Soft Skills Module 11

Strategies for Effective Problem Solving
## Soft Skills Module 11

### Strategies for Effective Problem Solving

<table>
<thead>
<tr>
<th>Summary</th>
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<tr>
<td><strong>Goal:</strong></td>
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<td>Apply simple, effective problem solving approaches to situations.</td>
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<td><strong>SMART Objectives:</strong> Specific, Measurable, Achievable, Realistic, and Time-sensitive</td>
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<td>By the end of this module, students should be able to:</td>
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<tr>
<td>SS11.1: Recognize when a problem exists and identify possible causes.</td>
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<tr>
<td>SS11.2: Create and implement a plan or approach.</td>
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<tr>
<td>SS11.3: Evaluate the outcome and revise as needed.</td>
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### Any Applicable Business and/or Soft Skills?

- Business Skills
  - Setting the Right Price
  - Adhering to Regulatory Requirements
  - Insuring Against Catastrophes

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<th>Corresponding NLS Lesson #</th>
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### Take Away Message(s):

By the end of this module, students should have an improved ability to address different kinds of familiar and unfamiliar problems in both conventional and innovative ways, particularly those problems that might occur as a braille transcriber.
Instructor Preparation

Title of Module: Strategies for Effective Problem Solving

Instructor:

The following is potential introductory remarks as well as relevant context or background information that may be useful for the instructor.

A critical aspect of learning and/or enhancing problem solving skills is the ability to identify and ask the right questions and to have adequate reflection and thought about the responses received to the questions asked.

Solving problems is about clarifying the various known and unknown points of view, both internal (personal) and external (customer, supplier, family, etc.) that then leads to better solutions.

Agenda – topics to be covered in the module and length of each item

<table>
<thead>
<tr>
<th>Topic: Problem Solving</th>
<th>Time Allotted: 1.75 Hours</th>
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<tbody>
<tr>
<td>A. Defining what a problem is</td>
<td>(30 minutes)</td>
</tr>
<tr>
<td>B. Becoming Familiar with Problem Solving Models</td>
<td>(30 minutes)</td>
</tr>
<tr>
<td>C. Problem Solving Activities</td>
<td>(10 minutes each)</td>
</tr>
<tr>
<td>D. Real Life Scenarios</td>
<td>(15-30 minutes each)</td>
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Materials & Supplies – items needed in order to carry out the agenda and classroom activities

2. 13 straws per student (Problem Solving Worksheet Activity, 11.C.1) and 10 straws per student (Problem Solving Worksheet Activity, 11.C.2)
3. Real Life Scenarios
Classroom Preparation – *steps to follow when setting up the learning environment*

1. Students configured to facilitate group discussion as groups of two and three as needed

2. Writing paper and pencils for students

3. Flip chart/pad with markers or board/markers for instructor

4. Document Reader to show the Problem Solving Models and the Activity Worksheets
A. Defining a Problem (30 minutes)

Objective SS11.1: Recognize when a problem exists and identify possible causes.

- **CONTENT PRESENTATION AND LEARNER PARTICIPATION**

  **Note:** Make sure students understand the rules of brainstorming. Use *The Etiquette of Brainstorming (11.A.1)* as a reference.

Brainstorm with students to get their ideas as well as an indicator of level of knowledge by asking the following three questions, one at a time.

Write their responses on the board/flipchart paper.

- “What is a problem?”
- “What are the common causes of problems?”
- “How do you know when a problem is yours or belongs to someone else?”

Next, present the five common ways to respond when a problem exists:

1. Give in to the problem/situation
2. Demand it be solved in your way
3. Ignore the problem/situation
4. Compromise
5. Use your problem solving skills

Generally ask students to reflect on which of the five common ways they tend to use or think they use and then connect to the Problem Solving Skills Models available in section B.

B. Becoming Familiar with Problem Solving Models (30 minutes)

Objective SS11.2: Create and implement a plan or approach.

- **CONTENT PRESENTATION AND LEARNER PARTICIPATION**

There are four models presented; chose two models to present to students that instructors think most closely align with their learning styles and general processing modes.

