# SUSTAINABLE DEVELOPMENT GOALS (SDGs)

## THE 17 GOALS

| 169 | 3516 | 1326 | 6584 |
|---|---|---|---|
| Targets | Events | Publications | Actions |

# https://sdgs.un.org/goals

# SUSTAINABLE DEVELOPMENT GOALS (SDGs)

# ENT101

## Design Thinking

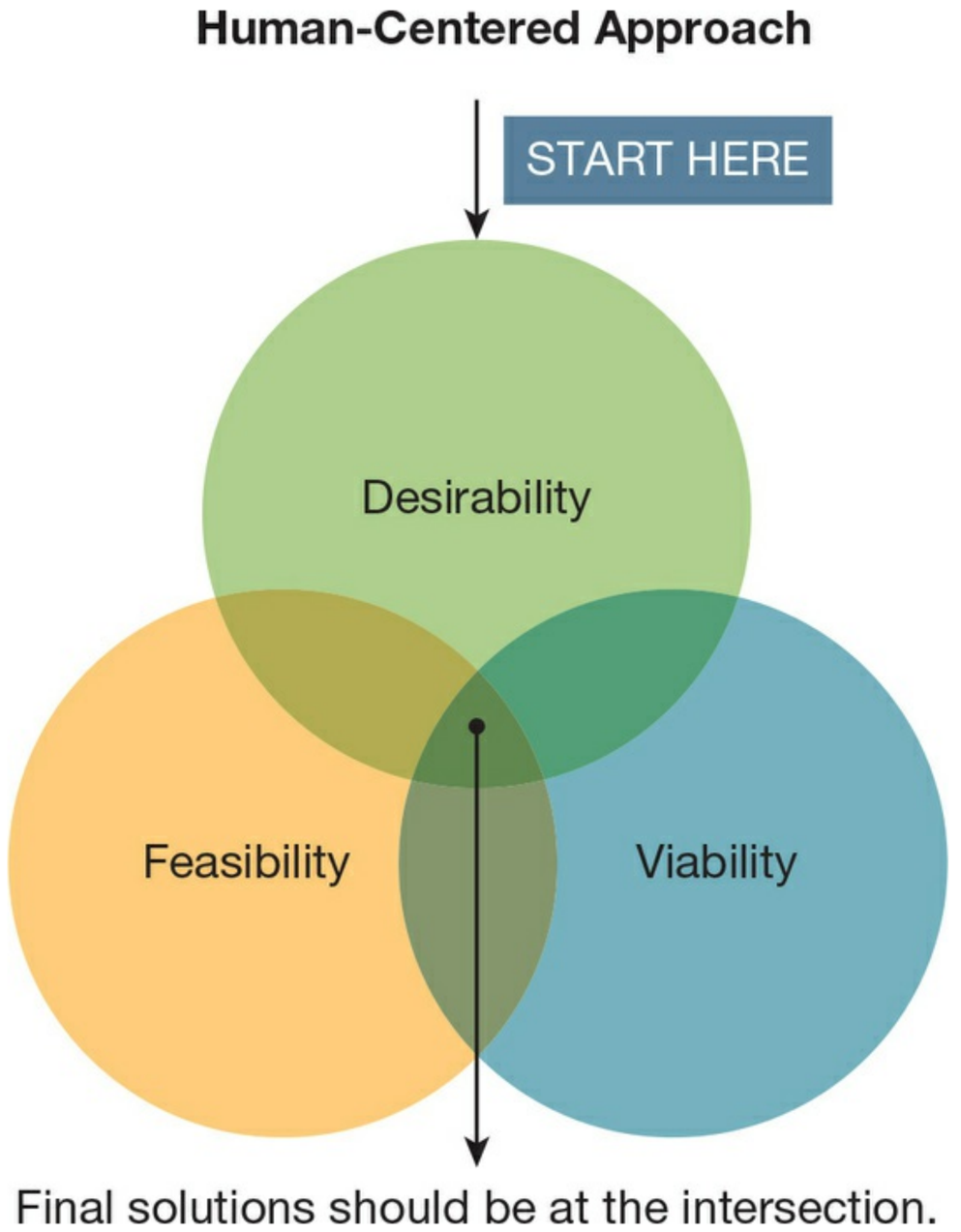
**Design** is a *process of constructive conflict that merges into unifying solutions through the power of observation, synthesis, searching and generating alternatives, critical thinking, feedback, visual representation, creativity, problem solving, and value creation.*

# DESIGN THINKING

a thinking process most commonly used by designers to solve complex problems and navigate uncertain environments.

