Application of Design Thinking Principles in the Context of an Advertising Research Experiential Project (FULL PAPER)

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Abstract

Marketing programs are gradually recognizing the importance of meta-skills. This paper presents the classroom application of a pedagogical technique designed to foster design-thinking abilities to provide a deeper understanding of the concepts taught in an advertising class. The technique requires students to conduct an advertising agency audit and create an original advertising agency fact sheet to support evidence-based decision making. The goal for students is to use design thinking to convert data into a value-added evaluation product: a fact sheet. Student teams utilize the "design thinking" process which focuses on the needs of a fact sheet's end user, a decision maker, employing brainstorming, iterative design, rapid prototyping, and critique. After completing the project, students self-assess their experiences and learning by completing a survey. We conclude that using design thinking enriched students' learning experiences by both challenging and promoting higher-order thinking.

Introduction

Prior research findings support the perspective that some thinking abilities, which are not domain specific, meta-skills, substantially affect marketing success (Abrami et al., 2015; Bacon, 2017; Lee,et. al, 2015). Specifically, research indicates that the priority meta-skills thatmarketing employers seek from new graduates (e.g., critical thinking, ethical decision making, empathy, creative thinking) often transcend disciplines. For example, Bacon (2017) identified increases in intellectual orientation, curiosity, and cognitive complexity as important learning outcomes for marketing students. Marketing managers recognize that successful marketing practitioners must have meta-skills that enable professionals in complex and ambiguous situations to identify unexpected opportunities and combine seemingly unrelated or paradoxical ideas into innovative, relevant, engaging and emotionally satisfying products and services (Ryman, 2009, Schlee, 2010). Equally important are skills that enable professionals to empathize with others (Armstrong, 2016). Therefore, there is an emerging consensus among marketing educators that marketing education must emphasize the development of foundational meta-skills through experiential methods that allow for their application in unique marketing contexts (Capon, 2004, Krishnan, 1998).

The distinguished scholar and business school administrator, Herbert Simon asserted that professional schools, including business, engineering, law, medicine, and architecture, are all primarily concerned with the process of design—devising courses of action aimed at changing existing situations into preferred ones (Simon, 1996). These professions are all concerned with "what ought to be:" the professional practitioner is concerned with devising actions, processes, or physical objects that effectively serve a specified purpose. While analysis entails dissecting phenomena into their component elements, the practitioner is engaged in synthesizing, and organizing those pieces into larger systems and ideas (Glen, 2014). Simon argues for a business curriculum that integrates both discipline-based science as well as practitioner orientation, incorporating both scientific analysis and design. Although the logical, linear, and "left-brain" analytical skills are teachable and needed, increasingly more "right-brain" capabilities are

expected from marketing students as we are quickly moving out of the "Information Age" into the "Conceptual Age" (Pink, 2005). Therefore, expanding marketing students' repertoire of skills and abilities would allow them to envision a broader set of possibilities, expand the solution space, and lead to higher order innovative solutions (Liedtka, 2017). Bacon (2017) specifically suggests that marketing college education should impart to all students some higher order thinking skills and abilities that are valuable in marketing careers. Bacon (2017) indicates that the results of his study create an additional call for marketing educators to explore the nature of the higher order skills and abilities not measured in the literature so far. One such higher order thinking ability is design thinking ability.

Design Thinking and Innovation

Design thinking research is still relatively new but there is a growing interest in design thinking among management researchers. Scholars treat design thinking as a multi-epistemic process (Eagen et al.,2012). The design thinking process draws on multiple ways of knowing, including cognition, emotion, sensation, and intuition, and utilizes a variety of skills such as imagination and play to solve problems that have incomplete, contradictory and changing requirements (Eagen et al., 2012). Design thinking has the potential to go beyond analytical thinking by providing a more comprehensive alternative in dealing with managerial and marketing problems. In fact, Simon (1996) notes, design has been generally seen as an art—a process that is not fully explicit, involving intuition and judgment. From a marketing perspective, design thinking transcends purely intellectual activity and represents a generic approach to creating valuable new arrangements that improve consumer experience (Martin, 2009). As businesses are facing a growing demand for innovative products and services that offer rich experiences, design thinking garnering attention among marketing educators and scholars because it seems more suited to the task than linear, analytical methodologies.

There are four key components underlying the process of Design Thinking (Eagen et al.,2012):
1. Design is multi-epistemic: interacting with the world is as much feeling, sensing, intuiting as it is thinking (Jung, 1927);
2. Design is innovative: design is the creation of 'preferred futures' (Simon, 1996). Designers work on wicked problems and use abductive reasoning to come up with solutions to the problems (Kolko, 2010). Abductive reasoning is "argument to the best explanation" (Kolko, 2010). Abductive reasoning allows designers to view a problem with the end goal of finding a solution to it.
3. Design is service: the designer requires a client (Nelson and Stolterman, 2001). Designers want to create viable, feasible, and desirable solutions for a client. Attention is paid to the user experience. Designers note the emotions and perceptions of the customer as they use a product or service. Suri and Herndrix (2010) describe how designers view problems in a much broader context so that they can identify opportunities to enhance the customer experience.
4. Design is social: the success of a design is determined by that design's adoption by the social body (Rogers, 2003).

