Design Thinking as a Strategic Planning Tool for Adapted Physical Activity Programs within a University setting.

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Abstract

As a community-campus partnership, the adapted physical activity programs at Indiana University-Purdue University, Indianapolis used design thinking as a method for strategic planning to assist in expanding and developing community-based programming. In partnering with the Design thinking graduate program at Herron School of Art and Design, the Adapted Physical Activity Clinics collaborated on the participatory research project using the design thinking process framework over 16-weeks. By the end of the strategic planning process, the programs determined a sustainable mission and vision. Design thinking also revealed the benefits that the programs and their future opportunities hold, not only to the families served, but also to undergraduate students participating in service learning.

Introduction

Service learning is a structured learning experience that blends community service with preparation and reflection to gain further understanding of course content, a larger appreciation for a particular area of study, and enhancement in students overall personal values and civic obligations (Andrew, Richards, Wilson & Eubank, 2012, Roper & Santiago, 2014). What makes service learning more appealing than traditional teaching and learning styles, such as instructor centered teaching, is its "counter normative" pedagogy approach. That is, students, instructors, and community partners co-create learning and teaching-learning processes become a collective effort (Clayton & Ash, 2004).

According to Roper and Santiago (2014), students develop a sense of civic responsibility when service learning is incorporated into the undergraduate curriculum. Students learn about instruction and implement instruction through integration and application of the knowledge that they received in the classroom (Weber, 2008). By experiencing the art of instruction in a safe and structured environment, students make realistic connections to what they will be experiencing later in their individual professions (Weber, 2008).

The adapted physical activity clinics (henceforth referred to as "clinics") at Indiana University-Purdue University Indianapolis (IUPUI) are community-based physical activity programs for people with disabilities designed to increase physical activity opportunities and provide service learning experiences for students. From the onset, clinics were designed to be family centered and community based. Several

professionals were involved in the initial program design and considerable effort was made to co-create programs with families and service professionals. Additionally, clinics serve as service learning and community engagement opportunities for undergraduates pursuing a Kinesiology degree in Exercise Science or Teacher Education (PETE). As with many university settings, these programs are one of few opportunities for students to work with individuals with disabilities in a physical activity setting.

To enhance co-collaborative nature of clinics, an advisory board was established with the purpose of defining the future possibilities of the programs. The looming question was, "what can we build moving forward to enhance service delivery and promote increased adapted physical activity?" In collaboration with the Herron School of Art at IUPUI, the clinic advisory board worked to build steps for service delivery expansion using design thinking as a strategy. What we learned was how collaboration between professionals, students, community, and participants resulted in a thoughtful plan to expand programming. The purpose of this article is to describe the process of design thinking and discuss the importance of design thinking as a method to create a strategic plan for adapted physical activity community based programming.

Program Descriptions

The clinics at IUPUI represent five individual programs catering to specific demographics within the disability community. Three of the five programs run one day a week for six weeks each fall and spring semester, while the other program run for six to eight weeks over the course of the summer (Insert Table 1). Each program pairs an Exercise Science or PETE student with a participant. Students' transition in-class

learning to a community-based setting including but not limited to: assessment, planning skill-based activities and reflecting upon their weekly experiences.

The two foundational programs are Motor Activity Clinic (MAC) and Ability Fitness Clinic (AFC). Motor Activity Clinic serves families who have children with disabilities ages three to fifteen focusing primarily on gross motor movements and aquatic skills whereas the Ability Fitness program focuses on increasing independence and quality of life for young and older adults with disabilities. Live*Laugh*Dance is a program developed specifically for individuals with Down syndrome focusing on dance (balance and coordination) and socialization. The PASS Clinic (Promoting Adapted Sport Skills) was developed to allow families and participants self-select sport skills that are then the primary focus of programming. Finally, as a means to bridge the gap between age groups in MAC and AFC, an Advanced Motor Activity Clinic (AMAC) was designed for participants who aged out of MAC, but were not yet ready to progress to AFC by blending the aquatic aspects of MAC with the physical fitness and independence aspects of AFC.

