

12-5-2022

How can Design Thinking Be a Tool for Inspiring Creativity Among Adult Learners

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How can Design Thinking be a Tool for Inspiring Creativity
among Adult Learners in Higher Education

Nicole Brower

A Project Submitted to the Graduate Faculty of

GRAND VALLEY STATE UNIVERSITY

In

Partial Fulfillment of the Requirements

For the Degree of

Master of Arts in Social Innovation

School of Community Leadership and Development

December 2022



The signatures of the individuals below indicate that they have read and approved the project of Nicole Brower in partial fulfillment of the requirements for the degree of Master of Arts in Social Innovation.

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Introduction & Purpose

The three Cs for success in the workplace are the skills of communication, creativity, and critical thinking. These are known as soft skills. “Soft skills are non-technical, applied skills that employees are expected to possess and are oftentimes difficult to measure” (Stewart, 277). They are skills that people use by “doing them” (277) and are “deemed essential for professional success” (277). It does not take long to find corroborative research. “To become a stellar employee or an admired leader requires an arsenal of skills that are hard to measure but critical to success” (Rockwood, 72). Rockwood goes on to list in order of priority as reported by an employer survey the three C’s in almost equal importance. Both authors agree that the skills are hard to measure, but this unquantifiable nature is not properly reflective of the importance, it is, however reflective in the enigmatic teaching methods of soft skills. Instructors within higher education can be committed and prepared for this enigmatic teaching. Universities have made the preparation of students for workforce success a priority. This commitment extends to the soft skills as mentioned. This preparation is often integrated throughout a curriculum, specifically within a university that values a liberal education. AAC&U is a global organization “dedicated to advancing the democratic purpose of higher education by promoting equity, innovation, and excellence in liberal education” (American Association of Colleges and Universities, 2022). AAC&U offers resources, events, initiatives, and training for its vast number of member institutions across the country and the world. They recognize that universities each have their own mission, vision, and culture, but that they each are committed to promoting innovation in teaching and learning and promoting teaching the methodologies of innovation within the classroom. This commitment of AAC&U corroborates the importance of a commitment to innovation in both teaching and methodologies and as content.

Research Question

The research will set out to uncover theories around creativity learning as well as reflect on the more concrete methods and theories of adult learners within higher education settings. The research will aim to answer the question: How can design thinking be a tool for inspiring creativity among adult learners in a setting of higher education?

Literature Review

Creativity teaching theories are enigmatic. This lies in part due to the fuzzy edges of defining creativity. Keith Simonton (2012) defines creativity through the lens of psychology as a “psychological phenomenon where someone comes up with an idea or product that is simultaneously novel and useful” (p.217). Another author defines creativity in a more philosophical lens as “changing one’s personal domain (pattern of behavior) such that one’s field (the world or environment with which one interacts) recognizes this change through a more favorable interaction, an interaction where one is better able to achieve the results one desires” (Lones, 2021, p.10). This definition is limited to creative problem solving rather than creative artistic pursuits. The author goes on to note that creativity is driven by a creative tension “created by the difference between personal vision and current reality” (p.10). This tension of definition can be calmed by the notion of domain specificity. “Domain specificity argues that the skills and other factors leading to creative performance vary across domains” (Baer,2011, p.73). One of those “other factors” is a specific definition as well as clearly outlined theories of teaching.

Although the definition and learning theories may not be clearly defined, there are spaces of overlap regarding best practices across disciplines. One clear and agreed-upon avenue of creative learning lies in reflection. “Action coupled with reflection provides the most robust form of learning” (Liedtka, 2021, p.119). Lones, in discussing learning using a creativity model

agrees. “I believe the key is developing some sort of reflective practice as part of our learning” (p.11). Other authors encourage reflection within a space of stillness. “Daydreaming leads to wonder...wonder requires a space of doing nothing (Nixon, 2020, p.26). More clearly, Nixon clarifies doing nothing as a pause, the giving of permission to reflect” (p.26). “Cognitive psychologists are most interested in the mental processor or mechanisms involved in creative thought. An especially intriguing finding is that creativity is strongly associated with defocused attention, cognitive disinhibitions, or what researchers technically refer to as reduced latent inhibition” (Simonton, 2012, p.217).