The current definitions of design thinking combine the elements of designing sensibilities within a business context. Tim Brown's (2008) definition clearly expresses how design thinking is the byproduct of two seemingly distinct disciplines. Brown (2008) defines design thinking as "a

discipline that uses the designer's sensibility and methods to match people's needs with what is technologically feasible and what a viable business strategy can convert into customer value and market opportunity." According to Eagen et al. (2012), these four elements, the multi-epistemic (specifically, intuition), innovation, service, and the social body, should be addressed in any pedagogy of design thinking.

Long before design thinking, exploration and understanding of design sensibilities and the design process has been a part of design research (Simon, 1969). In the late 1990s, as businesses recognized that innovation provides the closest thing to sustainable competitive advantage, design thinking skills became increasingly valued by managers (Hassi and Laakso, 2011). Business firms and design consultants started to explore how the process of designing with the attitude and sensibilities of designers could be used to help foster creativity and innovation in businesses (Adams et al., 2016). This sparked an interest in using design methods beyond creation of products (Kimbell, 2011).

Exploring Design Thinking Practices in Evaluation

Adams et al. (2016) explored the basic principles of design thinking within the context of the evaluation. Specifically, Adams et al. (2016) analyzed how three elements across all design thinking approaches, empathize and define, ideate, and prototype (Brown, 2009) fit into the context of program evaluation. Evaluators offer products (reports and other deliverables) as well as services (working with stakeholders so that evaluation is used for program improvement) (Adams et al., 2016). Applying design thinking to evaluation products allows evaluators to design a product that promotes client engagement and use of the research findings. .
Design thinkers use 'empathic' processes to understand the client's needs and experiences. The rationale for this process is that the more empathetic a designer is, the more likely the design solution will meet the client's need (Koskinen et. al., 2003). Using the information gained from the empathic process, evaluators can derive more meaning from the current 'needs assessment' methods, can 'step into' and 'out of' the client's world when needed, and can design an evaluation that not only meets stakeholders' needs but also enhances their perception and use of evaluation (Adams et al., 2016). It is important to ideate for both the intangible (experience) and the tangible (reports and other deliverables) components of evaluation (Adams et al., 2016). When ideating, design thinkers need to recognize that the evaluation reports are the crucial points of interaction between the client and the service and determine the client's emotional experiences and cognitive engagement at the points of interaction (Bate & Robert, 2006). It is important that evaluators explore different formats of the same evaluation document to ensure perceptual fluency and aesthetically pleasing experience to engage the client in the decision-making process. Adams et al., (2016) indicate that as a discipline, evaluation has to pay attention to what it means to create an experience for the client. Design thinking provides a framework for how to plan an evaluation that enhances the client experience, thereby increasing the likelihood of using evaluation findings in order to make evidence-based decisions.

Exploring Design Thinking Practices in Marketing Research Education

Schlee et al. (2010) observed that many employers are now seeking to employ individuals who demonstrate good understanding of the concepts and theories taught in marketing courses, i.e.

concepts pertinent to marketing research. Thus, the conceptual knowledge that students receive in their marketing research courses will facilitate their career advancement efforts at all stages of their work experience. For example, Schlee et al. (2010) estimated that for the 51.9% of entry-level jobs requiring some knowledge of marketing research, they would be expected to demonstrate skills, such as developing a questionnaire, selecting a sample, coding, or analyzing data. However, the 48.4% of upper-level marketing management jobs listing marketing research as a requirement, most likely expect a broader understanding of the marketing research function. Finch et al. (2012) highlight the importance of the development of analytical skills that support evidence-based decision making and thoroughly discuss the importance of reassessing how market research and evidence-based decision making is taught in undergraduate business programs. Practitioners typically purchase market research and intelligence, which they tend to synthesize along with other data in real time to make evidence-based decisions. Thus, it becomes clear that the challenge today is not access to enough data, rather access to too much data. Therefore, current advertising courses could be redeveloped into courses that contain advertising research modules focusing on the efficient and timely retrieval, organization, analysis, and presentation of evidence to support marketing decision making. This change needs to ensure that students remain able to adequately evaluate sources and quality of data they will use in their planning and reporting activities. Importantly, in line with Finch et al.'s (2012) findings, such a module could incorporate dimensions of methodology, specifically from the perspective of being an educated consumer who can effectively determine which secondary research products warrant an allocation of resources.

As marketing researchers prepare marketing research reports for their clients, either internal or external, the significance of integrating design thinking into marketing research curricula becomes apparent. Marketing educators can no longer simply mention the concept of "design thinking" in a principles of marketing class and then ignore the idea in future marketing courses. It is important to emphasize this concept's relevance to marketing research and data-driven decision making. Students undergoing marketing research training need to learn what it means to create an experience for clients who are going to be the ultimate consumers of the marketing research reports. Students need to internalize a customer-centric approach toward providing marketing research services in order to enhance the clients' experiences and thereby optimizes evidence-based decision making.