For twenty years the programs offered continued to grow in participants. There has been an ever present and growing desire from families and other community members to expand programs offered by frequency, additional locations and facilities closer to suburban and rural areas of Indiana, and more staff specifically trained to work in adapted physical activity. Program expansion would require significant investment from the university, in-kind staff, graduate students, and undergraduate scholars. Collectively, council members elected to pursue a unique type of strategic planning called Design Thinking. Using the knowledge and expertise of the design thinking

graduate students and their director at Herron School of Art and Design at IUPUI, we developed a series of emphases that will lead our mission forward and expand our programming to the community.

Design Thinking

The graduate program in the Visual Communication Department at Herron School of Art and Design at IUPUI focuses on design thinking as a core curriculum framework. Design thinking methodology utilizes an innovative, people-centered approach to solving problems, which focuses on exploring and then identifying opportunities before generating possible solutions (Hong et al, 2016). The program approaches design as a basic human capacity, focuses on forms of inquiry and actions involved in designing, and aims to empower people to be a creative change agent. This ambiguous and abstract quality of organization provided the powerful pedagogical context for the students to apply the inquiry process of designing.

Among many definitions of design thinking, the graduate program at Herron School of Art and Design approaches "design" as a form of inquiry involved in problem solving. This approach takes a broader view referred to as "abductive reasoning". Abductive reasoning seeks an explanation based on relevant evidence that is already well known and widely accepted (Leavey, 2010, Orthel, 2015). The process is about discovering problems or opportunities based on pertinent information from stakeholder interviews and qualitative observation.

This methodical approach with participatory and co-creative aspects was well aligned with the clinic's mission and vision and was very appealing to the clinic advisory

council. The advisory council worked with Herron's first year graduate course, '*the collaborative action research in design',* which is an integrator course in which Herron graduate students apply theoretical and methodical understanding of design thinking to real-world problem solving. What we learned was how collaboration between professionals, IUPUI undergraduate students, community, and participants resulted in a thoughtful plan to expand programming.

Design Thinking Methodology for Strategic Planning

Design thinking method considers every possible facet and every affected constituency when crafting a possible solution by using a holistic research approach. The most appealing characteristic of design thinking is the underlying ability to make the researcher understand the human experience and the patterns that emerge through acquired qualitative data. Tactical exploration of community needs, environmental and social factors (such as facility accessibility, facility proximity, and social interactions with other individuals with and without disabilities), competitor identification, and current or emerging trends are fully examined (Holloway, 2009). As a strategy, it provides a collaborative method to "messy" organizations (e.g., multiple programs, several constituents) and has been studied across several different fields including engineering and architecture (Kimbell, 2011).

The course '*collaborative action research in design'* taken by the design thinking graduate students at Herron School of Art and Design introduced the Simplex Process (Insert Figure 1a., basadur.com, personal communication, April 24, 2017) as an alternative design thinking process model. The Simplex Process allowed the work to be

done within a 16-week time frame. The student research team applied this process model to seek solutions to the question, “what can we build moving forward to enhance service delivery and promote increased adapted physical activity?”

The Simplex process uses both divergent and convergent thinking. Divergent thinking is an exploratory, generative side of cognitive approach while convergent thinking is analytical and evaluative to bring closure to each stage of the design process (Hong et al, 2016). While design thinking has order and structure as a methodology, it should not be seen as a concrete or inflexible approach to design. Often faced with “ill-defined” problems, using the simplex process one does not have to follow any specific order and stages can often occur in parallel or be repeated. As such, the stages should be understood as different modes that contribute to a project, rather than sequential steps to be followed. Ability to move back and forth between stages of the Simplex process was fundamentally important to our organization and multiple stakeholders (see Figure 1b).