**Solving a Problem Simply (Funnel Graphic) (11.B.1)**
Problem Solving Made Easy (Three Linear Steps) (11.B.2)

IDEAL Strategy (Word Format and/or Picture Format) (11.B.3)

APIE Model (Word-Visual Imagery Format) (11.B.4)

Note: If instructors have time, they might present all four and have students vote on the two they like best. Ultimately, instructors want to work with just two models as three or four are too many and could overwhelm students.

Have students choose one of the two models for this next activity.

The steps for this activity are:

Think about a problem you experienced sometime in your past (one you are comfortable sharing).

Briefly explain the problem.

Identify the cause of the problem.

Describe the approach you used to solve the problem.

Tell how you selected/choose the approach.

Describe the outcome.

Was the outcome what you expected or wanted? Why or why not?

Now ask students to look at the model they choose and ask them to compare and evaluate:

Does your story match the steps described in Model outline/description?

Did they miss anything?

Did they add anything?

C. Problem Solving Activities (10 minutes)

Objective SS11.2: Create and implement a plan or approach.

CONTENT PRESENTATION AND LEARNER PARTICIPATION
Depending on time available, these activities can be done as a part of the module sequence on the day presented or throughout the week that you are focusing on Problem Solving Skills Strategies.

**Problem Solving Worksheet Activity (11.C.1)**

Give each student 13 straws (full size cut in half or smaller stirrer straws work nicely).

Have students arrange them according to the picture on the worksheet.

Ask students to solve the problem and record their problem solving steps below the picture on the worksheet.

*Answer (remove top middle straw)*

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**Problem Solving Worksheet Activity (11.C.2)**

Give each student 10 straws (full size cut in half or smaller stirrer straws work nicely).

Have students arrange them according to the picture on the worksheet (attached).

Ask students to solve the problem and record their problem solving steps below the picture on the worksheet.

*Answer (remove left bottom and side straws)*

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**D. Real Life Scenarios**

(15-30 min. each)

Objective SS11.2: Create a plan or approach and implement.
Objective SS11.3: Evaluate the outcome and revise as needed.

CONTENT PRESENTATION AND LEARNER PARTICIPATION

Pick one of the scenarios featured at the end of this module (11.D.1) and present it to the students. Ask them to solve the scenario using their chosen model (or a new model if they want to be exposed to different methods). After providing adequate thinking time, ask students what outcome they are looking for and their approach/steps might be to solving the problem and achieving the outcome.

Pick one of the scenarios and have a small group of students role-play the problem. Ask them to do a “think out loud” describing to their peers how/what they are thinking about in their mind as they work to put a problem solving strategy together. Make sure they clearly articulate the problem, identify the outcome desired and role-play specific problem solving steps. The remaining students are asked to be observers and after the role-play is complete, to give open feedback about the methods and thinking processes used.

ASSESSMENT

Giving Feedback – student should always highlight 2-3 positive comments about the process before adding 1-2 areas for improvement.

Instructor:

NOTE: Thinking out loud (above reference to Think Out Loud) requires the instructor to verbalize thoughts that would typically be the “silent thoughts of the mind.” The process of “thinking Out Loud” may need to be modeled by the instructor prior to the students role-playing the scenario using the method. Elements inherent in “Think Out Loud” are:

- making predictions
- describing scenarios and thoughts/images
- applying prior knowledge
- chatting with self about a confusing point
- describing possible approaches or solutions
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Strategies for Effective Problem Solving Handouts
The Etiquette of Brainstorming (11.A.1)

Put off and withhold judgment of ideas
• Do not judge others’ ideas and thoughts.
• Do not suggest that an idea or thought will not work.
• All ideas are potentially good; there is no such thing as a bad idea.
• Avoid discussing ideas, which includes not criticizing and not complimenting ideas.
• Evaluation of ideas takes up valuable brainpower; devote such to idea creation.

Encourage natural and spontaneous thinking
• It is much easier to shape an idea later than to think of a perfect idea first off.
• Think creatively.
• Be innovative.

Quantity at this stage is important
• The more creative ideas to choose from, the better.
• Keep each idea short; do not describe it in detail.
• Think fast, reflect later.
• Go for quantity of ideas at this point; narrow down the list later.