On the other side of the art of doing nothing is the shared theory that creativity is risky. “Creativity requires a creator to generate ideas without knowing which ideas will eventually prove useful. Creativity is inherently risky and wasteful” (Simonton, 2012, p.219). This is a line of thinking that runs in alignment with other authors. “Wonder likes to test out new ways of being and doing, rebounding off constraints of current knowledge. The only way to make a creative leap in the first place is by starting with wonder” (Nixon, 2020, p.30). Another author agrees while discussing creativity as investigation. “Investigative doubt is not for the faint of heart...We love knowing we are right and hate risking being wrong: trading in the comfortable allure of certainty for the emotional costs of living in the uncertainty” (Liedtka, 2021, p.116).

One way in which authors agree that can move learners away from the “comfortable allure of certainty” is divergent thinking. “The most widely taught creative thinking skill is divergent thinking” (Baer, 2011, p79). Other authors agree, but with more specificity. Simonton refers to the creative process step of “incubation” (p.219) He refers to this as a time of idea generation and growth. Lones refers to the creative learning process as “framing and reframing problems...in order to envision ...and then on to expression” (p.11).

My personal favorite theory of learning or teaching creativity ties together some of the themes in the idea of play. “When we play the brain is learning how to learn” (Nixon, 2020, p.17). In his book entitled, *Play: How it shapes the brain, opens the imagination, and invigorates the soul*, Stuart Brown defines play as “an absorbing, apparently purposeless activity that provides enjoyment and a suspension of self-consciousness and sense of time” (p.60). In this definition, you can see the themes of reflection (doing nothing) and risk (absorbing, apparently purposeless). In addition, the very nature of play to grow from nothingness into something enjoyable reflects divergent thinking in action.

For this research, I will use the core adult learning principles as outlined in the *Andragogy in Practice Model* (Knowles, 2005, p149). In addition, *The Twelve Principles for Effective Adult Learning* are outlined by author Jane Vella (2002). There are several spaces of commonality in these theories. The first is the nature of self-directed learning. Knowles references autonomy and the self-directed nature of the learner as a core principle and Vella references addressing the learner as a designer in their education. Vella also ties this autonomy in with considering the prior experience of the learner. Knowles addresses the personal payoff and intrinsic value of learning as motivation for the learner in another principle and Vella ties into this while considering addressing learners as subjects of their own learning and recognizing their ability to make decisions related to their learning. A space of difference is that Vella’s principles consider the emotional aspect of learning while addressing listening, creating safe spaces, fostering communication and teamwork along with the idea of ideas-feeling-skills in what she references as learning with ideas, feelings, and action. Vella also highlights action with reflection, whereas Knowles’s principles do not mention reflection as an area of consideration.

When I returned to university education in 2011, I had a singular purpose for my education – get a job. The economic downturn a few years earlier paired with no bachelor’s degree left me with fewer options than I wanted (or thought I had earned). The financial strain of underemployment paired with paying for tuition was a stressor I was willing to undertake provided the value of graduation paid off (quite literally). “Responsibility is the cornerstone of adult motivation (in learning) ... This deep social value for responsibility is why competence – being effective at what one values – looms so large and so consistently as a force for learning among adults” (Wlodkowski, 2008, p.82). I found myself nodding my head in agreement as I read this statement and considered my own initial motivation. “The usefulness of what is learned generally is a greater influence on adults’ motivation to learn than its intellectual value” (Wlodkowski, 2008, p.83). These statements align with Knowles’s noted motivation of “personal payoff” (149).

How then can the creativity practices of reflection (doing nothing), risk, and play be seen as valuable learning for an adult learner? And how can these practices be introduced in a way that an adult learner will embrace as useful?

Is design thinking a quick and easy answer to teaching creativity to adult learners, certainly, no. However, is there a space to recognize the unique needs of both teaching creativity and teaching adult learners in which design thinking might be a useful tool. To review this idea, we need to understand more about teaching dt along with some of the stages, stops, and standout spaces. Author and researcher Danielle Lake (2021) echoes this sentiment in the conclusion of her own research with “In general, design thinking, as a curricular strategy, should not be characterized as a quick and easy pedagogical technique that will yield immediate improvements in learning processes and products. Instead, it should be recognized as a flexible

method and process for developing the capacities to accept critical feedback, cope with ambiguity, and develop the trust necessary for inclusive and equitable risk-taking” (p.352). It does not take long to start to see the echo of best practices of teaching creativity in the “flexible method” of design thinking. Additionally, some of Vella’s principles are reflected including those of teamwork, trust-building, engagement, and accountability.