The clinics advisory board at IUPUI collaborated with the Herron design thinking graduate students to use the Simplex process as a co-collaborative strategic planning process. Through their initial interaction with the advisory board, the Herron student research team was able to identify the key stake-holders for the organization including clinic family members, clinic participants, student’s enrolled in the course, advisory board members and other community members. Using both a content co-creation approach as well as participatory action research together with key stakeholders, the design thinking team collected data regarding the benefits (met needs) and opportunities (unmet needs) of the organization (see Appendix B). The following outlines how moving

through specific steps of the simplex process assisted our board's future direction planning.

Phase One: Problem Formulation-

Utilizing the Simplex process, the Herron team started with problem formation. After informal conversations with the advisory board and clinic director, we were able to identify key issues facing the growth and sustainability of clinics. Problem formulation includes three separate steps: problem finding, fact-finding, and problem definition. An analogy would be identifying our strengths and weakness surrounding our central question of how to grow and maintain quality. The following describes how we utilized each step to frame current challenges facing our advisory council.

Step 1: Problem Finding- The purpose of this step is to identify all fathomable problems or opportunities that an organization may face hindering the ability for organizational improvement. Within this step, key organization stakeholders were identified and introductory research was performed at each program site. This included observing participants, students, and the overall clinic environment. While observational research was being conducted, individuals were being identified to conduct more formal interviews for fact finding.

Step 2: Fact Finding- With the simplex process, fact-finding follows problem finding. This step is concerned with actively collecting information that causes an organization difficulty (i.e., problem finding). To gather more information on the existing experience and the people clinics serve, the design research team conducted interviews with stakeholders and observed the clinic process. While gathering information related to

the perceived opportunities (i.e., facts), the design team also evaluated and selected facts that helped define the problems within clinic programming. The redundancy between problem and fact-finding was crucial to narrow in on solvable problems but also identify future issues that could be addressed.

Step 3: Problem Definition- In problem definition the facts outlined in Step 2 are converted into a variety of "how might we" statements or challenges and one (or a few) of these challenges are chosen to be the most beneficial to solve. For this step, it is crucial to ask the right questions and determine the best problem definitions in order to truly assist the organization. The design team diverged and converged "How might we?" opportunity statements to turn identified problems into opportunities for action (Insert Figure 2 & 3). After determining which opportunities are strategically appropriate and relevant, the design team began framing the problems in an intentional and tactical point of view (see Appendix B). It was determined that our overall strategic problem statement was defined as*, "how might our programs become sustainable and expand while maintaining quality?"*

The next phase of problem definition was planning, the overall objective was to generate a road map that the advisory board could utilize as a strategic planning tool to attain the identified objectives noted above (Insert Figure 4). During this process, the Design thinking team met with stakeholders to gain insight into what beliefs were around sustainability, quality and growth. The council struggled with addressing two primary questions: would growth sacrifice quality? If we do not grow, can the programs become sustainable? The identified problems were then prioritized based on the discussed criteria

such as urgency and resources. Moving forward, the advisory council needed to find a solution to become sustainable and expand programming.

Phase Two: Solution Formulation-

In phase two, the design thinking team and stakeholders explored possible opportunities through the use of "how might we" statements. Four potential opportunities were examined in the solutions phase including: 1)How might we transform clinic's spirit into an organizational identity? 2) How might we retain the social benefits of the program? 3) How might we secure organizational resources?, and 4) How might we foster a relationship between clinics and the community?

Step 4: Idea Finding- The advisory board decided organizational identity, reflecting the current and future vision and mission, was the most prioritized task. In defining organizational identity, the design team conducted multiple ideation sessions with key stakeholders including families, advisory board, graduate students, student assistants, and professor. Stakeholders were asked to envision current state of clinic programs and what the overall impact of the programs meant for them as a community (e.g., students, families, etc). Common themes were identified then categorized (see Figure 5). These categories were used to shape our mission and vision but also to formulate an action plan.

