# DESIGN THINKING METHODS FOR BUSINESS PLAN DEVELOPMENT: A STRUCTURED APPROACH TO IDEA GENERATION THAT PROMOTES CREATIVITY

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## ABSTRACT

*This paper provides six design methods for entrepreneurship educators to utilize with students in university-level entrepreneurship courses during the idea generation phase of the business plan development process. Design thinking not only provides a more structured approach to generating ideas, but it leads to a greater number of ideas to emerge that are more creative and solution-based. This paper presents two design methods for each position on the goods-services continuum depending on whether the business concept is more focused on pure goods, pure services, or hybrid products. The design thinking methods included are called: Attribute Listing, Reversal, A Fresh View, Rich Pictures, Wishful Thinking and What-If Analysis. Each method includes steps for implementation, and all are ideal for traditional classroom time and resource restraints. There are several benefits to using these methods. For example, students do a better job of collaboration, and self-perceptions of their creative thinking abilities increase.*

## INTRODUCTION

The purpose of this paper is to provide entrepreneurship educators with six design thinking methods they can use with students in university-level entrepreneurship courses that develop business plans. The design thinking methods presented provide a structured approach to idea generation that fosters more creativity. This paper provides two design methods for each position on the goods-services continuum. Each design method includes steps for implementation that are suitable for the typical college classroom, given time restraints and available resources. Design thinking methods offer a more creative and solution-based approach to enhance students' abilities to become more effective idea generators.

## LITERATURE REVIEW

Developing business plans is a very common pedagogical method used in university-level entrepreneurship courses and programs. Common goals of these courses and programs include increasing entrepreneurial awareness, developing entrepreneurial skills, cultivating attitudes and intentions, and assisting students in choosing a career (Hills, 1988; Garavan & O'Cinneide, 1994; Autio, Keeley, Klofsten, & Ulfstedt, 1997; Johannisson, Landstom & Rosenberg,1998; Franke & Lüthje, 2004; Liñán, 2008; Schwarz, Wdowiak, Almer-Jarz, & Breitenecker, 2009; Packham, Jones, Miller, Pickernell, & Thomas, 2010; Fretschner & Weber, 2011). Business plans are used in the majority of courses and programs (Honig, 2004) to fulfill

these goals (Youndt, Subamaniam, & Snell, 2004; Fayolle, Gaily, & Lassas-Clerc, 2006). Several universities even provide students with the opportunity to create a real venture as a part of a class, student club, or other programs (Lee, Chang, & Lim, 2005; Rodrigues, Dinis, do Paço, Ferreira, & Raposo, 2012).

Creativity is a trait that has been linked to successful entrepreneurs for decades (Glennon, Albright, & Owens, 1966; Timmons, 1978; Wilken, 1979; Nystrom, 1993; Amabile, 1996; Ward, 2004; Luca & Cazan, 2011) and therefore important for students of entrepreneurship to assess and cultivate (Ward, 2005; Batey & Furnham, 2008).

Creativity is a precursor to innovation. Creative thinking is the act of generating new ideas or conceiving something original. Innovation is the act of implementing those new ideas. Therefore, innovation is the successful exploitation of creativity in profitable outcomes such as new products, services, and processes that create value. Anderson, Potocnik, and Zhou (2014) propose an integrative definition where creativity and innovation together are considered the process, outcomes, and products of attempts to develop and introduce new and improved ways of doing things.

Research outcomes by Berglund and Wennberg (2006) indicate that creativity can be affected by educational efforts. Others suggest that entrepreneurship educational practices that promote divergent thinking and creativity allow students to learn the necessary skills needed in today's business world (Winslow and Solomon, 1987; Gundry and Kickul, 1996). Dyer (2015) contends that creativity is a discipline that begins with learning how to look at situations from multiple angles, removing blinders, and opening possibilities.

Getting students to be creative when generating business plan ideas is a challenge. Most students want to be creative but do not know how to tap into their creative abilities. Design thinking methods are very valuable tools that help them do this. Design thinking refers to creative strategies designers use during the process of designing (Visser, 2006; Brown, 2008). Archer (1965) and Simon (1969) were perhaps the first to use the term 'design' to describe a way of thinking. One of the major benefits of design thinking is that it is considered to be solution-based instead of problem-based (Dorst, 2001).

