Exercise 3-3b Practice in Measurement Critique

In this exercise, we'll review some imaginary measures and critique them in terms of the validity and reliability ideas in Chapter 3, "The Theory of Measurement." First, you'll read a description of the construct and measure and then be asked to respond to a series of critical questions about the measure.

Construct: Quality of Virtual Life

Quality of life is a construct that is relevant to many fields. Public policy analysts, sociologists, and economists want to measure it at the level of the community, state, or nation. Physicians, nurses, and patients want to pay attention to quality of life in medical treatment. Psychologists and psychiatrists want to understand it at both of these levels and in terms of the individual's experience. People seem to agree that it is important but are not exactly in agreement about how to define or measure the construct. One area that no one has yet explored is quality of life when life is experienced virtually via the computer.

Background: The technology revolution continues to affect all aspects of life. In 2004, people order pizzas; find jobs; play games; take courses; buy cars; search for marital prospects; download music; maintain relationships via email, chat rooms, and instant messaging; and so on, and so on, and so on. The pace of change and unquestioned acceptance of these changes might be assumed to enhance one's quality of life. Yet questions could be raised about cost, environmental, physical, psychological, and other consequences of the technology revolution. For this exercise, we will define quality of virtual life as including any aspect of life that has (or had) a physical analog or counterpart. That is, anything that can be done on the computer is "virtual" and done physically is "real" life.

Measurement Objective: A Valid and Reliable Measure of Quality of Virtual Life

Measurement Development Strategies and Critique: Now you'll read descriptions of how three researchers approached this problem and will be asked to critically review each one.

Case 1. The E-QoL-1 (a measure of electronic quality of life)

Description of Measure: Professor Smart realized that she had extensive experience with online communication because of her work at her college. She also realized that this experience was common among her colleagues and decided that she could tap their expertise in developing her measure of electronic quality of life. Her method was to invite a select group of 10 of her colleagues to a discussion board that she set up on her website. She posed this question: How has electronic communication affected your quality of life? She monitored and encouraged the discussion for four weeks and then downloaded the entire discussion. She then coded the discussion for key statements and turned each idea into an item for a measure. When she had finished, she had 30 items and was ready to validate the measure. To accomplish this task, she emailed the measure to the 10 colleagues from the discussion board and asked them to carefully review the items. She asked them to give her feedback on whether the measure appeared to represent the quality of their electronic life. After she had heard back from them, she revised the items appropriately, pronounced the measure valid, and began to plan a study with the measure.

Sampling

1. What kind of validity do you think this measure possesses, if any? Why do you think so?
2. Do you see any major weaknesses in the validity of the measure?

3. What is the impact of the sampling strategy used?

4. What next steps could you suggest for Professor Smart to add to her validation of the measure?

5. Discuss what steps the professor could take to examine the reliability of her measure.

**Case 2. The E-QoL-2 (another measure of electronic quality of life)**

*Description of Measure:* Professor Smarter read the article about the new measure of electronic quality of life (the E-QoL-1) and decided that he could do better. His strategy was as follows. He first recruited 250 students from the psychology department volunteer pool to participate in the study. He conducted his study in two stages. The first stage was to have the students keep a daily diary of electronic activities for one week so he could have an inventory of what the students did, how much they did it, and what their reflections were on how it affected them. Next, he coded all the activities into categories with examples from the diaries. He also examined how frequently each activity was done and eliminated the ones that rarely occurred to keep the list manageable. The next step was to review and code all the things that the students said were consequences of their electronic activities. Again, he put them into categories and ended up with five dimensions: relationships, health, productivity, finances, and recreation. Finally, he put it all together. The measure had a list of 15 activities with ratings of the impact on all five dimensions. To validate the measure, he had all 250 of the students complete it along with a previously validated general quality of life measure. He examined the correlations between his new measure and the other quality of life measure. He also calculated the internal consistency reliability (Cronbach’s Coefficient Alpha), and the test-retest reliability by giving the E-QoL-2 measure to the students a second time one month after they had taken it the first time.
Sampling
1. What kind of validity do you think this measure possesses, if any? Why do you think so?

2. Do you see any major weaknesses in the validity of the measure?

3. What is the impact of the sampling strategy used?

4. What next steps could you suggest for Professor Smarter to add to his validation of the measure?

5. Discuss what other steps the professor could take to examine the reliability of his measure.

Case 3. The E-QoL-3 (Your measure!)
Design your own measure of electronic quality of life. In the space provided, outline the steps that you could take to extend this line of research even further. Try to think of the strengths as well as the weaknesses of the two examples you've critiqued and see whether you can think of ways of adding to the validity and reliability of such a measure. (An alternative exercise would be to use this portion of the workbook to outline the steps needed to develop your own measure of the construct you are planning to study. This information would be especially useful if you've discovered that there are no existing measures for your study.)