Steps 5, 6, and 7: Evaluation and Selection, Planning, and Acceptance Gathering- From step four, the research team could identify the qualifiers or key aspects in composing a new vision and mission statement for the clinics. However, the course structure, which was sixteen weeks long, did not provide enough time for the team to produce the final mission and vision statement (vision and mission were developed soon

after strategic planning sessions ended). These steps mainly focus on building a consensus on the proposed design solution by examining criteria for implementation. For example, although the Advisory council did not develop a specific vision or mission statement, we had clear elements in place. Through the processes of identifying key elements, we were able to move forward and develop a 12-month road map to strategically move forward.

Step 8: Action- The major output from this collaboration was a road map for strategic planning which is based on the consensus among the stakeholders and the needs of the clinics. This road map, as a critical decision aid tool, would serve the Advisory council well moving forward (see Figure 5). This roadmap became our strategic plan. It focuses the Advisory council and sets a path for objective and purposeful community engaged planning. The following will address how usage of Design thinking as model of strategic planning was both useful and innovative for community-based adapted physical activity programs.

Results of Design Thinking on an APA Program

The six-month strategic planning process assisted the council in the creation of a sustainable mission and vision for our programs but it also elucidated how our families and students see the benefits of our programs and future possibilities. Following a path through the problem formulation phase, fact finding revealed key stakeholder values about clinic. During interviews families reported on how the environment was conducive to learning and instruction and that planned activities were fun, engaging, and age-appropriate emphasizing the benefit of student's experience, hands-on learning, and

professional attainment of skills. Significant to the fact finding step was how the "facts" lead to the development of vision and mission statements inclusive of family, community, and student education.

Ideation sessions lead to action solutions. For example, families reported that clinic's low-cost ($35 per program) as well as it's convenient and regularly scheduled programming allowed for high member participation. Additionally, the emotional environment fostered through clinics allowed for a safe and familiar setting for families and children. Students reported a strong desire to have additional discussions regarding their anxiety and worry going into clinic. Also important to students were more opportunities for hands-on work and concentrated time with staff during clinic. These ideas shaped how we train and debrief students during clinic and also resulted in developing a new program to increase our year-around programming for families.

Opportunities for growth were also identified and were scalable in nature. Some opportunities were infrastructure (e.g., online registration, parking, program waitlist) while others were related to program administration (e.g., student training, equipment used). Opportunity focused feedback was critical to advisory council and aided in significant planning measures. Feedback also positively changed infrastructure investment. For example, by the end of the strategic planning process, a new program coordinator was hired to specifically address clinic growth opportunities and logistics. In conclusion, the benefits of substantial stakeholder discussion, reduction of interview data, challenging understanding of opportunities, and formulating and action plan substantially changed our movement towards goals and comfort in having obtainable goals.

Discussion

Design thinking is a systematic and people centered approach to research that uses divergent and convergent thought processes to formulate opportunities for change within an organization. Why is the process of design thinking so valuable? Adapted physical activity programs whether at the undergraduate or masters level, will use community-based programs to train students in teaching and supervision. Training programs provide a valuable base of skills for students and future professionals but, with strategic thinking, these programs can also be a valuable resource to the community in a much more enriched fashion. The idea of co-creating strategy to institutionalize programs, fund programs, and create unique learning situations for students can be the outcome of Design Thinking.

The use of Design Thinking, specifically “how might we” statements allowed for our council to think not only about programs and students, but how to facilitate community development, program expansion, and educational opportunities. Strategic planning also facilitated our communication avenues specifically to University administration, granting and foundation agencies and future community partners. As community-based programs continue to grow and thrive in the adapted physical activity community, methods such as Design Thinking can greatly enhance quality service delivery and student educational experience.