The theoretical framework presented by Adams et al. (2016) can serve as a conversation starter and provide a platform for marketing educators to develop teaching strategies to teach students how to design an evaluation experience for their clients by which to optimize decision making process. This paper describes a project for an undergraduate advertising course that integrates advertising research and design thinking. Business programs across the U.S. are continually updating and revising curriculua to meet the changing needs in the marketing arena, employer expectations, and legislative mandates regarding assurance of learning and student achievement. A growing number of colleges are incorporating more design thinking content into marketing courses, such as Product Development and Brand Management. Nevertheless, the topic deserves more coverage in the context of marketing and advertising research, and specific experiential projects may be necessary for advertising students. As advertising students learn to use design thinking while working on client-focused research projects, they also acquire abilities to organize and present research findings important for managerial decisions.

The Experiential Learning Model as a Basis for an Advertising Agency Fact Sheet Assignment

Eagen et al. (2012) assert that design(ing) cannot be taught in a lecture format. As marketing educators have moved from a traditional, passive, one-way, teacher-dominated style, there is now greater recognition of the value of an experiential approach to student learning (Camarero et al. 2010; Diamond, et al.; 2008; Dubosson, 2014; Freeman and Spanjaard 2012). Since design thinking is a concept that should be practiced (Hassi and Laakso, 2011), the experiential approach reflects pedagogical shifts that are necessary to teach design thinking. Most learning models suggest that learning is a multi-stage process (Stetsenko and Arievitch, 2002; Vygotsky, 1978; Kolb, 2015). Kolb's (2015) work on experiential learning demonstrates the necessity of cycles of action (Practice) and reflection (Theory) to build knowledge. Social constructivist pedagogy based on the Vygotskian theory of development (Feuerstein et al.,1987; Vygotsky, 1978) emphasizes guided instruction in theory and the application of theory via case studies, and design competence labs/workshops and term projects. Cycles of acting and reflecting are required to generate learning and advance understanding. Designing requires a process that allows a framing shift from design as object to design as process. While teaching design thinking, the educator's role is not to lead the student to the correct solution space, rather to guide the student using the appropriate process to the creation of a new solution. The most promising model of experiential learning applied to the context of teaching design thinking is the one described by Ward Eagen et al. (2012). Eagen et al, (2012) present an approach to design thinking in teaching and learning based on the belief that four elements, e.g. intuition, innovation, service, and the social body, must be addressed in any attempt at design education. We will illustrate these elements in our demonstration of experiential learning in advertising class. We suggest that design thinking, rather than being taught as a course, can be embedded into advertising curricula and mainstreamed throughout marketing curricula through approaches, such as the Learning Charrette, advocated by Eagen et al. (2012). A primary characteristic of designing is intuition, and understanding intuition necessarily precedes any pedagogical methodology that attempts to teach designing (Eagen et al., 2012; Lee et al., 2015; Kimbell, 2011; Armstrong, 2016; Matthews at al., 2017).

Eagen et al. (2012) proposes that the Learning Charrette, which emerged in architectural schools during the Beaux Arts period, is a way of learning-by-doing and integrating a range of knowledge and skills to solve a problem. In the Beaux Arts, traditions emerged that are still ubiquitous today—the use of the esquisse (a preliminary sketch solution to be further developed) and the use of the Charette—an intense, collaborative session in which a group of designers drafts a solution to a design problem (Eagen et al., 2012; Broadfoot and Bennett, 2003). Schön (1987) suggests that the architectural design studio represents a model of "learning-by-doing," which could be adopted and adapted to the context of marketing education (Lawson, 1997). Today 'Charrette' refers to any focused, collaborative session in which a group of designers drafts a solution to a design problem in a time critical environment (Eagen et al., 2012).

Most students need practice and guidance in the process of learning by doing. Researchers have suggested ways in which design thinking might transform management education (Dunne and Martin, 2008, Lee et al., 2015; Kimbell, 2011; Armstrong, 2016; Matthews et al., 2017; Brown,

2008; Brown, 2009; Martin, 2009; Koskinen et al., 2003). The 'Charrette' approach is used as a basis for the Advertising Agency Fact Sheet assignment described in this paper. The assignment recognizes four conditions for effective contemporary design studio-style instruction: (1) learning by doing, (2)one-to-one dialoge between teacher and student, (3) a collaborative context for teaching and learning, (4) process-focus, which puts less emphasis on the final evaluation of the outcome, and foregrounds deliberation and reflection as part of the design process (Eagen et al., 2012).

