

## **Instruction Working Title:** *Your toilet is clogged, what now?*

### **Topic**

This instructional design will enable adults with no prior knowledge of plumbing or the mechanics of a standard home-use toilet to clear certain common obstructions which prevent a complete and clean flush of waste, within a relatively short time and without generating a disastrous mess. The learning will include some information on how to avoid a clog before it occurs.

### **Theory**

The design of this instructional system will rely primarily on the information-processing model of cognitive learning theory. The focus is on the construction of schema in the learner's mind through the context of pictures, words, audio and video, which will be interdependent and reinforce the learning for effective retention of the information. Learning will be completed by the learner's actual performance of the steps, and feedback will occur with the success or failure to achieve the task objective. Further feedback will be prompted through a brief series of Likert scale questions and a comment feature which will allow the learner to ask questions or provide comments in an asynchronous manner.

### **Problem**

In much of the developed countries today, people take for granted the process of human waste disposal. Few people give toilet use a second thought until the mechanism fails to operate correctly. When failure occurs, the user comes to appreciate all too well the value of indoor plumbing and the toilet in particular. The toilet system is actually more complicated than it appears at first glance. Users who do not understand the proper way to clear a toilet clog could permanently damage the equipment, resulting in messy cleanup and expensive repairs or replacement.

### **Audience**

Worldwide, there are a variety of human waste disposal mechanisms designed for home or commercial use. The instructional system designed here will be tailored for users of home toilets in North America, who have no prior experience with plumbing or water pressure. While there are different brands and models of toilets in place in North American households, they share essential design features for purposes of this instruction.

### **Purpose**

The purpose of the instruction is to create in the learner an understanding of how the toilet works, and how it can be unclogged and used without damage. After completing the instruction, the learner will have internalized the knowledge required to clear toilet clogs, and therefore will be able to perform the activity in the future without constant reference back to step-by-step instruction. The

learner will also be able to recognize when the problem requires special handling by a professional plumber.

### **Format**

This design uses only text, hypertext, and visual images, and will not include audio or video.

### **General learning expectations**

The learner will be able to unclog a toilet in common situations, will understand why toilet clogs occur and how they can be avoided, and will know when the clog is of a nature that requires the attention of a plumber who has specialized skills, experience, and tools for the job.

### **Learning goals and objectives**

At the end of this instruction, students will be able to successfully:

G.1. Clear simple toilet clogs without damaging the toilet.

*O.1. Learners will be able to choose the correct tools and materials to unclog the toilet.*

*O.2. Learners will be able to organize the toilet area to prevent unnecessary mess.*

*O.3. Learners will be able to utilize the valve which shuts off and turns on the water supply.*

*O.4. Learners will be able to construct and utilize the proper liquid solution to clear the clog.*

*O.5. Learners will be able to utilize a plunger to clear the clog.*

*O.6. Learners will be able to identify when the services of a professional plumber are required.*

*O.7. Learners will be able to identify materials which can cause clogs if disposed of in the toilet.*

### **Learning Activities**

- 1. The learner's experience will begin by viewing text and still visual images. The text will include hypertext to facilitate navigation within the instruction set. No audio, video, or other instructional materials will be available.*
- 2. The learner will view examples of objects which must not be disposed via a toilet. The examples will be chosen so that the learner will be able to generalize as to prohibited materials.*

3. *The learner will gather the tools and materials which may be necessary to clear the clog, based on viewing the associated information provided in the instruction. Not every clog will require the use of all the tools and materials.*
4. *The learner will perform the actions provided in the instruction. Not all actions will be required to clear every clog.*
5. *The learner will comment on the success or failure of the operation by answering the Likert scale survey and using the comment/questions feature.*
6. *As part of the survey, the instructor will be asked whether the learner feels confident in clearing clogs in the future without further reference to the instructions. This will be an indication of the degree of learner's retention.*
7. *The instructor will evaluate whether changes to the instruction are required to improve the learner's retention of the information.*

### **Completion outcomes**

The main outcomes of the instruction include:

1. Proper method to shut off water supply
2. Successful and complete toilet flush
3. Ability to minimize future clog incidents
4. Recognition of situations requiring professional assistance (plumber)

### **Technology required**

Learners will have access to a computer, tablet, or smartphone, with internet access. Learner must not be visually impaired. Learners will also need access to tight spaces, so they need to be physically able to bend down and reach without difficulties. They also need to be able to carry a bucket with up to 4 gallons of water.

### **Timeline**

Because there are required wait times within the clog removal process, duration of the initial instruction may take over thirty minutes. However, elapsed viewing time should be less than 15 minutes.

## Assessment

### Rubric for Toilet Clog Project *Materials, Job Aid, Design Document Feedback*

Student:

	<i>Total</i>
Learner has identified types of materials that cannot be disposed of in a toilet	<b>/20</b>
Learner has gathered the proper tools and materials that may be required to unclog the toilet	<b>/15</b>
Learner has recognized the difference between a partial clog and a complete clog	<b>/5</b>
Learner has demonstrated the liquid solution method, and the plunger method.	<b>/35</b>
Learner has safely turned the water supply off and on	<b>/10</b>
Learner demonstrates knowledge of situations requiring the services of a professional plumber	<b>/15</b>
Total points	<b>/100</b>

## Evaluation

*Formative:*

Do you feel you have learned the proper method to clear a clogged toilet? Do you feel you understand how to avoid future clogs? Can you recognize when to call for the services of a professional plumber?

Were the directions appropriate?

Did the visual information enable you to understand the process or did you need improved graphics or other visuals?

What could be improved in the instruction to help you learn better?

*Summative:*

At the conclusion of the instruction, did you feel confident that you could clear future toilet clogs without further instruction or assistance? Do you have a better idea of how a toilet can be damaged by misuse, or by mishandling during clog

removal? Will you know when a plumber is required to restore your toilet to working condition? Is there any other related information you want to learn?