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Appendix A

Table 1. Program Descriptions

Program	Focus	Duration	Participant Age Range
Motor Activity Clinic (MAC)	Gross and fine motor skill development Aquatic skill development Developmental activities	Once a week Two hours Six weeks during semester	Three to sixteen
Ability Fitness Clinic	Physical activity and fitness	Once a week for two hours Six weeks during semester	Eighteen year of age and up
Advanced Motor Activity Clinic (AMAC)	Transitional physical skills which may include sports, fitness or advanced aquatic skill training	Once a week for two hours Six weeks during semester	Sixteen to eighteen years of age
Promoting Adapted Sport Skills (PASS)	Individually chosen sport skill development (group or individual)	Once a week for 90 minutes Six weeks during the summer	Nine and up
Live*Laugh*Dance	Adapted dance program focused on motor coordination and group dance skills	Once a week for two hours Eight weeks during the summer	Fifteen and up

Figure 1a.

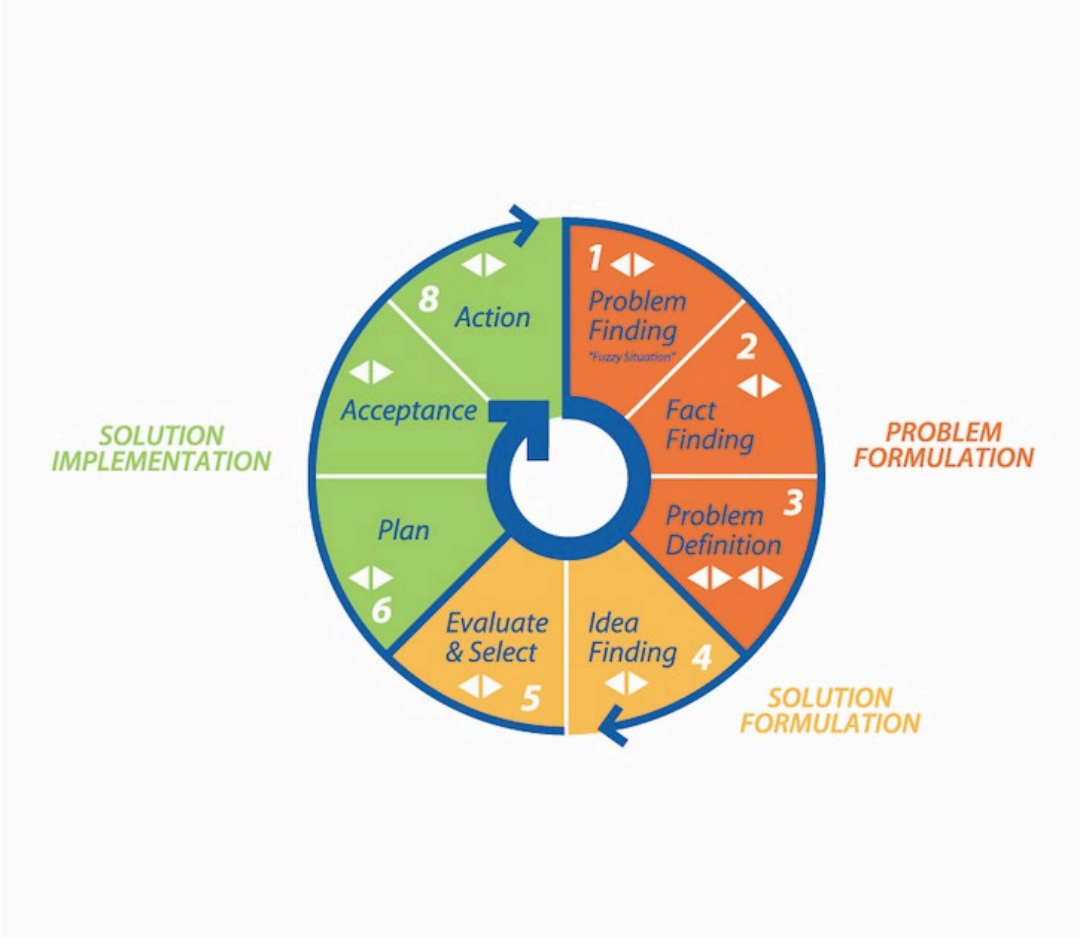
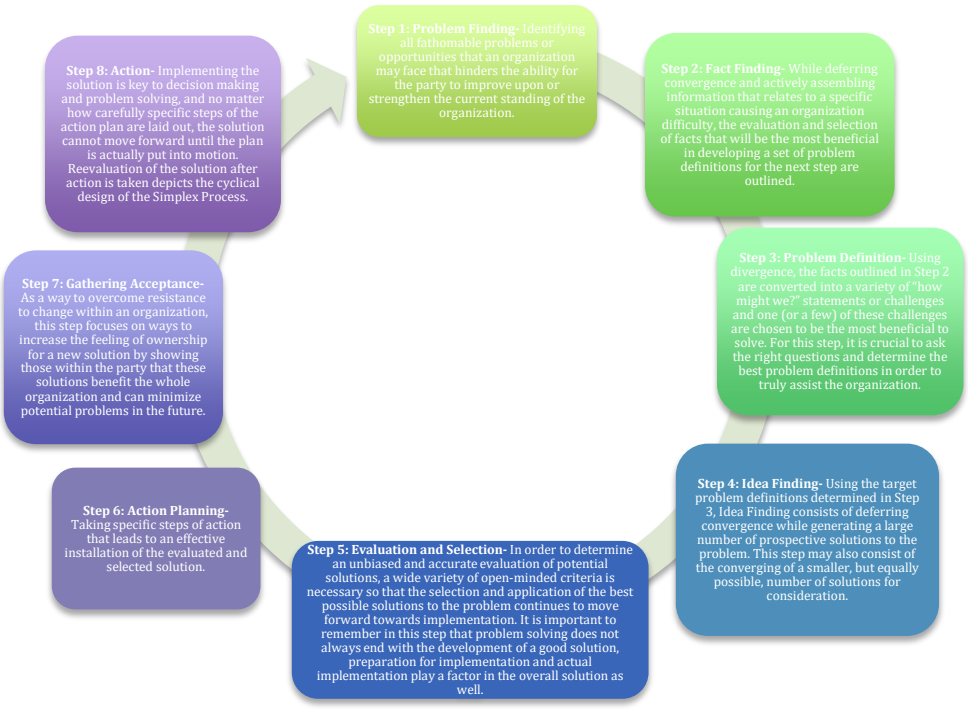