The Advertising Agency Fact Sheet Assignment: Using "Charrette" to Teach Design Thinking in an Advertising Class

An Advertising Agency Fact Sheet project was used in an advertising course as the vehicle to teach and assess research and design thinking skills. The project creates an applied data analysis experience that aims to develop students' critical thinking, design thinking, and research skills. Specifically, the dedication of additional time and resources to the advertising research project was motivated by the desire to improve the students' ability to integrate secondary data analysis and design thinking. Instead of just organizing a structured tutorial in a computer lab and sending the students to the library to complete their database searches for the advertising agency project, the author collaborated with a business librarian to create a library guide for business students that they can consult asynchronously whenever they need to learn or refresh the specific data search strategy. The author provided input to fine-tune the final guide so that it illustrates project-specific queries using selected marketing databases, e.g. Redbooks. Additional interactions with the librarian ensured that the library guide can be utilized by marketing students who work on a variety of research projects, and furthermore that it proactively addresses potential obstacles students might encounter in their work with the secondary data sources. Thus, the objectives of the advertising agency project included facilitating the development of essential marketing research skills, and the utilization of library information resources. The author set aside a thirty-minute class segment for an intensive overview of the key marketing databases. Given that the course is taught in a computer lab, the students were able to access the resources during subsequent class periods.

In order to prepare students for the advertising agency research project, we introduced an in-class activity at the beginning of the course which teaches empathy. Empathy is one of the fundamental abilities required by the practice of design thinking and user-centered innovation (Armstrong, 2016). As part of the activity, students chose both. a product brand and two different demographic groups, e.g. Latinos, African Americans, Asian American, disabled, elderly, etc. Students formed teams and each team drew stick figures to represent the two demographic groups. Students then created lists of the defining characteristics for each group under each stick figure and, next, drew a speech bubble by each stick person. Students would have to consider the cultural and other characteristics influencing how each would address one another, and subsequently have the two figures engage in a short conversation about the product while avoid stereotyping. Next, students collaborate to come up with a think bubble for their own stick figure and discuss in what ways the two stick people might think differently about the product. This leads into an exploration of demographic, cultural, and social differences and psychological issues. While discussing the activity, the marketing educator and the students

engage in a dialogical process of reciprocal creative acts. Thus, students learn how to consider different perspectives.

As part of the course, students learn how to use Adobe InDesign, using this application for approximately 55 minutes each week throughout the semester. The intersection of design thinking and data visualization is emphasized throughout the semester as well. The design thinking reading materials from the book by Gavin Ambrose (2015) are assigned and discussed through the semester so that students actively apply principles of design thinking while working on the InDesign assignments. We emphasize that the first stage in any design process almost always involves generating or receiving a design brief, which includes anything that will help the design team initiate the design process. A design brief presents the client's requirements for a job. We discuss each stage of the design thinking process: define (establish what the problem is), research (collect background information), create potential solutions, prototype (resolve solutions), select (make choices), implement (deliver the solution to the design brief), learn (review feedback to assess what worked and what did not). We explain that prototyping allows to rapidly test out ideas and learn by doing. Because the guided instruction described above recognizes students' zone of proximal development (ZPD) (Daniels, 2001) and scaffolds assignments, they achieve higher levels of confidence and, as a result, guidance diminishes as competence increases. The empathy assignment, discussion of assigned readings, and hands-on experience with InDesign leads to increase in competence, which allows students to carry out a proper course of action when working on projects, thus resulting in a more nuanced understanding of design thinking principles and application of research skills.

The Ad Agency research project addresses the challenge for marketing educators to maximize and build upon existing research skills and to increase application of design thinking skills. We argue that educational interventions involving design thinking must incorporate a type of educational/instructional scaffolding that builds on existing expertise in the areas of research and design so that sustainable learning outcomes are more likely to occur for more students over time. Students learn about secondary data analysis in their prior marketing coursework and already have knowledge about empathy and design thinking from activities prior to the assignment. The advertising research project is an example of using scaffolding to advance students' learning of design thinking. This approach works well with building upon existing practices and knowledge. The act of learning how to look at the issue from the client perspective and to ideate, prototype and implement were already established, knowledge of how to utilize professional design software was gained in the course prior to the assignment. We capitalized on the existing skills and already appropriated cultural tools, and facilitated the learning of some other higher order thinking abilities, those that establish a new style of thinking involving synthesis, integration, and empathy.

While developing objectives for the Advertising Agency Fact Sheet project, we adopted the Ambrose (2015) view that objectives are simply what the client hopes to achieve through commissioning a design job, and it is important that these are fully understood and 'mapped' to the design thinking. For this project, several learning objectives were specified: (1) follow an advertising agency to its key linkages (holding company/network), (2) develop the ability to utilize and critically evaluate information sources relevant to the advertising industry, (3) identify and summarize key points drawn from a large amount of information, (4) create an agency evaluation with informed predictions based on future marketing challenges and opportunities, (5) justify the decisions in an agency evaluation (6) develop the ability to properly

reference information sources, (7) successfully assess an agency's competencies based on past and current campaigns, (8) and present information, analysis, and assessment in a visually creative, professional, and fun manner.