# HUMAN CENTERED APPROACH OF DESIGN THINKING

- feasibility—what can be possibly achieved in the near future?
- viability—how sustainable is the idea in the long term?
- desirability—who will want to use or buy the product or service?




Source: Image is from Human Centered Design: An Introduction, p. 14. IDEO.

# Empathetic Design Thinking

- Design Thinking is a non-linear model that helps you test your ideas
- Think about it, but also act on it!


Source: https://empathizeit.com/design-thinking-models-stanford-d-school/

# Empathetic Design Thinking

Empathize: Make sure you are considering your potential customers and the challenges they are potentially facing

# Empathetic Design Thinking

Define: To ensure you are thinking about the problem holistically from multiple perspectives, consider alternative vantage points to the challenge you face

# Empathetic Design Thinking

Ideate: Think outside the box for a solution

# Empathetic Design Thinking

Prototype: Create a rough draft of the solution

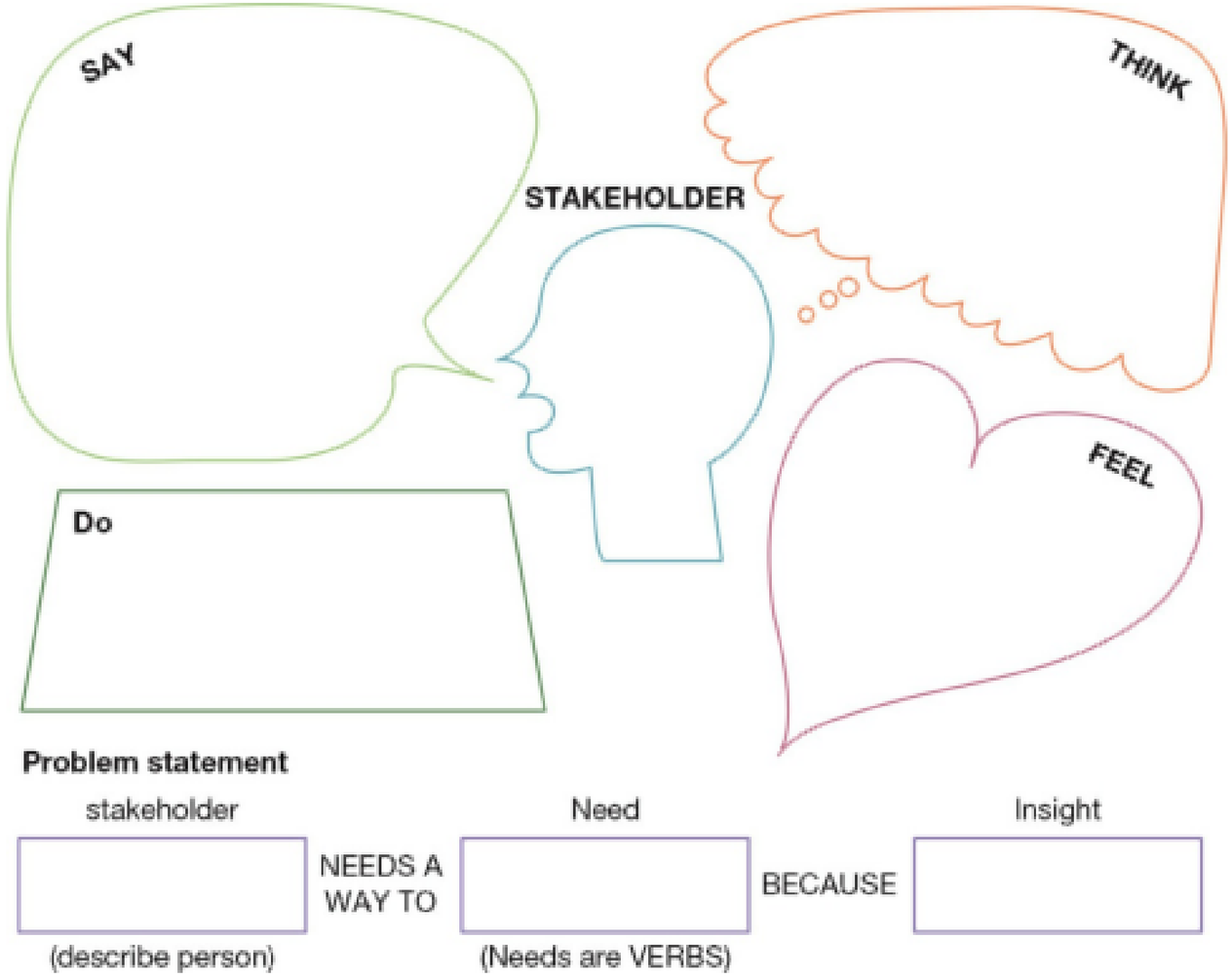
# Empathetic Design Thinking

Test: Try out the prototype and let some of your potential customer group try as well to get feedback