Design thinking is an “exploratory process” and there is no “one best way” to move through the process (Brown, 2009, p.8). “There are useful starting points and helpful landmarks along the way, but the continuum of innovation is best thought of as a system of overlapping spaces rather than a sequence of orderly steps. We can think of them as inspiration... ideation... implementation” (Brown, 2009, p.8). Design thinking is also a social process where the community of sharing shapes ideas. The motto of Design thinking’s IDEO is “all of us are smarter than any of us” (Brown, 2009, p.26). Design thinking is often seen as a process to benefit products, but it does not end there. “Design thinking has its origins in the training and the professional practice of designers, but these are principles that can be practiced by everyone and extended to every field of activity” (Brown, 2009, p.28).

Goals & Objectives

The goal of this research will be to discover if design thinking can be an effective teaching tool in the development of creativity in adult students. Effectivity will be determined by multiple factors from the perspective of both instructors and learners. Impressions are a large part of determining effectivity but are hard to measure with specificity. However, instructors in higher education who utilize design thinking in their teaching, have knowledge of the subject matter, the concept of creativity, and the learning of adult students to make their impressions worthy of measure. Additionally, adult students’ impression will be measured by their

impression of value along with their response to the lasting nature of design thinking to extend as a useful tool beyond the classroom as an inspiration for creative venture.

Study Design & Methodology

This study is a qualitative method research project with thematic analysis using a survey as the means of delivery. A survey is easy to develop, administer, and complete. I hope this will make the best use of my own time as well as the time of the instructors and students from whom their time and experience will be requested. “Surveys are used to gather information from a predefined group of respondents... Various types of surveys or polls can be used to explore opinions, trends, etc. With the advancement in technology, surveys can now be sent online and can be quite easy to access. (Basson, D. ,2008, Questionnaire). While surveys can be a favorable means of data collection in both quantitative and qualitative data collection, the nature of this survey as one that measures definitions, experiences, and impressions results in primarily qualitative data.

The survey will be designed with a mix of open-ended and closed questions. The Encyclopedia of survey research methods, 2008, lists “Clarifying Terminology” as one reason for open-ended questions: “Asking respondents to define a keyword in a question documents their level of understanding. It can also inform the variation in the meanings of words used among the respondents who gave an answer” (Ballou, 2008, Open-Ended Question). As one of the goals of the research will be to understand the instructor’s and student’s understanding of creativity, clarifying that term is necessary.

One of the impacts of asking open-ended questions is the resulting data, specifically the variation a researcher might have to wade through and the possibility that the researched own

understanding of words may cause the research to skew. To avoid this skew, methodical coding is necessary. “Coding verbatim responses is necessary with open-ended questions. While one of the main advantages of using an open-ended structure is getting specific, individual information, the lists of verbatim answers need to be organized to be useful for data analysis and reports... The quality of open-ended data is diminished when careful attention is not given to code development.” (Ballou, 2008, Open-Ended Question)

Data analysis will begin with coding. “A code is a label that describes the content and can be used to derive themes and patterns.” (Lavarkas, 2008, Content analysis). The coding will be done according to an inductive method which is common in the investigation of ideas and concepts. Inductive coding allows the codes to emerge from the data. From the coded data themes will be identified and articulated to draw meaning from the impressions of the data set. This identification of themes follows the pattern of thematic analysis.

Fugard and Potts (2019) refer to thematic analysis as a “sense-making exercise” (Thematic Analysis). It sounds simple. But as soon as you crack open the first question “what is a theme,” a researcher can sense the simplicity slipping away. That first question leads to another “Does a theme exist in the data, waiting to be discovered? (Fugard & Potts, 2019, Thematic Analysis). Thematic analysis can be (will be) influenced by the researcher. I am not sure there is purity in thematic analysis, but I do think there is value.