Teams consisting of two students in an undergraduate principles of advertising course completed the Advertising Agency Fact Sheet assignment outlined below for one of the ten top agencies from the Ad Age's 2017 Agency A-List. The project simulated a simplified setting of the "real world" project scenario and the assignment simulated a "real world" design brief. Specifically, the scenario indicated that the CEO of a consumer packaged goods company has identified an advertising agency of interest and asked a student team to perform a comprehensive analysis of this agency and present it in the form of a fact sheet. The teams are in charge of the evaluation process and need to apply design thinking principles in the evaluation context. One of the guidelines includes applying an empathic process to understand the needs of the CEO to identify meaningful evaluation questions and develop a product – a fact sheet - suited for his/her "consumption" and use. The students needed to immerse themselves in the advertising industry world by researching facts about the advertising agency and then building informed assessments based on those facts. The design brief also instructs students to define the agency's target market and prepare a SWOT analysis for the agency backed up with facts, including prior successfully implemented IMC campaigns and analysis of the agency's internal capabilities. In addition, students needed to either recommend the agency to the CEO or suggest to search for an alternative. Specifically, the design brief consists of five parts. The first requires students to provide background information about the agency and address the following questions: What is the agency's focus, marketing communication specialty, or area of business? What services does it provide to its clients? What is the agency's philosophy of business? 3. How is it organized? What departments does it include? Is it part of a network or holding? Does it apply creative/brand thinking to other sources of revenue (other than developing the IMC campaigns)? Students are also asked to identify current ad campaigns that have been designed and executed by the agency. The second part of the design brief requires students to conduct an industry analysis, which implies completion of the following tasks: identifying main clients and their respective brand categories, identifying top five competitors, discussing how the emergence of major holding companies is impacting the advertising industry as well as the entire field of integrated marketing communications. This section also asks to answer the following questions: Why might a client choose to hire a creative boutique rather than an ad agency under consideration? The discussion of current events and industry trends is also required. The third part requests to provide an analysis of supply and demand. Specifically, students are instructed to describe a target market based on the agency's characteristics, present a profile of the current agency's customers or customers of similar agencies who would be interested in hiring the agency under consideration (e.g. industry, size, domestic/global), describe the agency's unique characteristics - other than the actual IMC services themselves, describe unique and innovative branding solutions offered, provide brief descriptions of successful promotional programs the agency designed and implemented, and find several examples of companies which have switched to/from the advertising agency under consideration and explore the reasons behind the decision and the implications to understanding client-agency relationships. Part four of the design brief requires students to prepare a marketing outlook. In order to do so, students are asked to establish a checklist of activities that could be used to evaluate an agency's current or potential services. This part contains an overall assessment of the advertising agency's competencies and its unique

value proposition and discussion of the pros and cons of hiring the agency. Students are also instructed to identify opportunities and challenges the CEO might face if the ad agency is selected and some of the things that the agency can do to address its weaknesses and ensure that its account managers and creatives are keeping abreast of external changes occurring in the market. A final decision needs to be clearly communicated in this section and references to the data sources have to be provided at the end of the fact sheet.

Class discussions emphasize the relevance of design thinking to information evaluation process, and the greater visibility of business professionals and customers. Students are instructed to create a compelling layout for the fact sheet using photos, images, tables, figures, appropriate typefaces. We highlight importance of applying graphics effectively, as well as creativity and originality. We explain in the rubric that the fact sheet should be designed in the way that not only meets the CEO's information needs, but also enhances his/her information processing experience and thereby facilitates optimal decision making based on the evaluation findings. The work on the projects followed the steps in a Charrette thoroughly described by Eagen et al.,(2012). We met briefly with individual teams for direction. We reviewed alternatives (several directions were presented by each team). An intense research and design stage (direction chosen, prototype built) followed. Next, review by a professor (50-60% completion for comments, directions, and approvals) followed. The importance of meeting deadlines was communicated to all teams at the beginning of the process: all work must stop at the critical deadline and everyone must understand that design is over. Each team presented their design for review by a professor and classmates. The final phase consisted of open critical discussion among the class and professor to achieve the maximum degree of participation by the students. It was made clear that what is or is not the best solution is irrelevant; what is important is the discussion of the process and lessons learned (Eagen et al., 2012; Cukier, Egen, Bauer and Ngwenyama, 2011).

Measures of Effectiveness of the Ad Agency Fact Sheet Project

In order to assess the extent to which the project accomplished its pedagogical objectives, students were asked to complete a questionnaire. A five -part questionnaire was prepared and administered following the project. All parts of the questionnaire were based on the scale for measuring convergence thinking developed by Park (2016). Park (2016) performed the confirmatory factor analysis to confirm the acceptable psychometric properties of the scale for convergence thinking. It is suggested by Min et al. (2005), Gorman (2010), Korres and Tsami (2010), and Schiebinger and Schraudner (2011) that convergence thinking is a new way of problem solving. As Herbert Simon (Simon, 1996) asserts, the process of design is primarily concerned with devising courses of action aimed at changing existing situations into preferred ones; measuring improvements in convergence thinking allows to directly assess the development of design thinking competencies. Convergence thinking is an antecedent of all three elements of design thinking. Therefore, the scale can measure the extent to which the project contributed to development of the three common elements of design thinking: 1) understanding the need and experience of the user (empathize and define); 2) brainstorming and coming up with a broad range of possibilities (ideate); and 3) building and testing concepts to select a solution to fit the user's problem (prototype) (Adams, 2016). Park (2016) proposes that a five-factor model structure of the scale for convergence thinking could be a trading zone for knowledge fusion (Gorman, M., 2010).