# Empathetic Design Thinking

Assess: Consider the other steps and evaluate if there are any changes needed

# EMPATHY MAP

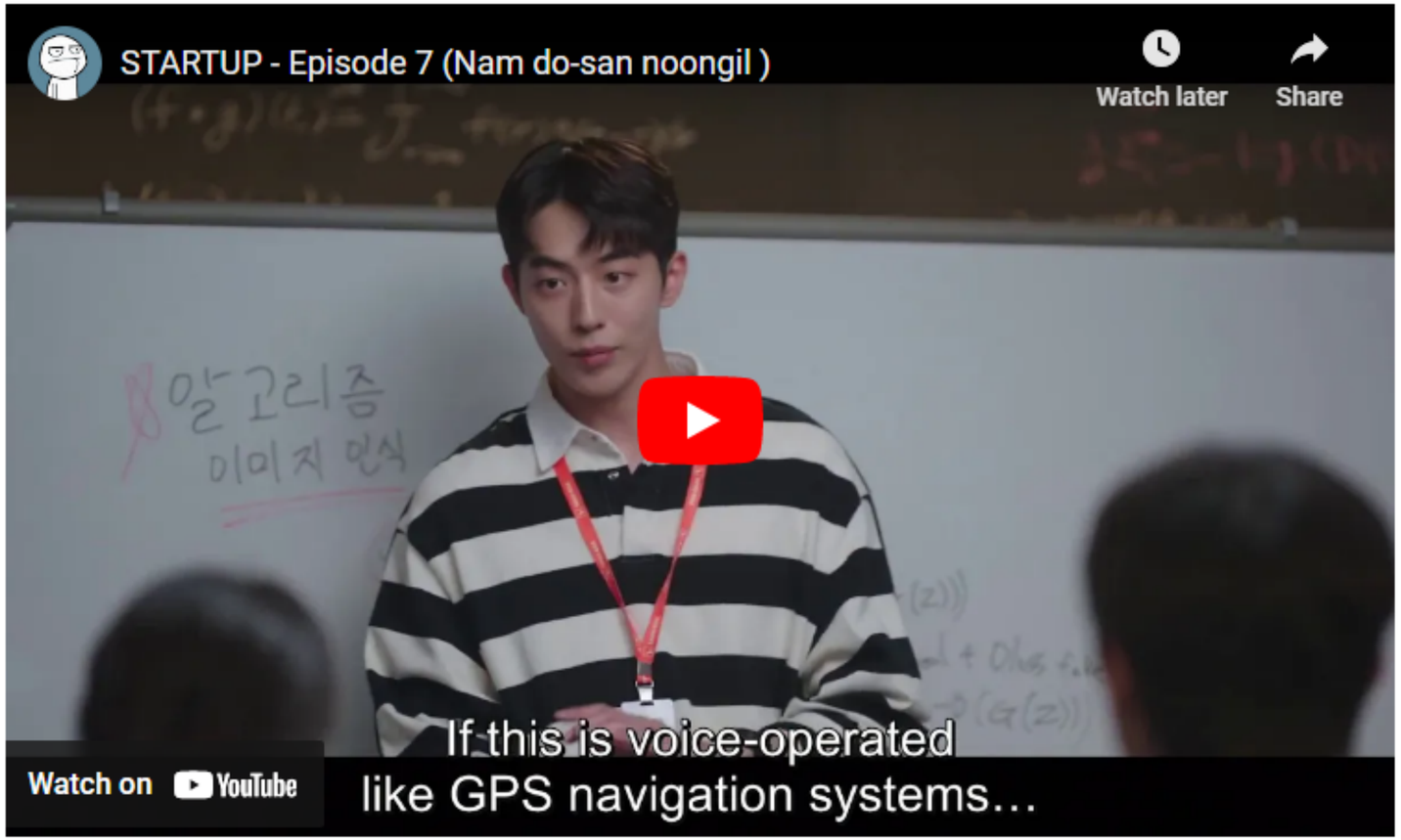



is a tool that helps you collate and integrate your interview data in order to discover surprising or unanticipated insights

Credit: The empathy map worksheet was part of the instructional materials for the Stanford University online course Design Thinking Action Lab, taught by Leticia Britos Cavagnaro in 2013 on the NovoEd platform (https://novoed.com/designthinking/). Credit to David Grey for the original empathy map framework. More context on the use of