Different people can have different ideas of what constitutes a theme or what themes are important. what exactly emerges may depend on the person performing the analysis and whatever influences, not necessarily articulated, they have had. If a researcher is collecting the data, they can control the question asked. “Thematic analysis involves creating themes and coding the data with respect to those themes. The former entails constructing themes using the data plus the researcher’s

understanding, intuition, and theory. It is a process of making sense of the data and abstracting broader ideas than the explicit words on the paper. Thematic analysis involves drawing connections at a deeper level, where two fragments of text using different words can be seen to be related at the level of meaning or a common phenomenon. The analysis is a creative process” (Fugard & Potts, 2019, Thematic Analysis). If this research journey has taught me anything, it is that creativity is messy and obscure, but that should not in any way distract or re-direct. It is in the uncomfortable messy spaces where the potential lies.

This potential within thematic analysis of survey research holds another benefit. That is, the possibility of inspiring future research. A survey designed for qualitative research gathers impressions, ideas, and potential connections. These open-ended areas can lead a researcher down paths they may not have expected. By leaving the survey questions open-ended, the results can be unpredictable. As a researcher, I welcome the possibility of the unexpected.

Data Collection

Data will be collected in two sets and all participants will be selected through open invitation. The first data set will be collected by survey with instructors who use design thinking as a tool of instruction within a higher education setting. Appendix A outlines the set of survey questions.

The second set of questions (Appendix B) is designed for students who have encountered design thinking as a tool of instruction within a higher education setting. These questions will be offered to non-traditional students. For this research, a non-traditional (adult) student is defined as a student who has returned to a higher education institution following two or more years of time away from formal learning. The student set of questions will be administered using survey software (Qualtrics).

This collection method not only respects time but better allows for perceptively negative answers (should there be any). In the case of in-person or virtual interviews, a student may not be as free to share with the same level of candor.

Data collected from surveys will be protected by Qualtrics encryption for all transmitted data. Result access within Qualtrics requires a unique password ID that will only be accessible by this researcher.

Using this collection method, the Grand Valley State University Institutional Review Board (IRB) deemed the study exempt from a full review. With this outcome, the study will not require formal approval, renewal, or closure from the IRB.

Ethical Considerations

The ethical concerns of the survey and interviews are minimal. Participation in the research will be voluntary and possible participants will be established by referral(s). The research does not include any vulnerable populations or topics of a sensitive nature.

I consider myself a creative person and value creativity learning. I am also a keen supporter of design thinking as a tool for learning. These values do make me a biased researcher. I am, however, committed to the accuracy of the results. I will work closely with a faculty advisor to develop questions that do not “lean” in favor of the topic of research. Because of my involvement with Grand Valley State University as a student, employee, and intern, I have contacts that I plan to draw into this study (specifically instructors). As I understand it, design thinking is an optional tool of instruction within higher education. It is fair then, to assume, that all instructors who use design thinking see its value. I believe that design thinking as a tool for the instruction of creativity learning may be a unique learning outcome (if it is an outcome) and

not the primary motivator for all instructors. I hope the research will speak more to the potential existence of that truth.

Findings & Discussion

The survey was sent by email to twenty-five university instructors who use design thinking in their teaching. Of that number, there were ten completed surveys. The survey was sent by email to fourteen students and posted to an online group of adult learners. Of that group, the survey was completed in part by twelve participants.

What follows is a presentation of the findings from coding the responses from the surveys. Codes were derived from the questions as presented in the surveys.

Code One: Definition of Creativity

The first code emerges from questions asked of both data sets regarding the definition of creativity. It is important to lay a foundation of the subject's understanding to better grasp the influence learning, and specifically design thinking activities of learning, may have on their understanding of creativity exploration.

Subcode One: Newness

The word that repeated through both instructor and student definitions was "new." It was applied to finding "*new* ideas" and "*new* ways to do things," "gathering *new* knowledge", and "finding *new* perspectives" and "*new* limits."

Subcode Two: Reframing

A second aspect of the definition that was noticeably clear in the instructor's responses was the idea of creativity as a way of reframing existing knowledge. Instructors used words like "combine," "twist", and "improve" to address this idea of taking what exists to work toward

something different. A second way this reframing was clear was the reference to “drawing on past experiences to make leaps to other realms of knowledge,” and “improving old ideas”.