Build on ideas put forward by others
• Build and expand on the ideas of others.
• Use others’ ideas as inspiration for your own.
• Explore new possibilities.

Every student and every idea has equal worth
• Every student has a valid viewpoint and a unique perspective.
• Participate, even if you write ideas on a piece of paper and hand it to the instructor.
• Each idea presented belongs to the group, not to the student stating it.
• All participants should feel able to contribute freely and confidently.

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11.A.1
Solving a Problem Simply (11.B.1)

1. Identify Problem
2. Understand Problem
3. Make a Realistic Plan

4. Carry Out the Plan

5. Look Back & Evaluate
Outline your process following the above steps . . .
IDEAL

Problem Solving Strategy (11.B.3)

I = Identify problem
D = Describe problem
E = Explore possible solution
A = Act on solution chosen
L = Look back & evaluate

Lesson 11.B.3

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APIE Problem Solving Model

A - Assess situation

P - Plan approach
   Include desired outcome
   (what does success look like?)

I - Implement plan

E - Evaluate
   Did I get desired outcome?
Problem Solving Worksheet #1 (11.C.1)

Arrange the 13 straws to make four equal sized squares like the figure below. Remove only ONE straw and make three equal-sized squares.

As you try to solve this problem, what you are thinking? Write it down. What are you thinking? Your mind is doing something to solve the problem – what is it? Make notes below...

11.C.1
Problem Solving Worksheet #2 (11.C.2)

Arrange the 10 straws to make two equal sized squares like the figure below. Remove TWO straws and make three equal-sized squares.

As you try to solve this problem, what are you thinking? Write it down. What are you thinking? Your mind is doing something to solve the problem – what is it? Make notes below…

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

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________________________________________________________________________
Real Life Scenarios (11.D.1)

1. As a new braille transcriber, you need a braille agency contact sheet that will have contacts for resources and possible employers, such as AMAC or NBP. Using one of the Problem Solving Models, describe a plan to solve this problem.

2. You have made contact with the American Printing House for the Blind who wants you to submit a portfolio with graphics as a part of your contents. This will give you contract labor opportunities. While you have done the type of work they are asking to see you do not have any examples because you were not allowed to carry work created in prison outside. At this point in time you do not have access to the equipment (Perkins Braille Writer, etc.) that you need to create tactile graphics. Using one of the Problem Solving Models, describe a plan to solve this problem.

3. You have located a few jobs through organizations but need to fill out a vendor profile. The profile is done on-line via the internet. You have tried twice, only to time-out both times. You also need to complete a bid packet (required by state agencies) listing how much you will charge per page. If your bid packet is accepted you will receive an award letter and an outsource agreement which you need to review and sign. That means you will be liable for work you have agreed to do and if it is not properly completed within a set time frame the agency may end up spending more money having it reproduced by another vendor – a loss of work for you. Using one of the Problem Solving Models, describe a plan to solve this problem.

4. You are trying to adjust to the electronics and technology needed to operate your microenterprise. In the prison setting internet access was not available and there were limitations in the amount of technology training and familiarity you received while incarcerated. Using one of the Problem Solving Models, describe a plan to solve this problem.

5. You need to obtain valid identification (social security card, birth certificate, driver's license or identification card). Using one of the Problem Solving Models, describe a plan to solve this problem.

Lesson 11.D.1
Real Life Scenarios (11.D.1 cont.)

6. The Prison Braille Forum in Louisville is coming up in a couple months. This conference will be a great source of networking and updated information. It is critical you be able to attend. However, you have significant restrictions on your travel/movement abilities while on parole. Using one of the Problem Solving Models, describe a plan to solve this problem.

7. It’s tax time and you need to complete your taxes; you have all these 1099s but you have no earthly idea what to do. Using one of the Problem Solving Models, describe a plan to solve this problem.

8. You have had a difficult time acquiring the necessary equipment to keep your microenterprise going. Your resources and money are still in short supply. You think you heard about an equipment lending library and some other resources. You are also wondering if you should apply for a small business loan. Using one of the Problem Solving Models, describe a plan to solve this problem.