1
Problem Finding
"Fuzzy Situation"
2
Fact Finding
3
Problem Definition
4
Idea Finding
5
Evaluate & Select
6
Plan
8
Action
Acceptance
PROBLEM FORMULATION
SOLUTION FORMULATION
SOLUTION IMPLEMENTATION

Figure 1b.

The eight-steps of the Simplex Process can be divided into three subcategories: Problem Formulation (green), Solution Formulation (blue) and Solution Implementation (purple). The steps within in each individual subcategory can be defined in the following way:



Appendix B

Figure 2. "How might we" statements

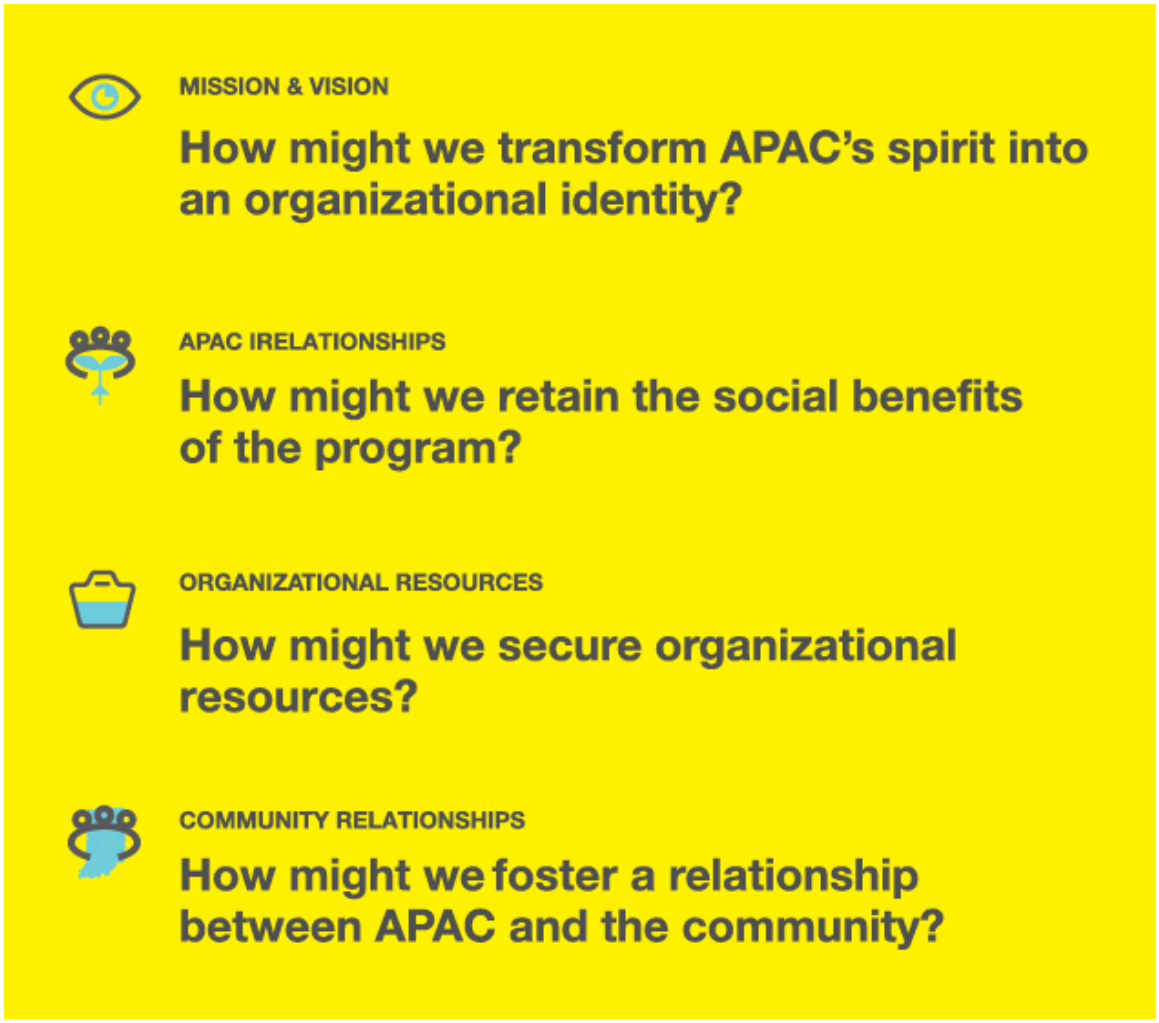


Figure 3. “How might we” statements

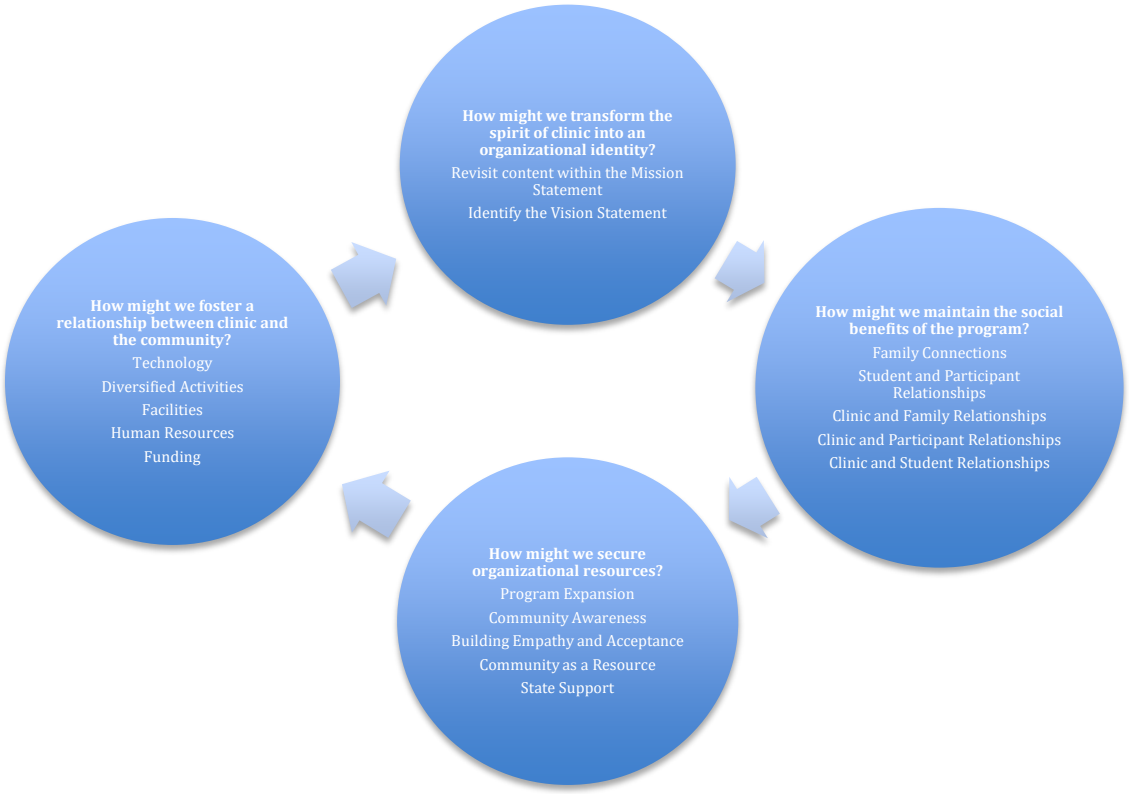


Figure 4. Planning Session

Figure 5. Idea Finding

ADVISORY COUNCIL ENVISIONING SESSION

Reflecting upon the Mission & Vision of APAC

How might we transform APAC's

What does APAC mean to me?

- Family & Friends: APAC is a place for family to come together and a place to make friends.
- Ability: APAC focuses on ability, not disability.
- Opportunities: It is a win-win opportunity for learning and research.
- Exercise: People at APAC engage in motor skill development, sports, and fitness in a fun and relaxed setting.
- Positive emotions: People at APAC feel confident, happy, creative, empathetic, joyful, and passionate.

Who are APAC's community?

- Participants & Families: People with disabilities, parents, caregivers, grandparents, extended family, and friends all care about APAC.
- IUPUI: The people of IUPUI are students, teachers, educators, alumni, faculty, and staff.
- Community: The community at-large, donors, and resource organizations are part of the APAC community.

What does APAC mean to the community?

- Education: It is a learning environment that focuses on individuality and positivity.
- Acceptance: People feel welcome, included, supported, and that they belong.
- Excercise: APAC provides access to excercise and fosters a healthy lifestyle.
- Relationships: It is a unique environment where people thrive and build genuine relationships.

Why does APAC exist?

- Education: APAC provides a hands-on, mutually beneficial teaching and learning experience for participants and students.
- Need: A core group of people had a vision to fill the need to better serve the community of people with
- disabilities.
- Change: APAC is a catalyst for acceptance, inclusion, and positive change.