Recommendations and Conclusions for Code One

Both codes are in line with the literature focused on defining creativity. The idea of newness is reflected in the novelty previously noted and the literature alluded to changing domains which could be in line with the reframing noted in the survey results. There were no gaping differences or omissions within the survey results when compared side-by-side with the literature.

Code Two: Goals of Design Thinking

The second code from the content is a summary of the goals of design thinking. Again, both data sets were asked a question regarding their impression of the goals.

Subcode One: Thinking

The first subcode addresses the idea of design thinking to alter one’s thinking patterns. Both instructor and student responses included “innovative thinking,” “creative thinking”, and “critical thinking” as one of the goals of design thinking in instruction. Another thought process that was used as answers by both data sets was in reference to problem solving with, “design thinking changes your thinking about problems,” and “it’s (design thinking) a way to think about solutions”

Subcode Two: Centering

Although the aspect of design thinking as a human-centered process was only noted by two instructors, it is worth recognizing. One of the foundational pieces that set design thinking apart is the aspect of its human-centered design and I was surprised this was not noted by more

participants in the survey. The human-centered nature is foundational to the uniqueness of design thinking as a problem-solving process.

Recommendations and Conclusions for Code Two

The process of design thinking is unique and some of that uniqueness is reflected here. It is a process that is first and foremost human centered. Because the process is iterative, the human-center is 'revisited' repeatedly. This repeated consideration holds that aspect centrality. It is perhaps this re-centering that leads to the first listed sub-code of thinking processes and products that are innovative and creative.

Code Three: Usefulness

A third code in the content of responses surrounds the usefulness of design thinking both as a tool of instruction and as a tool used beyond the classroom. This is the one space of answers in which there was some discontinuity in answers.

Subcode One: Frame

Both instructors and students noted in several answers an acknowledgement of the structure that design thinking establishes. Instructors said, "it creates structure," "it is a framework", and it is "an ordered thought pattern". Students echoed this in a little bit different of responses, but still related to the frame design thinking creates with, "It engages students because it creates an open atmosphere for learning that is conversational." There were two responses of contradiction when asking "How design thinking teaches creativity"? One user said, "it does not, it provides structure," and the second participant said, "I'm not sure it does, the individual methods in the design thinking process might". Both contradictions to the question still hold some notice of the structure of design thinking. The student responses in this section were weak. All students agreed that learning design thinking had been an effective use of time/effort, but

there were no concrete examples of using the tool beyond the classroom that confirmed that notion.

Recommendations and Conclusions for Code Three

This is a place of obvious opportunity for additional research. In an ideal situation research could extend over a period to follow the trajectory of learners and leaders involved with design thinking. What would this trajectory show as it relates to the usability of design thinking both in and beyond the classroom?

Theme

To aid in visualizing connections, I created a Venn Diagram (see Appendix C). The intention of this visualization was to see the codes side-by-side and start to physically draw lines (seen as arrows on the diagram) between word in the codes where there existed a connection. As you can see within with diagram, there are connections between all the three codes. In the shaded spaces of intersection in the diagram I listed areas of connection:

<u>Connections Between</u>	<u>Named Connection</u>
Definition and Goals	New Ways of Thinking
Definition and Usefulness	New Frame
Goals and Usefulness	Changed Way of Learning

In this visualization, a theme begins to emerge among these connections. This theme can function as a beginning step in answering the research questions: How can Design Thinking be a Tool for Inspiring Creativity among Adult Learners in Higher Education? The genesis of this theme lies within Human-Engaged Learning. That is, learning that is human-centered, offers a structure that engages learners existing knowledge with space for conversation intended to bridge

knowledge gaps. This structure sounds easier than it is but can design thinking be a tool in this sort of learning, I would argue, yes. It is a structured process that engages past knowledge and relies on iterative conversation.