Part A of the questionnaire was designed to measure students' perceptions of how the entire project experience contributed to development of synthetic thinking. Synthetic thinking is one of the defining dimensions of converging thinking, which via integrating different thinking styles allows ideating new design concepts. Perceptions of improved synthetic thinking were solicited using a series of statements about the project impact on advancing those learning goals that the advertising research project was intended to achieve. Using a seven-point scale (where -3 =strongly disagree and +3=strongly agree), the students reported their level of agreement or disagreement with each of the statements according to how well each statement describes the project experience in terms of facilitating development of such qualities and habits of mind as exploring unknown things continuously, pursuing a new way of applying a technique, designing an advertising "product", logical thinking for creative problem solving, facing an uncertain and complicated reality, pursuing unexpected opportunity, converting an idea into action, observing without prejudice.

Part B of the measurement instrument measured objective information management using a seven-point scale (where -3=strongly disagree and +3=strongly agree) according to how well project experience facilitated the following skills: using the production process step-by-step, anticipating user satisfaction, exchanging information and sharing it with a teammate, developing several prototypes, using library databases/ information management systems, applying relevant theories and concepts for planning, using empirical data.
Part C of the evaluation process included statements describing how working on the project promoted development of logical thinking, specifically abilities such as following the steps and obtaining outcomes, following clear procedures to solve problems, drawing conclusions based on thorough investigation, achieving outcomes consistent with the project objectives, using the overall knowledge of advertising, using prior knowledge acquired through experience, improving maturity in one's knowledge area, selecting and applying solutions.
Part D of the questionnaire measured intuitive thinking and included items measuring students' perceptions that work on the project helped to develop abilities and habits of mind such as acting according to one's own values, designing according to one's own taste, thinking of an idea without searching for logical explanation, assessing using an image, possessing the passion for something, inferring in an abstract way, pursuing an incomplete but useful knowledge, understanding with the sense of intuition, understanding humans or things in a subjective way, arriving to a conclusion through a fast and instant thinking. Again, a 7-point agreement scale was used in this section of the survey.

Finally, Part E of the questionnaire measured subjective thinking and included items related to students' development of understanding of influence of emotion, recognizing and interpreting one's inner self, exploring emotions of humans, connecting inner self and outside world, trying to understand deeply human nature.

The surveys were administered immediately upon submission of the ad agency fact sheet project. The students were informed that the survey was intended to evaluate their perceptions of the effectiveness of the Ad Agency Fact Sheet Project. Students were encouraged to be as candid as possible. To minimize the effects of positive response bias, the survey did not require the students to identify themselves. The data reported in this study was collected over a recent two semester period (2 class sections). In total 24 surveys were returned.

Results of the Effectiveness of the Advertising Research Project

Eleven questions described above were used to assess students' perceptions of developing synthetic thinking (see Table A). The data were aggregated into a single item measure of the student synthetic thinking as one of the learning outcomes. The results provide evidence that the students perceived that the project was an effective learning tool to strengthen synthetic thinking (mean = 1.9629 on a seven point scale (where -3=strongly disagree and +3=strongly agree)). In addition, ten items described above were used to assess students' perception of the extent to which the project contributed to the objective information utilization skills (see Table B). The nine items were aggregated into a single objective information utilization formative index for subsequent analysis. The results provide evidence that the students found the ad agency fact sheet project to be a positive contributor to their objective information utilization skills (mean = 1.8125 on a seven point scale (where -3=strongly disagree and +3=strongly agree)). Additional analysis was carried out to assess students' perceptions of the degree to which the project helped to improve their logical thinking. The ten items (see Table C) were aggregated into a single logical thinking formative index. The results provide evidence that the students found the ad agency fact sheet project to be a positive contributor to their logical thinking abilities (mean = 1.9806 on a seven point scale (where -3=strongly disagree and +3=strongly agree)).

In order to assess students' perceptions of the extent to which the project helped to advance their intuitive thinking abilities, the eleven items described above (see Table D) were used. The items were aggregated into a single intuitive thinking formative index for subsequent analysis. The results provide evidence that the students found the ad agency fact sheet project to be a positive contributor to their intuitive thinking abilities (mean = 1.8125 on a seven point scale (where -3=strongly disagree and +3=strongly agree)).

