

**Considerations in the Measurement of Awareness**

By

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## Considerations in the measurement of awareness

### Introduction

Measuring awareness or knowledge of issues creates challenges. To start with, the term awareness is less than clear. To be aware means to know, to realize or interested in knowing about something, or, to know that something is important. Awareness is knowledge of something (Oxford Advanced Learner's Dictionary). Then, what is the difference between awareness and knowledge. It is one of the behaviours under the "receiving" in taxonomy of affective domain. Awareness can be either self-reported or tested. Awareness measurement has the object of what respondents know as well as what they do not know. It can either be tests of maximum performance or the tests of typical performance.

### Nature and meaning of Awareness

Awareness in general means, knowledgeable being conscious; cognizant, informed alert. Awareness is the state or ability to perceive, to feel, or to be conscious of events, objects, or sensory patterns. In this level of consciousness, sense data can be confirmed by an observer without necessarily implying understanding. The possessor of any knowledge must contain awareness but mere awareness does not contain any type of knowledge. More broadly, it is the state or quality of being aware of something.

1. One frequent meaning of awareness in education is Knowledge from milieu without direct teaching. For example, Public awareness of cancer, HIV/ AIDS Awareness or Nutritional awareness. This can be referred to as *awareness about*. Awareness may also refer to public or common knowledge or understanding about a social, scientific, or political issue Multicultural awareness. To say a person "has greater awareness", it can mean they have greater knowledge of such subjects. Here awareness" may refer to public or common knowledge or understanding about a social, scientific, or political issue
2. In psychology, the most popular meaning of awareness is awareness as self-perceptions. For example when we say awareness of Body, Emotional Awareness, awareness of self or strength awareness. This can be described as awareness of. This can be seen as sensitivity to oneself. In all these awareness, it is a kind of self-awareness (awareness of own individuality). Here awareness denotes "unique perception". Unique perception is

completely subjective. It does not require great 'knowledge'. Unique perception of all is considered a "higher" form of awareness.

3. The third meaning of awareness is Awareness of = ability to deal with. Some awareness tests are conducted to find out the ability to deal with specific situation, and tasks. For example Phonological Awareness Skills Test, Computer Awareness Test. Again, the assumption is that the populations under consideration possess the ability or skill.

### **Components or dimensions of awareness**

The dimensions of awareness vary with the specific meaning given to awareness. In *knowledge from milieu* without direct teaching it may include anyone or a combination of awareness of content domains, Awareness of consequences, awareness as realization and awareness as perception. In *awareness of self* it is humans or an animal's perception and cognitive reaction to a condition or event. In *ability to deal with*, the dimensions or components are to be derived by the domain analysis or if the domain is ill-defined may be operationalized through factor structure (for example, phonological awareness). Thus, the awareness measurement can be on well defined and ordered domains, unordered domains, ill-defined domains, and undefined domains. If the domain is ill-defined or undefined it is the task of the author to develop a clear operational definition of the area of awareness to be measured.

### **Format of the instrument**

Measures of awareness usually come with three different nomenclatures, scales, tests or questionnaires. It is clear that the naming is not arbitrary, and it depends on the purpose of the measurement referred to above, and on the item formats of the instrument. Format of items in turn depends, partly, on the population under study- whether the study uses expert in the area having previous exposure in the area with training or education or novices without any specific exposure to the area; and partly, on the purpose of the study.

Awareness as self-reports can be explored in the form of opinion or direct questions. Here, it must be born in mind that it is socially desirable to appear well informed and seeming well-informed is not easily accomplished with a "don't know" response. Knowledge question in terms of an opinion question reduces the threat to the respondent.

- i. In the "Question/Opinion" format, the introduction stressing the acceptability of answering "hasn't heard" or "don't know" work well.