empathy map as part of a design thinking toolkit can be found at http://dschool.stanford.edu/use-our-methods/

Samsan Tech is real—but not really. The app brainchild of K-drama “Start-Up’s” protagonists for visually-impaired users, NoonGil, is actually a real thing, only it’s called “Be My Eyes.”

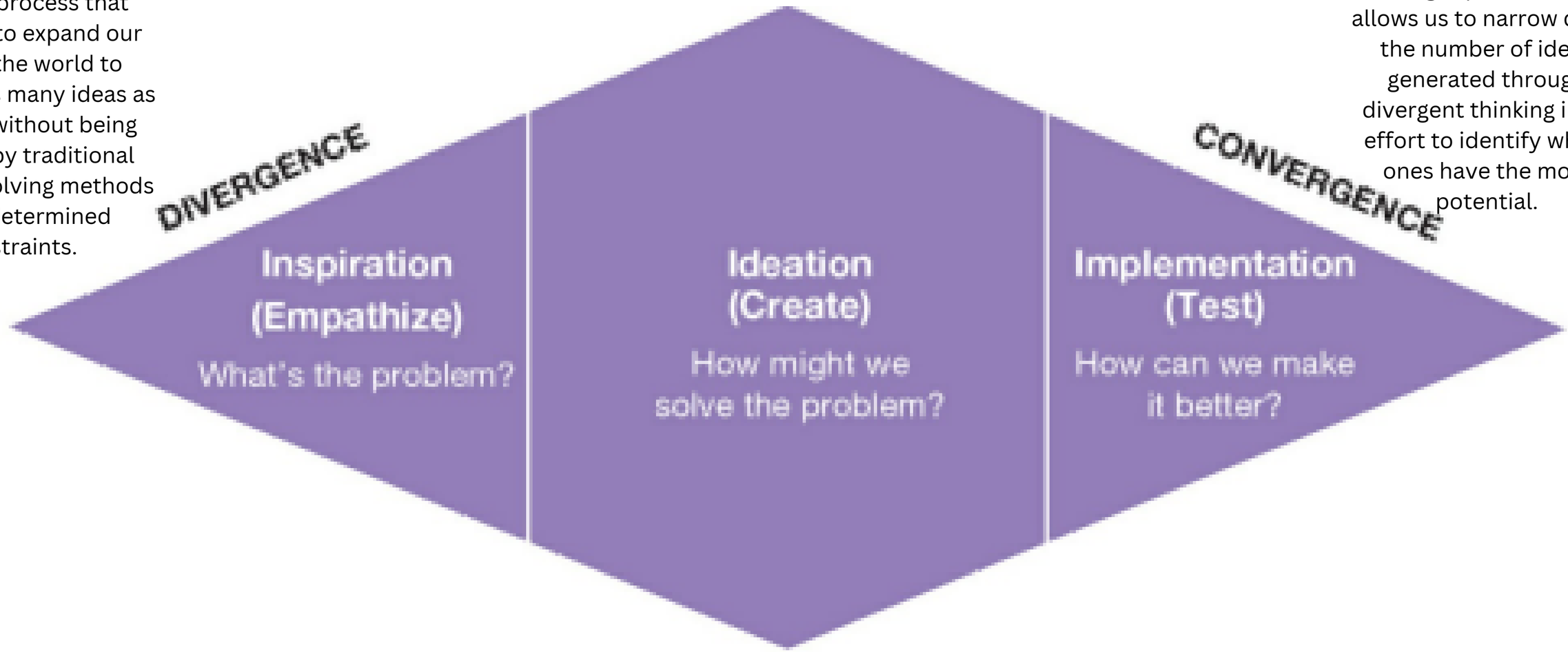
Made by Hans Jorgen Wiberg in 2015, Be My Eyes pretty much follows the same concept as NoonGil, which is to assist the visually impaired in everyday tasks. In the “Start-Up” ’verse, you can point a phone’s camera at an object and it’ll automatically label it, thanks to image recognition tech.