Finally, the analysis was carried out to assess students' perceptions of the degree to which the project helped to improve their subjective thinking. The eight items (see Table E) were aggregated into a single subjective thinking formative index. The results provide evidence that the students found the ad agency fact sheet project to be a positive contributor to their subjective thinking abilities (mean = 1.82780 on a seven point scale (where -3=strongly disagree and +3=strongly agree)).

The mean synthetic, logical, intuitive, and subjective thinking as well objective information utilization scores indicated that students believed that the project strengthened their design thinking abilities and taught them how to integrate objective utilization of information with logical thinking commonly associated with the scientific method, intuitive thinking practiced in the field of arts, and subjective thinking normally practiced in the humanities. Of the five thinking styles measured by the post-attitudinal items, the first two by rank are synthetic thinking and logical thinking. Moreover, there is no significant gap between two highly ranked thinking styles and the next three thinking styles: objective utilization of information, intuitive thinking, and subjective thinking. This demonstrates that the project contributes to cultivating and strengthening all five thinking styles that are essential building blocks of design thinking ability. This validates the assertion that an advertising agency fact sheet project allows practice of design

thinking, and is a valuable learning experience teaching how to solve problems creatively by drawing on different thinking styles.

Conclusion

As the students' evaluations of the ad agency fact sheet project seem to indicate, the project accomplishes its objectives. As a pedagogical device, we wanted to use the project requiring design thinking to help students build a deeper understanding of the intersection of secondary research, information visualization and decision making, but also develop thinking abilities at a higher level, using empathy, logical thinking, subjective thinking, intuitive thinking, and information utilization. The process of gathering and interpreting secondary data, then organizing and presenting it in the form of an ad agency fact sheet, clearly encourages students to develop a deeper understanding of the factors surrounding the ad agency performance and teaches them to internalize a customer-centric approach toward providing marketing research services while keeping an eye on facilitating evidence-based decision making.
We wanted to provide students with the opportunity to work on developing their design thinking skills which, as many authors indicated, have been sorely neglected in the business curriculum. This addresses Bacon's (2017) call for action to explore how higher order thinking abilities that are valuable in marketing careers, yet underrepresented in marketing curriculum, can be incorporated into marketing curricula.

It is now accepted that managers and consumers employ quasi-pictorial representations and use such representations in cognitive processing (thinking). The evidence suggests that both images and propositional representations (representations in the mind of beliefs and assertions) affect decision making processes. We're moving from a text culture to a visual culture. Education, business, products and services, and communication are all becoming visual, and design is an economical and fast visualization tool. This is why design is a significant part of business today. Even the articles in Harvard Business Review (Brown, 2008; Martin, 2009) discuss the significance of teaching design thinking principles in the business schools.
This paper recognizes importance of teaching design thinking in the context of advertising research. As a discipline, advertising research has paid considerable attention to how to design useful and actionable research projects to build better understanding of the markets and consumers (Kerr et al, 2012). However, little attention has been paid to what it means to create an experience for the customer "consuming" research reports conducive to an effective use of the research findings. Design thinking provides a framework for how to plan an advertising research project that enhances the decision-maker's experiences and therefore increases the likelihood of translating research findings into actionable decisions. Hassi and Laakso (2011) emphasize that design thinking is a concept that should be taught and practiced.

This paper explored applications of design thinking strategies in the classroom through the creation of an advertising research "product," and identified a new way of teaching design thinking in the context of an advertising research project. The process used by students allows the assignment to become experiential, and facilitates the development of the following skills: empathy, synthetic thinking, objective utilization of information, logical thinking, intuitive thinking and subjective thinking (Park, 2013). Also, the students are more involved and committed when they know that they will be sharing their designed "products" and will be able

to enrich their professional portfolio. The emphasis is on making advertising decisions based on an understanding and interpretation of qualitative and quantitative data. The project provides an alternative to conventional assessment methods, such as exams and tutorial exercises. While exams test students' knowledge of research, they don't test application. In the ad agency research project, students draw on secondary research skills, information literacy, and design thinking skills to help the client make advertising decisions.

Background information of Design Thinking oriented classes involving Charrettes (Eagen et al., 2012) and the formal student evaluations of the ad agency fact sheet project introduced in this paper, suggest that the project produces a number of advantages: (1) generates engagement and an attitude of involvement; (2) develops an experience in and an appreciation of the team approach; (3) broadens individual perspectives; (4) generates spontaneity, reacting to 'intuition' or 'feelings'; (5) dramatically shifts the knowledge domain towards the process, and the applied; (6) develops awareness of the client and consumer; (7) generates reflection/action/reflection as a cycle; (8) develops timeline awareness; (9) and increases individual confidence.

All conditions for effective use of Design Thinking concepts in marketing education were considered throughout the project (Eagen et al., 2012). There is no one right way to organize design thinking oriented classes; this paper provides some important suggestions suggestions for educators to keep in mind. As Glen, Suciu and Baughn (2014) state, business programs have to develop pedagogies combining analytic reasoning with a more exploratory skill set embraced by design practitioners. Charrettes, the design studio approach described in this paper, can be embedded into the curriculum and mainstreamed throughout marketing programs. The Charrette can be applied to a wide array of cross-disciplinary problems offering unparalleled opportunities to successfully apply design thinking principles.