Closing

It is important to acknowledge the spaces of lack within this research. In reflection of this process, I can see many spaces for refinement and improvement. I acknowledge that as a first attempt of formal individual research, this project has been a qualitative analysis of impressions, an also a measured reflection of my own assumptions, learning, and ability. I believe that education is a space of needed social innovation and fostering creativity in learning within adults who are active and experienced members of society could fill a critical need across social spaces. As design thinking is not the only answer to developing creativity, creativity learning among adult students is not the only answer to social need. The need is large (overwhelmingly large at times), and the answer is a combination of man, many small solutions rooted in spaces of a willingness to learn, listen, and speak. Design thinking offers willing participants that space.

Appendix A
Survey Questions for Instructors

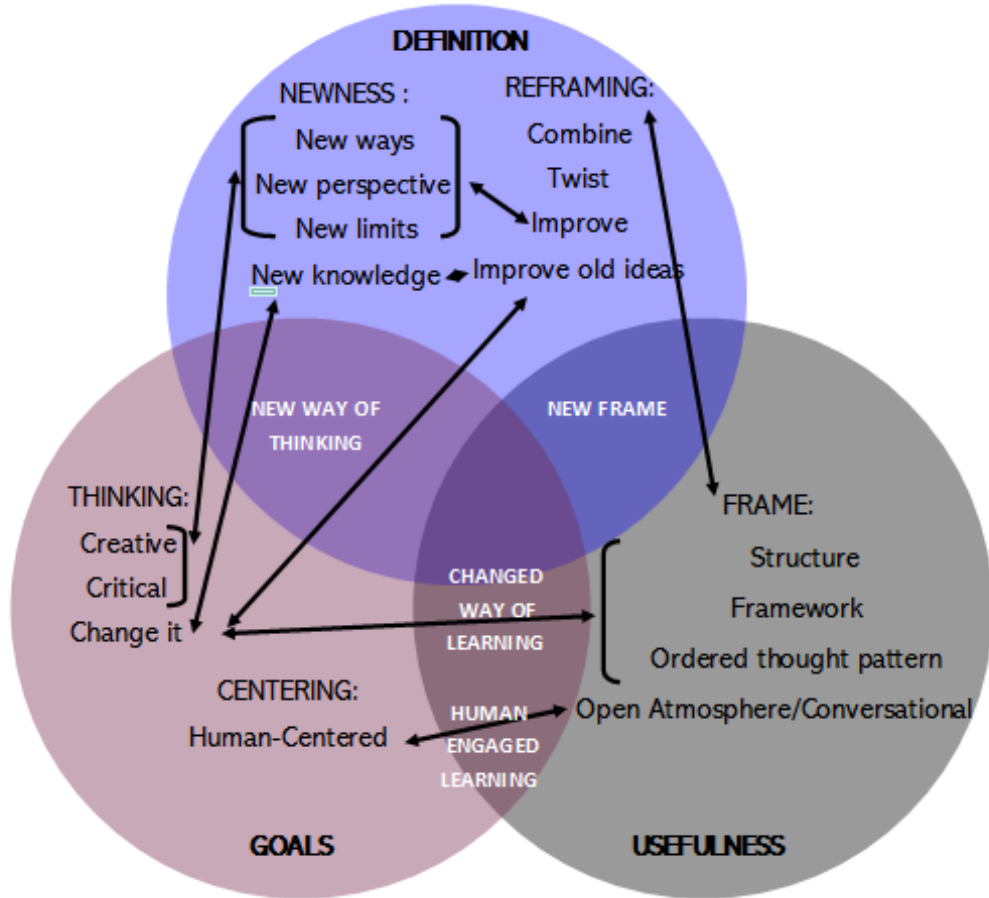
1. What are the goals of using design thinking in your course instruction?
2. In what way do you see design thinking as a useful tool of instruction?
3. How would you define creativity?
4. How do you think that utilizing design thinking methodology teaches creativity?
5. Do you use other tools as instruction for creativity learning?

Appendix B
Survey Questions for Students

1. What do you see as the goal of design thinking as a tool of instruction?
2. Have you used the tool(s) of design thinking outside of/beyond the class?
 - a. If so, how?
 - b. If not, why not?
3. Was learning about/utilizing design thinking a good use of your learning time/effort?
4. How would you define creativity?
5. Do you think utilizing design thinking increased your ability to think/act creatively?
 - a. If so, in what way?

Appendix C

Venn Diagram of Codes



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