Glen, Suciu, and Baughn (2014) promote the incorporation of design thinking into the current business school education system, specifically naming entrepreneurship as a subject that calls for the use of design thinking methods. It is a source of business competitiveness that promotes creativity, innovation, and a better understanding of the customer's true needs. By using design thinking methods, students can become more effective at generating ideas focused on solutions rather than problems (Dorst, 2001; Glen, Suciu, & Baughn, 2014).

This paper provides six design thinking methods, unique from each other, that students can use to generate more creative and solution-based ideas for business plans depending on where their business concept falls on the goods-services continuum. The goods-services continuum provides students more focus to determine the relative goods to services composition of their business ideas. It also enables them to identify more opportunities.

There are several classifications of the goods-services continuum in the literature. For example, Vandermerwe and Rada (1988) used three stages: 1) the company is in either a goods or a services business; 2) goods and services are combined in the offerings, and 3) offerings are

complex bundles of goods, services, information, support, and self-service elements. Many others propose different types of classifications (Chase, 1981; Bowen, Siehl & Schneider, 1989; Mathieu, 2001; Davies, 2003; Oliva and Kallenberg, 2003; and Gebauer, 2008). This paper utilizes the continuum proposed by Martin and Horne (1992). Their goods-services continuum provides four positions: 1) pure goods, 2) core goods with accompanying services, 3) core services with accompanying goods, and 4) pure services (See Figure 1).

**Figure 1: The Goods-Services Continuum**

| Pure Goods | Core Goods with Accommodating Services | Core Services with Accommodating Goods | Pure Services |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

Examples of pure goods include canned beverages, shirts, and candles. Examples of pure services include lawn mowing, house cleaning, and teaching. Positions two and three on the continuum are considered hybrid products, which is a combination of both goods and services. The actual position depends on whether there are more goods (2) or more services (3) in the mix. Examples of hybrid products include restaurants, new vehicles, and home repair services where a customer is also purchasing goods such as a new water heater or air conditioning unit.

## DESIGN METHODS

While dozens of design thinking methods exist (see Table 1), the six methods presented in this paper can be conducted easily in a university-level entrepreneurship course given the number of students, classroom setting, resources available, and time required (50-75 minutes). For each position on the goods-services continuum, two design methods are provided, with positions two and three combined.

**Table 1:**
**LIST OF OTHER DESIGN METHODS & BRIEF DESCRIPTION**

| Design Method | Description |
|---|---|
| Convergence Map | Draw a map of converging markets and show emerging opportunities |
| Eras Map | Draw a map that illustrates trends of distinct eras in time to uncover topics of interest |
| Innovation Landscape | Draw a map of an industry's innovations over time |
| Trend Expert Interviews | Conduct interviews with trend experts to learn about potential developments |
| Trends Matrix | Create a matrix that summarizes changing trends and how they might lead to opportunities |
| Popular Media Scan | Read about broad cultural topics in published media such as blogs and magazines |
| Keyword Bibliometrics | Research online publications and databases by searching with keywords of interest |
| Financial Profile | Chart and compare the financial portfolios of leading organizations in an industry or market |
| Interest Group Discussion | Participate in an interest group discussion about key topics of value |
| Human Factor Observation | Observe how current users interact with an existing product |
| People-Environment Study | Observe a situation to see how people interact with their environment |
| Video Ethnography | Video people in their environment over time to reveal new insights |
| Image Sorting | Have people sort through and select images that reveal their thoughts and attitudes on a topic |
| Experience Simulation | Emerge people in a simulated experience to better understand what matters to them |
| Insights Sorting | Create a board that clusters similar ideas from various types of research |
| Descriptive Value Web | Draw a diagram that illustrates how value is created by different entities in an industry |
| Venn Diagram | Create a diagram that shows how different entities and ideas overlap |
| Activity Network | Create a visual structure of stakeholder activities to show their relationship to each other |
| User Journey Map | Draw a map of a product user to show their journey through a context or time period |
| Summary Framework | Design a framework that summarizes key insights from various forms of product analysis |
| Concept Analogies | Generate new ideas by connecting concepts to something that is familiar |
| Role Play Ideation | Try to see another person' point of view by role playing their interaction with s product |
| Concept Scenarios | Illustrate concepts as real-life stories featuring users and their environment |
| Concept Evaluation | Develop a rating system to score concepts according to users, providers, and others |
| Solution Enactment | Act out solutions to problems to demonstrate how they work and create value |
| Solution Database | Organize all concepts and solutions in a searchable database |
| Strategy Roadmap | Draw your plan for innovative soluionts for the short-term, mid-term, and long-term |
| Strategy Workshop | Conduct a workshop for everyone involved to plan for and align ideas and solutions |

For pure goods (position 1), the two methods are called Attribute Listing and Reversal. These two methods are well-suited for goods because goods are objects that tend to have more physical properties than services and are more perceptible to the five senses.