Table A

Items Measuring Synthetic Thinking

Post-project Statements	Mean Ratings1
1. Exploring unknown things continuously	1.9583*
2. Pursuing new things continuously	2.0417*
3. Pursuing a new way of applying a technique	2.3043*

4. Designing an advertising “product”	2.2083*
5. Logical thinking for creative problem solving	2.0417*
6. Applying a concept using a design technique	2.4167*
7. Facing an uncertain and complicated reality	1.2917*
8. Pursuing an unexpected opportunity	1.7083*
9. Practicing deductive reasoning and verification repeatedly	1.5833*
10. Converting an idea into action	2.2917*
11. Observing without prejudice	1.7500*
Synthetic Thinking (average of above items)	1.9629*
1 As measured on a seven-point scale, where +3 = “strongly agree,” –3 = “strongly disagree,” and 0 = “indifferent” or “don’t know.” * $p < 0.001$; * $p < 0.1$ (significance of the mean is relative to a 0 rating).	

Table B

Items Measuring Objective Information Utilization

Post-project Statements	Mean Ratings1
1. Produce “advertising” products using market analysis	2.1667*
2. Using the production process step-by-step	2.2500*
3. Anticipating user satisfaction	1.7500*
4. Exchanging information and sharing it with a teammate	1.8333*
5. Designing a user interface	1.6250*
6. Developing several prototypes (computer graphics)	1.7083*
7. Using library databases/ information management systems	1.5417*
8. Pursuing knowledge management	1.8333*
9. Applying relevant theories and concepts for planning	1.9167*
10. Using empirical data	1.5000*
Objective Information Utilization (average of above items)	1.8125*

1 As measured on a seven-point scale, where +3 = “strongly agree,” –3 = “strongly disagree,” and 0 = “indifferent” or “don’t know.”
* $p < 0.001$; * $p < 0.1$ (significance of the mean is relative to a 0 rating).

Table C

Items Measuring Logical Thinking

Post-project Statements	Mean Ratings1
1. Following the steps and obtaining outcomes	2.000*
2. Following clear procedures to solve problems	2.0833*
3. Drawing conclusions based on thorough investigation	2.0417*
4. Achieving predictable outcomes consistent with the project objectives	1.7083*
5. Using the overall professional knowledge of advertising	2.1667*
6. Pursuing perfect maturity of the outcome	1.9167*
7. Using prior knowledge acquired through experience	2.1250*

8.Gaining maturity in one's knowledge area	2.1250*
9. Recognizing problems, selecting and applying solutions	2.2273*
10. Searching original and professional knowledge	1.500*
Logical Thinking (average of above items)	1.9806*
1 As measured on a seven-point scale, where +3 = "strongly agree," –3 = "strongly disagree," and 0 = "indifferent" or "don't know." * $p < 0.001$; * $p < 0.1$ (significance of the mean is relative to a 0 rating).	

Table D

Items Measuring Intuitive Thinking

Post-project Statements1	Mean Ratings1
1 Acting according to one's own values	1.3750*
2. Designing according to one's own taste	2.0000*

3. Thinking of an idea without searching for a logical explanation	1.1304*
4. Pursuing pleasant outcomes, not predictability	1.7500*
5 Assessing using an image	2.0833*
6. Possessing the passion for something	2.0833*
7. Inferring in an abstract way	1.7500*
8. Pursuing an incomplete but useful knowledge	1.2917*
9. Understanding with the sense of intuition	1.4167*
10. Understanding humans or things in a subjective way	1.7917*
11. Arriving to a conclusion through fast and instant thinking	1.0833*
Intuitive Thinking (average of above items)	1.6155*

1 As measured on a seven-point scale, where +3 = “strongly agree,” –3 = “strongly disagree,” and 0 = “indifferent” or “don’t know.”
* $p < 0.001$; * $p < 0.1$ (significance of the mean is relative to a 0 rating).

Table E

Items Measuring Subjective Thinking

Post-project Statements1	Mean Ratings2
1. Understanding the influence of emotion	2.0000*
2 Recognizing and interpreting one’s inner self	1.5833*
3. Exploring sensitivity and emotions of humans	1.7500*
4. Exploring the subconscious mind and impulse	1.8333*
5. Connecting inner self and the outside world	1.8261*
6. Trying to deeply understand human nature	1.7500*

7. Analyzing consumer mentality of humans	2.0000*
8. Visualizing humans or things	1.9167*
Subjective Thinking (average of above items)	1.82780*
1 As measured on a seven-point scale, where +3 = “strongly agree,” –3 = “strongly disagree,” and 0 = “indifferent” or “don’t know.” * $p < 0.001$; * $p < 0.1$ (significance of the mean is relative to a 0 rating).	