

Usability Test Plan

Instructions for Three Cup Glass Handle Chemex and Unfolded Half Moon Bonded Filters

XXXXXXX XXXXXX | Chemex Corp | October 5, 2016

Contents

Purpose	2
Objectives.....	2
Efficiency	2
Effectiveness	3
Engagement	3
Errors.....	3
Ease of learning.....	3
Methodology.....	3
Test Participant Characteristics.....	3
Environment and Equipment	4
Procedure.....	5
Pre-test session	5
Test session	5
Post-test session	7
Metrics	7
Qualitative	7
Quantitative	7
Deliverables.....	7

Purpose

This document describes the plan for conducting a summative usability test of the Three Cup Glass Handle Chemex and Unfolded Half Moon Bonded Filters instructions. These instructions ship with the Three Cup Glass Handle Chemex product as a printed box insert, and provide information on how to use the Chemex and filters to brew pour-over coffee. Initial inquiry tests in the form of informal field observations have revealed that the instructions in the product insert play a central role in users' first-time experience, perhaps due to the lack of signifiers of what actions are possible beyond the glass handle on the Chemex. To better attend the psychomotor needs of the users of these products, a redesign of the current instructions is necessary. However, this also necessitates a more definitive evaluation of the current instructions' usability. This usability test will provide qualitative and quantitative data to help the instructional designer better understand Chemex users' first-time experience with using the product-insert instructions to brew coffee.

Objectives

The goals of this usability test includes identifying potential concerns in what Quesenberry calls "the 5Es": end-user efficiency, effectiveness, engagement, errors, and ease of learning. The results of testing the 5Es will inform the future redesign of the instructions. This test will also establish a baseline of user performance with the current instructions and establish user performance measures for use in future tests of the redesign. To address these goals, I will assess the users' overall experience with brewing the coffee as well as their satisfaction with using the instructions in the process. The usability test objectives are:

Efficiency

- Are users aware that instructions are available in the insert? How long does it take for users to find the instructions in the insert?
- Can users clearly follow the steps in the instructions? Do users complete the steps in a different order than listed in the instructions? Are the steps listed in a different order than the users expect?
- Can users find the information they need in the instructions? Can they locate their place after they return to the instructions?
- How long does it take users to complete a step or task using the instructions?
- How many times must users switch attention between the insert and the task?

Effectiveness

- Do users understand the content of the instructions; i.e., what action they are supposed to complete?
- Can users successfully complete a task? The entire procedure (brewing a cup of coffee)?
- Are users sure that a task is complete?

Engagement

- Do users rate their overall experience as satisfying and enjoyable? Do users rate their use of the instructions as satisfying and enjoyable?
- Do users' comments and body language indicate a positive experience?

Errors

- How many errors do users experience?
- How do users check to determine whether they have completed a step correctly? If they check, is their evaluation correct (i.e., do they accurately determine they have completed a step correctly or incorrectly)?
- If users make errors, are they able to correct their error? What method do they use? How long does this take?

Ease of learning

Testing this goal would require running second or even third rounds of usability tests days or weeks after the first usability test. While this could produce excellent information on whether the use of the instructions in the first-time experience supports memory of the process in subsequent experiences, the time and resources required are beyond the scope of the current usability test. This goal will hopefully be addressed in a future study.

Methodology

Test Participant Characteristics

At least five participants will take part in the usability test. Because user motivation can greatly affect the attitude with which users approach an activity, the primary criterion for selecting participants is their preference for drinking coffee. Next, users must already be making coffee at home (as opposed to only buying coffee) or interested in making coffee at home, but because the goal is to test users' first-time experiences, participants must have no prior experience with using a Chemex to do so. Besides a middle

school level reading proficiency, age, gender, education, language, and other related demographic characteristics are not critical for selection, but a good mix of these characteristics among users is preferable. So, to recruit perspective test participants who represent Chemex's actual users, I have identified a primary subgroup with the following characteristics:

- Drinks coffee
- Makes coffee at home or is interested in making coffee at home
- Has no experience with using a Chemex
- Has a kitchen with a stove and knows how to boil water
- Reads at or above a middle school reading level
- Mix of male and female

Given there are few specific characteristic requirements, participants will be recruited from my friends and family according to these characteristics in a screener (forthcoming).

Environment and Equipment

The usability test will be conducted in each participant's residence in his/her kitchen area. This testing location ensures participants are comfortable in their own space, and most closely simulates how users would use the product. Additionally, using the Chemex requires boiling water. This test is not intended to assess the usability of a particular stovetop, but to determine how participants use the Chemex in their home environment, so using their own stoves is preferable. The additional equipment required includes:

From participant's environment:

- Water (filtered or tap)
- Trashcan or compost bin

From participant's environment or provided by me:

- Kettle or pot for boiling water
- Mug
- Ground coffee
- Measuring spoon

Provided by me:

- Three Cup Glass Handle Chemex

- One Unfolded Half Moon Bonded Filter
- Chemex printed product insert (instructions inside)

Procedure

Pre-test session

Once participants are selected and before they participate in the test, I will contact them individually to arrange a time to administer the test. Tests will take approximately one hour in total. Because tests will take place in each participant's home, these tests may take place over several days.