## Attribute Listing

Attribute Listing allows students to take an existing good in the marketplace and redesign it to create something novel. This method provides a focused approach to break the good down into specific parts and prompts different ways to modify or improve each attribute and then recombine them to identify new forms of the good. Steps for implementation are as follows:

1. Identify the existing good you wish to modify or improve.
2. Generate a very detailed list of all of its attributes (e.g., size, weight, function, design, material, color, style, durability).
3. Generate multiple variations of each attribute separately.
4. Combine the new variations of the attributes listed in step three to identify unique approaches for redesigning the good.

5. Discuss the feasibility of developing the alternatives identified in step four and choose the most exciting and feasible idea(s).
   (Morgan, 1993; Smolensky & Kleiner, 1995)

Attribute Listing fits well on the goods side of the continuum because goods are tangible, and tangible items have physical properties that we experience through touch, smell, sight, and other senses. Attribute Listing alone may be the only method needed to generate a good idea for unique and novel goods. However, Reversal is a great method to pair with Attribute Listing.

**Reversal**

Reversal allows students to see a good from an opposite viewpoint. The attributes of the good (from the Attribute Listing method) are stated in opposite terms. Human assumptions structure social reality. When our assumptions change, so does the reality of the situation. Reversal helps students generate novel ideas. Steps for implementation are as follows:

1. Conduct steps one and two from Attribute Listing.
2. Reverse all the attributes of the good by assigning the opposite verb or adjective. For example, a common attribute of games is that they require competitors. A reversed assumption is a game that does not allow competition. Instead, students could generate ideas for a game that requires cooperation.
3. Use the reversal statements to generate novel ideas for new goods. Initially, the ideas do not come forward easily because Reversal completely "flips-the-script" and forces them to think the opposite of what they believe is good or right.
4. Select at least one Reversal statement and completely develop a workable idea around it.
   Mattimore (1995); McFadzean (1999)

Like Attribute Listing, Reveral fits well on the goods side of the continuum because it focuses on the tangible elements of goods that we experience through our senses.

For hybrid products (positions 2 and 3), the two methods are called Fresh View and Rich Pictures. These two methods are well-suited for hybrid products that combine the characteristics of goods and services.

**Fresh View**

This method uses the views of outsiders to provide a fresh perspective on existing combinations of goods and services. The basis for this method is the assumption that the closer a person is to a situation or challenge, the more he or she tends to narrow or specialize his or her thinking. Steps for implementation are as follows:

1. Describe the good/service idea in a very simple way so that anyone can understand it.
2. Provide your description to one or more outsiders who were not involved in developing it. An outsider should have little to no knowledge or experience with the business concept under development.
3. Carefully listen to and record all outsiders' ideas. Ask for clarification when necessary. Do not judge outsiders' ideas as good or bad or dismiss any idea.

4. Review the ideas offered by outsiders. Openly consider each one, because one outsider's view may spark ideas of your own. Even the use of a single word by an outsider may help reframe previous ideas.
5. Revise your original ideas for the good/service by taking the "fresh view" of the outsiders into consideration.
   (Heye, 2006; Michalko, 2006)

An example of success using Fresh View is that of an executive of a major motel chain who took the advice of a sanitation worker to sell pizzas in his motels, which turned out to be a great success (Michalko, 2006). The Fresh View method works well for hybrid products because the combination of goods and services naturally creates complexity. Not everything is clear and tangible. Therefore, the intangible elements are examined more through discussions with others.

