

Advantages and Limitations by Category of Traditional Data Collection Methods

Approach/ Procedure	Tools	Factors Affecting Choice of Approach/Tool	
		Advantages	Limitations
Interviews	Structured and unstructured interviews: <ul style="list-style-type: none"> ▪ Personal interview ▪ Telephone interview ▪ Written interview ▪ Internet questionnaire interview 	Reveals feelings, causes, and facts as well as possible solutions to problems. Affords maximum opportunity for free expression of opinion and giving of suggestions.	Is time-consuming and expensive, relatively few people can be reached. Results can be difficult to quantify. Can make the subject feel uncomfortable.
Questionnaires	Written and distributed by hand, mail, or electronic means	Can reach many people in a short time. Affords opportunity for expression with reduced fear or embarrassment. Yields data easily summarized and reported. May be inexpensive compared to other methods.	Limited opportunity for free expression of unanticipated responses. May be difficult to construct. Limited value for getting at causes of problems and possible solutions.
Knowledge tests	Written test with restrictive answers: <ul style="list-style-type: none"> ▪ Multiple-choice questions ▪ True/false ▪ Matching questions ▪ Fill-in-the-blank Problems/case studies Essays Oral examinations	High reliability and high validity. Potential for testing a wide range of knowledge and skills. Can permit immediate feedback.	Requires extended time to construct. Requires adjustments for positive scores that can be achieved by chance. Provides cues that may not be available in practice or real-world challenges.
Observation tools	Direct observation Participant observation Video recording, audio recording, and text analysis Standardized patients Critical incident technique	<p>Well suited to evaluating clinical skills, technical skills, and interpersonal skills. Provides the examiner information on visual and auditory processes.</p> <p>Less likelihood of subject altering behavior in presence of observer as time passes.</p> <p>Can provide opportunity for verification analysis.</p> <p>Can discriminate wide range of examinee's clinical performances. Can be valid and reliable.</p> <p>Can detect trends, identify qualitative concerns, and investigate complex subjects.</p>	<p>High cost. May influence performance through learners' awareness of observation and assessment.</p> <p>May be obtrusive to subjects. High cost. Requires dense documentation.</p> <p>High cost. Evaluation generally is limited to what is seen or heard on tape.</p> <p>High cost to train and employ standardized patients.</p> <p>Bias can be a factor. Depends on recall of participants.</p>
Archives/ documents	Administrative, clinical, and secondary databases Chart audit (review) Chart-stimulated recall	<p>Assesses performance-related practices not detected through other means. Low cost if database is in place.</p> <p>Captures test/medication orders, repeated or continuous visits. Routinely performed.</p> <p>Good inter-rater reliability with trained interviewers and assessors.</p>	<p>Crude. No presentation of performance. Reliability and validity can vary if user did not develop database.</p> <p>May be incomplete or inaccurate reflection of the care encounter. Can be missing patient symptoms, communication issues, and care options considered but ruled out.</p> <p>Costly and time-consuming, especially for large numbers.</p>
Technology-assisted evaluation models	Computer simulations Computer-aided testing Computer-aided visualization of relationships	<p>Can eliminate observer variability, provide immediate feedback, and score the examinee as the simulation/test proceeds.</p> <p>Allows for analysis of attributes, sentiments, affiliations, communication, roles, and diffusion of innovations.</p>	<p>High costs of equipment and maintenance. Expensive to develop.</p> <p>Expertise in network concepts is acquired through application in network analysis.</p>

*This table derives from Jennett et al⁸. In: Davis DA, Barnes BE, and Fox RD. The Continuing Professional Development of Physicians. Chicago: AMA Press 2003, Knowles MS⁹. The Modern Practice of Adult Education. Chicago: Association Press, 1970, and Morgan DL, The Focus Group Guidebook. Thousand Oaks, CA: Sage, 1998.