Be My Eyes, however, is a lil’ different from the fictional NoonGil. Instead of relying on AI, the real app counts on sighted volunteers, connecting them to visually-impaired users through video call. Volunteers can help with tasks like checking expiry dates, reading instructions or navigating surroundings.

# The Design-Thinking Process: Inspiration, Ideation, Implementation

**Divergent thinking:** a thought process that allows us to expand our view of the world to generate as many ideas as possible without being trapped by traditional problem-solving methods or predetermined constraints.




**Convergent thinking**: a thought process that allows us to narrow down the number of ideas generated through divergent thinking in an effort to identify which ones have the most potential.

# Inspiration

is the problem or opportunity that stimulates the quest for a solution.

It starts with a broad problem, or what is called a design challenge. A design challenge should not be too narrow, nor should it be too broad.

**EXAMPLE**

- How might we enhance the entrepreneurship education experience of students?
- How might we improve how the elderly live independently?
- How might we redesign how adults learn in virtual worlds?
- How might we reimagine how people get around in a town without cars?

# Ideation

involves generating and developing new ideas based on observations gained during the inspiration process to address latent needs.

## Latent needs

needs we have but don’t know we have

**Table 6.1** IDEO's Brainstorming Rules

| | |
|---|---|
| 1. | Avoid judging others. The whole idea of brainstorming is to make everyone comfortable enough to say whatever springs to mind. Remember, the more ideas out there, the more chance there is of building on those ideas to create the right solution. |
| 2. | Let the creativity flow. Always encourage ideas—no matter how outlandish they may be. Seemingly "crazy" ideas can often give rise to real solutions. |
| 3. | Be open to developing the ideas of others. However unlikely the idea may be, using positive language (use "and" rather than "but"), when investigating an idea can achieve real breakthroughs. |
| 4. | Stay on topic. Keep your attention on the topic being discussed; otherwise you risk exploring different paths that may go far beyond the scale of the project. |
| 5. | Follow the "one at a time" rule. There is more chance of the team developing ideas when full attention is focused on one person speaking at a time. |

| | |
|---|---|
| 6. | Use visuals. Visuals such as sticky notes or rough sketches are powerful ways to get an idea across to an audience. |
| 7. | Generate as many new ideas as possible. Try for up to 100 ideas in an 60-minute session, and then choose the ones worth developing. |

Source: Adapted from http://www.designkit.org/methods/28

# Implementation

a process involving the testing of assumptions of new ideas to continuously shape them into viable opportunities

low-cost experimentation through rapid prototyping, which creates an actual model of the product or service, which is then repeatedly tested for strengths and weaknesses until it leads from the project stage into people's lives.