**Rich Pictures**

The Rich Pictures method uses drawings and pictures created by the students to describe their ideas for goods and services, allowing their intuitive consciousness to communicate. The process brings forth contextual issues that may go unnoticed, which leads to new insights, more understanding, and new patterns of thinking, which foster more and perhaps better ideas to emerge. Steps for implementation are as follows:

1. Describe a current good/service in the marketplace by writing it in words on a flip chart or white/blackboard.
2. Draw a metaphorical picture of the good/service described in step one. Metaphors such as animals or vehicles are useful. For example, someone might draw a picture of an old, rundown car to illustrate a good/service that he or she believes is outdated or no longer useful.
3. Next, draw a picture of a new and better version of the good/service using the same type of metaphor. Perhaps someone draws a smaller, sleeker, faster car.
4. Share your two pictures with the rest of the students by describing each picture, including the properties, the relationships between them, and the reasons behind the images.
5. As each person shares their pictures, begin to generate ideas for the good/service described in step one.
   McFadzean (1998); Proctor, Hua Tan, and Fuse (2004)

The Rich Pictures method reveals patterns, relationships, and perceptions that may not have otherwise emerged. Rich Pictures also provides more information on 'what is' versus 'what is desired.' Like the Fresh View method, this works well for hybrid products because not everything is clear and tangible. Therefore, the intangible elements are examined more through the drawings and discussions with others.

For pure services (position 4), the two methods are called Wishful Thinking and What-If Analysis. These two methods are well-suited for services because they tend to be more abstract than goods, are naturally immaterial, and are more elusive to the five senses.

**Wishful Thinking**

This design method engages intrinsic motivation. Students discuss their service idea by beginning each sentence with the words, "I wish." Completing these sentences reveals issues that are intrinsically important to them. More insight grows when these deeper thoughts become more widely known. Then, ideas that are central to everyone's true desires begin to emerge. Steps for implementation are as follows:

1. Describe the service idea for the business concept.
2. Form "I wish" statements centered on the service idea. Statements can also begin with words like, "In a perfect world..." or "It would be great if we could...".
3. Begin to extract the practical issues from the more wishful statements. For example, "It seems like everyone is primarily concerned with quality issues surrounding our idea."
4. Move the discussion back to reality and ask more practical questions. For example, "How can we improve the quality of our service idea?"
   Couger, Higgins & Mcintyre (1993); McFadzean (1998)

The process of Wishful Thinking unveils what is really on everyone's minds by having them state things in a more positive "I wish" manner rather than in a negative way by complaining or arguing. Steps three and four bring the discussion back to more practical issues that can be addressed and resolved. This design method works well with service ideas because many elements of intangible services often go unheard and unseen. Wishful thinking encourages people to think more deeply and talk more openly about what needs improvements.

Wishful Thinking and What-If Analysis complement each other. It is often useful to engage in one and then follow up with the other on a different day and in a different setting to see what additional ideas emerge.

**What-If Analysis**

The What-If Analysis method approaches the service idea from a question and answers approach. It is a systematic but loosely structured assessment of the issues surrounding the idea. This method allows students to reflect on existing and similar service businesses and helps them see possible modifications and improvements, which leads to more and better ideas. Steps for implementation are as follows:

1. Describe the service idea and identify its major components. Major components might include quality, price, and speed of delivery.
2. Select one major element at a time and generate What-If questions as hypothetical scenarios. For example, "What if we were able to cut the speed of delivery in half?"
3. As you address each major element, develop new ideas and solutions for improvement. You might not be able to cut the speed of delivery in half, but you will most likely generate ideas on how to reduce the speed of delivery to some degree that will improve the overall idea.
4. Combine the new ideas and solutions to address the overall service idea described in step one. By breaking down the service idea into smaller components, you can generate more ideas and solutions and address issues more comprehensively.
   Michalko (2006); Sloane (2006).

Like Wishful Thinking, this design method works well with service ideas because of the intangibility of service elements, which can go unseen or unheard. What-If Analysis allows deeper issues to emerge, so ideas for improvements can develop.

## DISCUSSION

By using these design methods for business plan development in university-level entrepreneurship courses, the author has observed several benefits for students. They help students: 1) identify a greater number of ideas, 2) generate ideas that are more solution-based as opposed to problem-based; 3) organize and refine their ideas, 4) see patterns and relationships between ideas, 5) transform abstract issues into more concrete ideas, 6) better collaborate with each other in generating ideas, 7) develop better self-perceptions of their creative thinking abilities, and 8) develop more creative and novel ideas.

The first six benefits listed in the previous paragraph are critical, given the common limitations of a typical 16-week undergraduate or graduate course in entrepreneurship. As instructors, we must work with a certain number of students, the constraints of a traditional classroom setting, limited resources, and limited time (length of the class period and the number of weeks in a semester). Table 1 outlined several other design methods. However, many of these methods take more time or must be conducted outside of the classroom. The six design methods presented in this paper offer the eight benefits listed and can be conducted in the classroom and in enough time for students to develop their business plans.