The participants will also be sent a pre-test questionnaire (forthcoming) via email before the test to survey them for various characteristics, including:

- Preference for instructional format (print, online, mobile, etc.)
- Degree of natural use of instructional material and confidence in helpfulness of instructional material
- Degree of familiarity with other coffee brewing machines and methods

Test session

I will be administering the tests and will be the sole observer. Before the test begins, I will brief each participant with information of what the test will consist of according to a prepared script (forthcoming). This will include such points as stating the purpose of the study, reminding them that the instructions/product are being tested, not them, encouraging them to think aloud throughout the process, and asking for any concerns or questions.

Because I will be administering the test and that test sessions will likely not take place back-to-back, I will be using two video cameras to record participants and will be reviewing the tape directly afterwards to log observations. One camera will record the participants' front to capture their facial expressions and body language. The other camera will record the participants' hands and the equipment to capture their movements and actions. Additionally, I will be sitting or standing behind wherever the participant chooses to stand, recording other metrics like task completion time, number of errors, completion rate, attention switches between task and instructions, optimal or preferred path, and others.

Tasks

Given that the instructions are already completed and are in circulation, this usability test will be a summative benchmarking test in which metrics for the instructions will be established and requirements

for new instructional design will be collected. As such, the tasks themselves are outlined in the instructions themselves, and there will be no pausing between tasks as the participants work through them. Besides the first task, the other tasks will not be read to the participants; they will only read the instruction steps. For analysis purposes, the general tasks are listed in the table below.

Task 1 is listed here: Take a moment to look at the Chemex and filter without reading the product insert. Then tell me: What do you think you would do with these items? How do you think you might use them to brew coffee? What are the steps you might take to do so?

Task #	Corresponding instructions step	Task	Required to perform	Success criteria
2	3 'Tip' 4 'Optional Tip' 4	Boil enough water for one cup of coffee	Either fill Chemex or mug with water and pour water into kettle or pot, or fill kettle with water directly; Place kettle on stovetop; Turn stovetop on; Turn stovetop off; Remove kettle from heat	Water is at a rolling boil
3	2	Fold the filter	Pick up filter; Fold down filter tab; Bring corners of half circle together and crease the fold; Bring edges of quarter circle together and crease the fold	Filter is a flat, four-layer triangle shape
4	2	Place the filter in the Chemex	Pick up filter; Expand triangle into a cone; Set in top chamber	Filter is open, in the top chamber, and three-layer side is against spout
5	2 'Optional Tip'	Dampen the filter	Pick up Chemex; Turn on water from sink; Dampen the filter; Let water drain through filter into bottom chamber; Pour water out of Chemex while keeping filter sealed against top chamber wall; Set down Chemex	Filter is damp; no water is in the bottom chamber
6	3	Add coffee grounds to the filter	Pick up coffee and measuring spoon; Determine coffee-to-cup-size conversion; Scoop coffee; Put coffee in filter	At least 1 rounded tbsp of coffee grounds is in filter
7	4	Wet the coffee grounds	Pick up kettle; Pour a small amount of water over the coffee grounds; Set down kettle; Wait 30 seconds	Coffee grounds are wet and sit for 30 seconds
8	5 6	Pour the water over the grounds	Pick up kettle; Slowly pour water evenly over the grounds; Repeat as needed; Set down kettle	Water does not overflow the top chamber edge; drip brewing is continuous
9	7	Throw away the filter	Lift filter by edges from top chamber; Throw away in trashcan or compost	Filter is no longer in top chamber
10	8	Pour coffee into mug	Pick up Chemex; Pour coffee into mug	Coffee is in mug

Post-test session

After the test session is complete and the participant is (hopefully!) enjoying a nice cup of coffee, the participant will be asked to complete a post-test questionnaire (forthcoming). This questionnaire will combine quantitative and qualitative measures by combining a modified CSUQ scale with an interview. The participant will be asked to assess their experience using the instructions according to a variety of attributes by rating their impressions on a 7-point Likert scale. Then, the participant will be verbally asked to explain the reasoning or feeling his/her responses and to provide examples that demonstrate their answers.

Metrics

Qualitative

Test observations: Observation logs from camera recordings, including verbal comments and quotes, descriptions of their actions, and nonverbal actions and gestures.

Impressions: Details from post-test interview, including participant quotes, comments, and suggestions.

Quantitative

Performance data: Metrics from test, including task completion time, number of errors, completion rate, attention switches between task and instructions, and optimal or preferred path.

Preference data: Scores from CSUQ post-test questionnaire.

Deliverables

The Usability Test Report will be provided at the conclusion of the usability test. It will consist of a written report detailing the test findings, interpreting the findings as specific usability problems, and providing recommendations for resolution of usability problems and next steps for study.