Prototypes need not be sophisticated or expensive.

# Pathways Toward Observation And Insights

Observation: the action of closely monitoring the behavior and activities of users/potential customers in their own environment

Insight: an interpretation of an observation or a sudden realization that provides us with a new understanding of a human behavior or attitude that results in some sort of action.

**Table 6.2** Nine Dimensions of Observation

| Dimension | Description |
|---|---|
| 1. Space | The physical place or places |
| 2. Actor | The people involved |
| 3. Activity | A set of related acts people do |
| 4. Object | The physical things that are present |
| 5. Act | Single actions that people do |
| 6. Event | A set of related activities that people carry out |
| 7. Time | The sequencing that takes place over time |
| 8. Goal | The things people are trying to accomplish |
| 9. Feeling | The emotions felt and repressed |

**AEIOU framework:** acronym for *Activities*, *Environments*, *Interactions*, *Objects*, and *Users*—a framework commonly used to categorize observations during fieldwork.

**Table 6.3** The Five AEIOU Dimensions

| |
|---|
| ***A**ctivities* – are goal directed sets of actions—pathways toward things that people want to accomplish. What activities and actions do people engage in when carrying out tasks? |
| ***E**nvironments* – include the entire arena where activities take place. What is the function of the individual, shared, and overall space? Taking photographs or drawing sketches of the environment is also a useful way to record environmental cues. |
| ***I**nteractions* – take place between a person and something or someone else. What is the nature of these exchanges? Can you observe what the person enjoys the most or the least? |
| ***O**bjects* – are the building blocks or physical items that people interact with. What are the objects and devices that people use, and how do they relate to their activities? |
| ***U**sers* – are the people whose behaviors, needs, and preferences being observed. What are their goals, values, motivations, roles, prejudices, and relationships? Who are they? |

Source: AEIOU framework. Retrieved from http://help.ethnohub.com/guide/aeiou-framework