Empirical evidence illustrates benefits 7-8, which helps to justify the use of the six design thinking methods offered in this paper. A 10-item survey asked students to evaluate their own creative thinking abilities on a five-point Likert scale. One example is, “I feel confident I can perform creatively throughout this course.” The highest score possible on the self-perception survey was 50, and the lowest was 10. A pre and post-survey were conducted to determine if exposure to these design methods enhanced self-perceptions of creative thinking abilities. The average pre score was 33.3. The average post-score was 39.8, which is a 6.5 point increase or 19.4%.

Students also completed an online test that measures the following eight metrics of creativity:

- Abstraction - the ability to abstract concepts from ideas
- Connection - ability to make connections between things that don’t initially have an apparent connection
- Perspective - ability to shift one’s perspective on a situation in terms of space, time, and other people
- Curiosity - desire to change or improve things that everyone else accepts as the norm
- Boldness - confidence to push boundaries beyond accepted conventions
- Paradox - ability to simultaneously accept and work with contradictory statements
- Complexity - ability to carry large quantities of information and be able to manipulate and manage the relationships between such information
- Persistence - the ability to force oneself to keep trying to derive more and stronger solutions even when good ones have already been generated

(testmycreativity.com)

Like the self-perception survey, students took the test before they participated in the design thinking methods assignment. They took it again after they completed the assignment. All students' creativity scores improved. The average pre-assignment score was 55.23. The average post-assignment score was 66.53, which is a 20% increase. Figures 2-4 show three examples of a pre and post creativity test of students who participated in the design thinking method assignment.