- ii. Items for self-perception, domain knowledge or social awareness can be in the form of questionnaires self-reports to questions “do you think that ...” to be responded "haven't heard about this" "don't know "or *true, not true, or don't you*
- iii. Statements of opinion can be followed by choices *tell me if you agree, disagree, or have no opinion.*
- iv. Test items formats can be selection or completion type

### **Tests of maximum performance vs. tests of typical performance**

Awareness tests are conducted on the assumption that the concerned population ought to possess the knowledge of the domain without a specific course of instruction. Achievement tests on the other hand are usually given after a period of instruction. Since the awareness is expected in the concerned population in normal scenario, some awareness tests are conducted with a diagnostic purpose to identify which aspects of the domain of knowledge is lacking in the population, so that a remedial programme can be installed if need be.

Thus the goals of awareness testing can either one or a combination of the following.

- i. Diagnostic purpose to identify which aspects of the domain of knowledge is lacking in the population
- ii. Maximum performance of the individuals
- iii. Typical performance of the group.

### **Item analysis**

This is one of the most misunderstood and misapplied area in developing a measure of awareness. It is especially so, if the intent of the study is to identify the weaker areas of awareness or is to make suggestion for course or programme development or improvement. Indexes of item difficulty and item discriminating power are less meaningful because criterion referenced tests are designed to describe learners in terms of the types of learning tasks they can perform unlike in the norm-referenced test where reliable ranking of testees is desired. In this case, item difficulty of each test item is determined by the learning outcome it is designed to measure. The standard formula for determining item difficulty can be applied here but the results are not usually used to select test items or to manipulate item difficulty. Rather, the result is used

for diagnostic purposes. Also some of the best items might have low or zero indexes of discrimination.

Item editing and analysis can be employ the following as well.

- i. Expert opinion of the adequacy of the item, item structure, and comprehensiveness
- ii. Conventional item analysis in terms of discrimination power and difficulty for test item format applied for comparison purpose
- iii. Factor loading for ill-defined or undefined domains using opinion and test item formats.
- iv. Cognitive interviewing for novices, self-reports especially with questionnaires

A note on cognitive interviewing will be helpful, as it is not yet a usual practice. Cognitive interviewing techniques (Rachel A Caspar, et al, 1999), focuses on the cognitive processes that respondents use to answer survey questions in a volunteer subjects are recruited, and are interviewed either in a laboratory environment. In the case of self-report items, small-scale, informal cognitive interviews of friends, colleagues, and family members do appear to be effecting in “bringing out” issues and problems in questionnaires that the designer has completely overlooked. The process focus on following aspects. *Question intent*: What does the respondent believe the question to be asking? *Meaning of terms*: What do specific words and phrases in the question mean to the respondent? *Retrieval from memory of relevant information*, i.e., What types of information does the respondent need to recall in order to answer the question? *Sensitivity/Social Desirability*: Does the respondent want to tell the truth? Does he/she say something that makes him/her look "better"? *Mapping the response*: Can the respondent match his or her internally generated answer to the response categories given by the survey question?

### **Reliability and validity**

Test–retest reliability can be assessed with repeat administration over a 2-week interval is suggested for self-reports. Internal consistency estimate of reliability is also suggested especially for illdefined domains and awareness tests.

External validity can be established by demonstrating that a group of experts (not involved in the development) scored significantly higher than a group of equally educated non-experts. Sensitivity to change in knowledge can be demonstrated by showing that scores obtained

by members of the general public were significantly higher after a brief educational intervention. Reporting a content validity index (CVI) is becoming more popular.

## **Conclusion**

Though, the measurement of awareness (at least in the discipline of education) is taken up by masters students as an easy way for fulfilling the requirement of having developed a measurement tool for oneself, it does not absolve them of the responsibility to follow the fundamental steps in the construction of a measure. Hence whenever a measure of awareness is being designed, following the steps given below will prove helpful to better clarify the nature of construct under consideration and in better operationalizing it. 1) Identify type of awareness 2) Defining the nature of the domain 3) Deciding the nature population 4) Stating the purpose of the measure 5) Specifying the domain and construct items on it 6) Item editing and analysis and 7) Evidencing Reliability and Validity.

## **Reference**

Rachel A Caspar, Judith T. Lessler, and Gordon B. Willis Gordon B. Willis. (1999) *Reducing Survey Error through Research on the Cognitive and Decision Processes in Surveys*. Short course presented at the 1999 Meeting of the American Statistical Association. Research Triangle Institute