# INTERVIEWS

**Figure 6.4** Peel the Onion for Deep Understanding

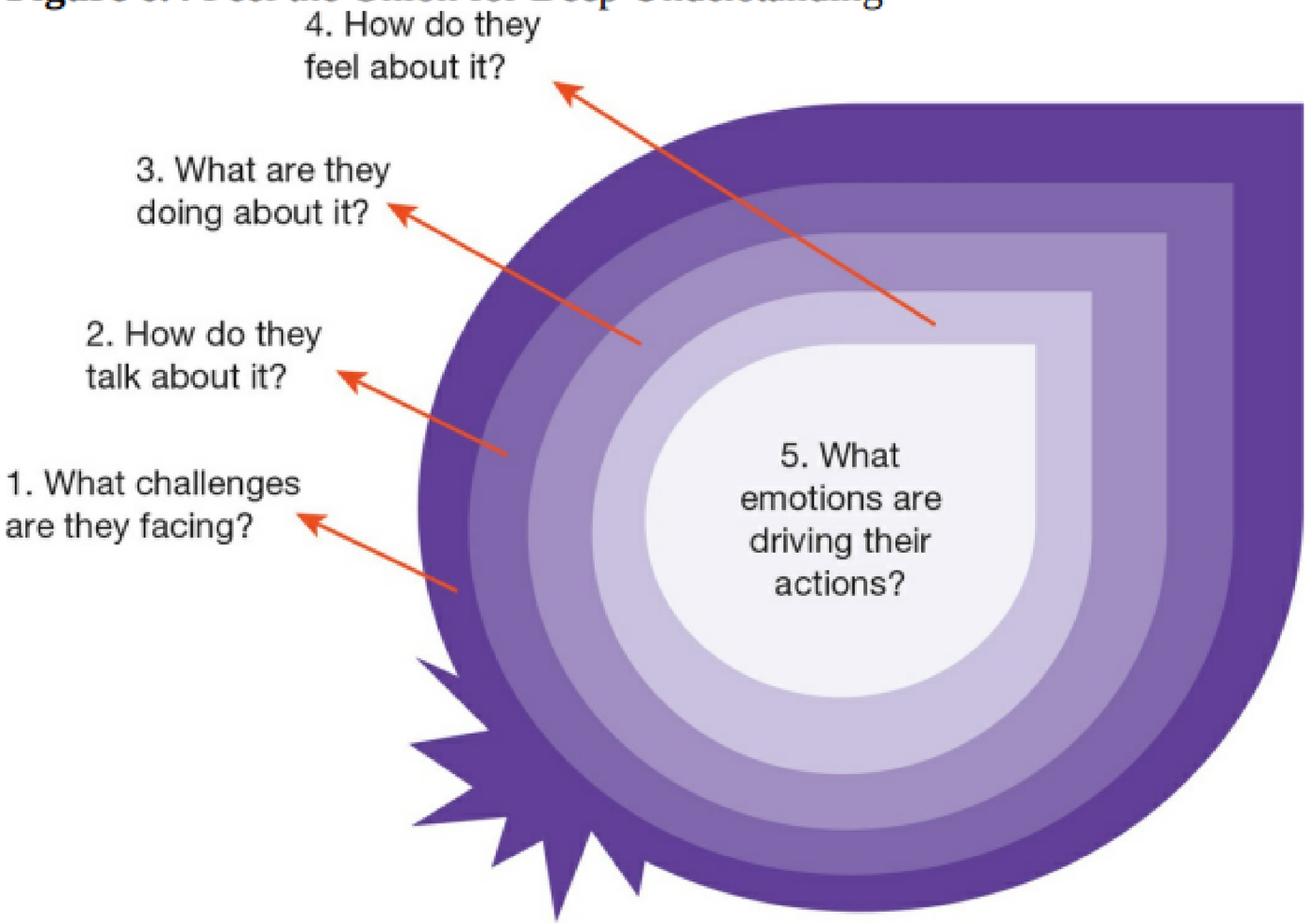


**Figure 6.5** Bad Questions to Avoid and Good Questions to Remember

| Bad Question Reminders | Good Question Reminders |
|---|---|
| **Too Soon:** Asking a stranger for commitment or personal information before it's appropriate in the conversation | **Ask Permission:** Getting the customer's permission to conduct a short interview |
| **Leading:** Making assumptions about your customer that may be false and bringing your own biases into the conversation | **Customer Pain**: While exercising sensitivity, encouraging the customer talking about a problem or pain that they have |
| **Dead End:** Asking questions that can be answered with a "yes" or "no" and don't give your customer a chance to tell you anything meaningful | **Existing Alternatives**: Learning what the customer has tried to do to solve his or her problem in the past |
| **Poor Listener:** Showing that you clearly didn't listen to your customer's earlier responses | **Prioritize Pain**: Clarifying that alleviating the customer's pain is one of your top priorities |
| **Sales Pitch:** Asking your customers if they're interested in a product or service instead of listening and learning about them | **Dig Deep**: Following up a question to learn more |
| **Insulting:** Offending your customer so much that they end the conversation | **Get a Story**: Asking the customer to tell you a story about his or her situation |

Source: Heidi Neck & Anton Yakushin, 2015 VentureBlocks Teaching Note

**Table 6.4** The Stanford Design School Five Phases of Design Thinking

| The Stanford Design School Five Phases of Design Thinking |
| --- |
| • *Empathy* is getting out and talking to your customers directly |
| • *Define* is defining a problem statement from that empathy work |
| • *Ideate* is brainstorming lots of ideas that could help you solve the problem you identified |
| • *Prototype* is building a crude version of the solution that you want to test with users |
| • *Test* is getting out and testing with users |

Source: Hasso Plattner Institute of Design at Stanford. (*n.d.*) *An introduction to design thinking: Process guide.* Retrieved from

# REFERENCES


- Entrepreneurship: How to Start, Grow, and Scale a Business By Jen Riley, Ph.D. and Stuart Draper
- Entrepreneurship: Practice and Mindset by Heidi Neck, Christopher Neck and Emma Murray