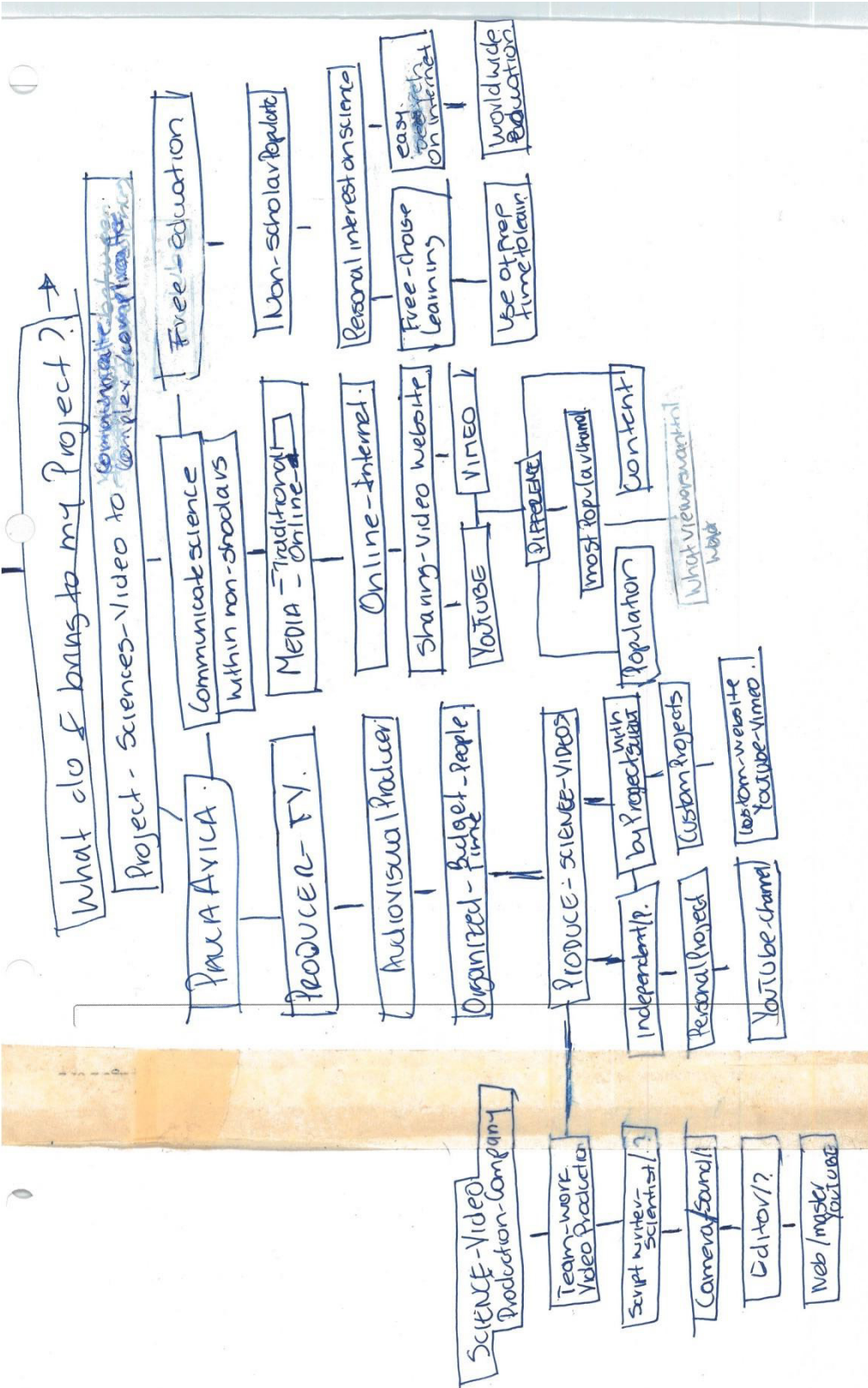
APPENDIX B:



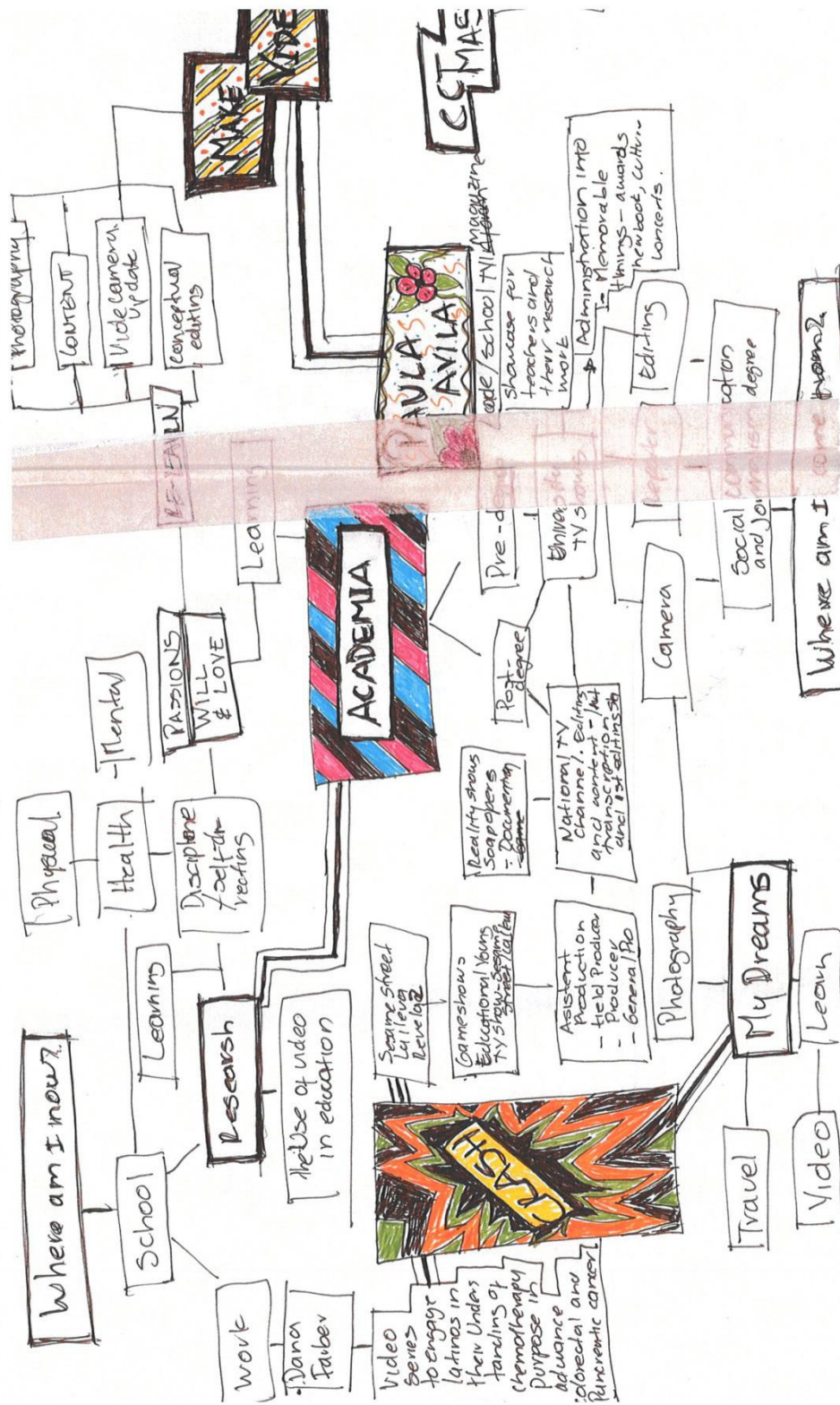
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APPENDIX C:



APPENDIX D:



APPENDIX E



Omnis dicant laboramus mea cu. Habeo neglegentur et eam. Est te mundi intellegam, sea libris omnium te, tantas regione dissentias in est. Te eius equidem vel, qui id esse imperdiet definiebas, eum atqui summo labore no. Vis viderer facilis interesset et, nam probo equidem definitionem ex. Eam ea posse erant zril, velit option no quo. In sumo ubique est, te eos zril iracundia. In everti tacimates nam.