**Figure 2 - Student A:**

**Pre** **Post**

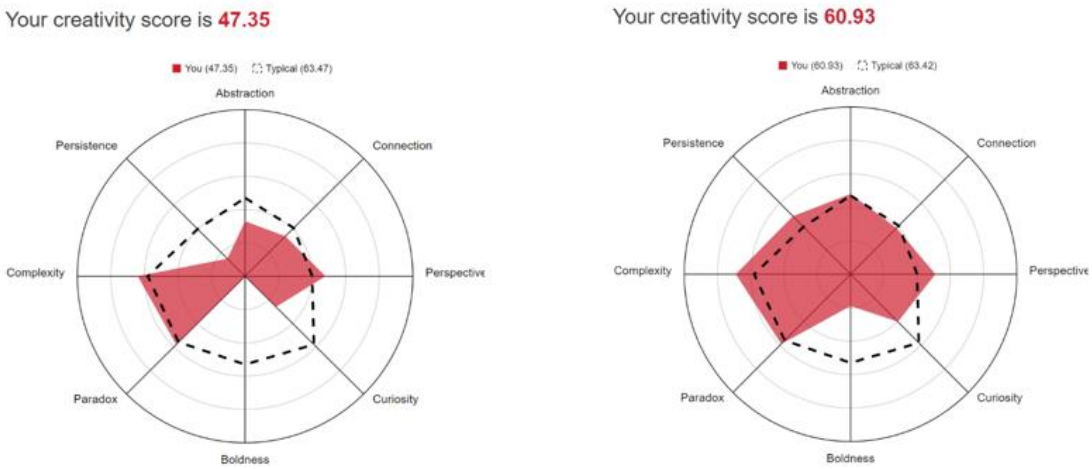



**Figure 3 - Student B:**

**Pre** **Post**

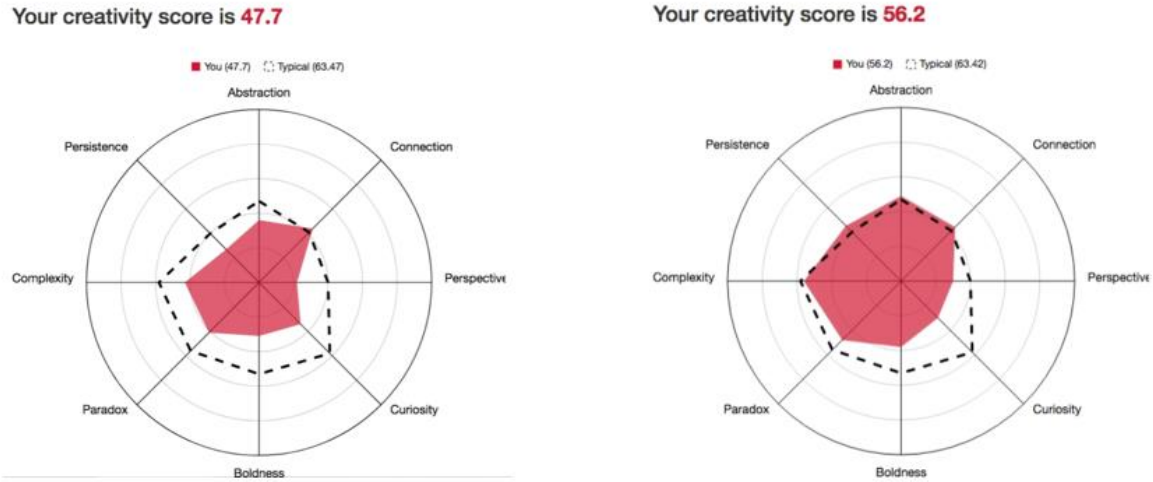
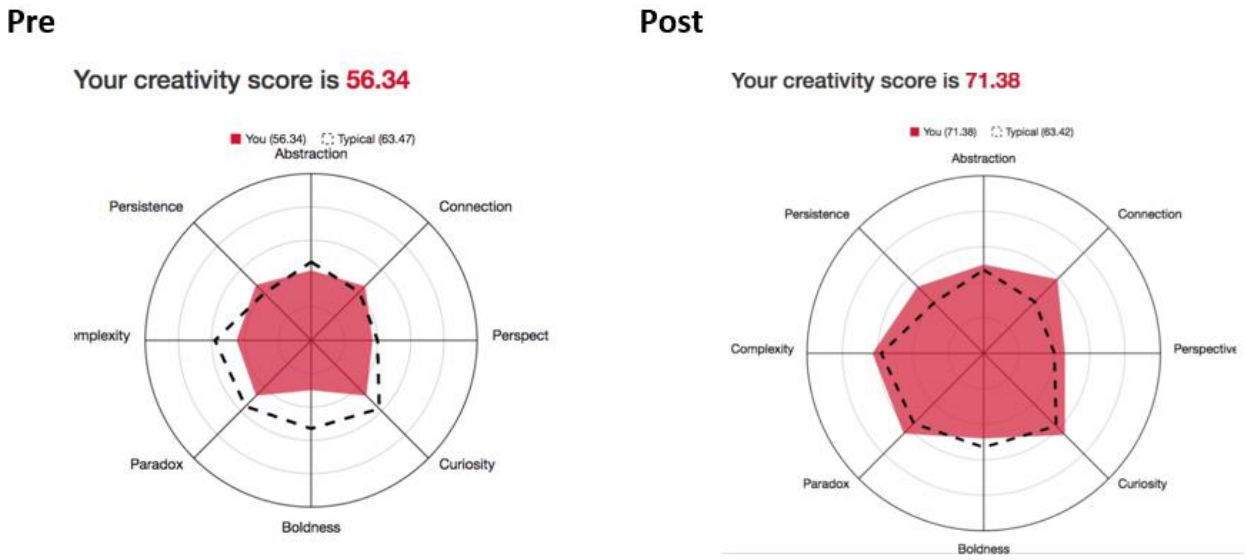


**Figure 4 – Student C:**




One can see that the overall shape of the creativity measures does not change much from pre to post, but it does grow in size. This indicates that using the design methods discussed in this paper helps students develop components of creativity they already demonstrate.

In addition to using all design methods separately for each position on the continuum, students can also combine methods in different positions close to each other on the continuum in cases where they are not sure about the goods and services mix related to their business concept or if they want to explore more or different ideas. For example, if they have an idea for a pure good, they could explore the possibility of providing accompanying services. In this case, they could use Attribute Listing with A Fresh View or Rich Pictures. They could also choose to utilize Reversal with A Fresh View or Rich Pictures. Likewise, if they want to consider accompanying goods for a pure service idea, they can use Wishful Thinking with either A Fresh View or Rich Pictures, or they could use What-If Analysis with A Fresh View or Rich Pictures to generate more and often better ideas.

Students will naturally be more attracted to certain design methods over others, depending on how they think and learn. For example, visual learners usually prefer the Rich Pictures method. It is best to introduce all of the methods to the students and allow them to choose the one(s) they wish to use. Instructors can even engage students in practice exercises, so they have more information and experience using these methods. Some good practice exercises include having students think of ideas on how to improve different aspects of university life such as their textbook, the parking situation at your university, your classroom set-up and resources, social life at your university, the university's website, or fundraising ideas for a student club.

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